THE IMPACT OF MOBILE PHONE BANKING TO THE REDUCTION OF INCOME POVERTY IN TANZANIA: A CASE OF M-PESA

By

Editha Eliger Nyambo

A Dissertation submitted to Dar es Salaam Campus College in Partial Fulfilment of the Requirements for the Award of Master of Business Administration (Corporate Management) Degree of Mzumbe University

2014

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled **'The Impact of Mobile Phone Banking to the Reduction of Income Poverty in Tanzania: A Case of M-PESA',** in partial fulfilment of the requirements for the award of the degree of Master of Business Administration (Corporate Management) of Mzumbe University.

_____

Major Supervisor

_____

Internal Examiner

Accepted for the Board……

_____

CHAIRMAN,SCHOOL/FACULTY/CAMPUSCOLLEGE/DIRECTORATE/BOARD

DECLARATION

AND

COPYRIGHT

I, **Editha Eliger Nyambo**, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature ----------

Date ----------

ACKNOWLEDGEMENTS

I am very grateful to acknowledge the support and collaboration by many people who directly or indirectly contributed to the completion of this work. It is not possible to mention all of them by names; however, I am obliged to mention a few on behalf of the rest.

First of all, I would like to express my deep and sincere gratitude to Almighty God for giving me good health and strength throughout the study period. I give my special thanks to my dissertation supervisor Professor Damas Muna, whose supervision, encouragement and guidance throughout the research period has made me through. Without his tireless, constructive criticisms and guidance this work would have been impossible.

I would like to acknowledge the invaluable guidance provided by all the course instructors at Mzumbe University, Dar es Salaam Campus College. I sincerely, appreciate the administration staff at Mzumbe University for their genuine help and support throughout my study period. I am also grateful to my mates whom we were pursuing this course together for their contribution in class which has in one way or another shaped me and made me strong. Other special thanks should go to my friends Elizeus Rwegasira Tiilaga and Fredrick Mukebezi for their everlasting support and encouragement throughout my study period which has played an enormous contribution to this study. My deepest thanks and appreciation to my mother Bernadetha Nyambo for her support during all these years and encouragements. Thanks to A. Mwenda and W. Rweyongeza my office mates for their cover when I was busy doing my studies and their encouragement as well as support. And lastly but not least, I owe many thanks and appreciation to all participants in Vodacom Tanzania head office located at Mlimani City and those who gave me advice and directions of any kind for their cooperation which contributed to the success of data collection.

DEDICATION

This dissertation is warmly dedicated to my beloved parents; mother Mrs. Bernadetha Eliger Nyambo, to my late father Mr. Eliger Laurent Nyambo who passed away more than 12 years ago, I really appreciate his caring and support he made to me throughout his lifetime although he is no longer alive but his presence will be recognised always and forever. May his soul rest in external peace, Amen.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND ACRONYMS

ATM	Automatic Teller Machine
CRDB	Co-operative and Rural Development Bank
DAWASCO	Dar es Salaam Water and Sewage Corporation
DSTV	Digital Satellite Television
ICT	Information and Communication Technology
LUKU	Lipia Umeme Kadri Utumiavyo
NBC	National Bank of Commerce
PIN	Personal Identification Number
SMS	Short Message Services

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

Mobile banking affects the lives of billions of people around the globe, including the poor. However, despite all the attention M-Pesa has received, there is little or few financial survey available or conducted before and after the launch of M-Pesa in the area in spite of the potential of mobile phone banking in extending the provision of financial services to unbanked people particularly the poor and low income households. The general objective of this study was to explore the impact of mobile phone banking to the reduction of income poverty in the lives of individuals in Kinondoni district.

A case study research design was used in the study whereby a sample of 99 respondents was involved. Data collected were descriptively analysed using Statistical Package for Social Sciences (SPSS) version 16.0.

The findings revealed that, pricing of products through M-Pesa has motivated poor people to utilize the services for buying various goods and that M-Pesa has facilitated financial transactions to poor people and that it has boosted their economic growth by having agents at their doors. M-Pesa has removed the barriers of an experience and time consuming visit to the nearby bank as poor people are able to access financial services through M-Pesa because of its good service quality and reliability while becoming a vehicle for saving and transferring money from individual to individual with little storage value. Moreover, M-Pesa has reduced the cost of transferring money compared to formal banking as people have shifted savings from informal tools to M-Pesa due to the perceived security. However, the service providers need to facilitate users on better use of M-Pesa services and reduce service charges in terms of tariffs to enable users to effectively utilize the services.

It is concluded that poor people are willing to adopt mobile phone banking as it is easily accessible, convenient, cheap, easy to use and secure, something that has necessitated the raising of their income.

It is also recommended that service providers need to improve their services so as to avoid unnecessary accessibility and avoidance of loss of money in order to be trusted and relied upon.

CHAPTER ONE
BACKGROUND INFORMATION

1.0 Introduction

The study explores the impact of mobile phone banking to the reduction of income poverty of individuals. This chapter describes the background of the problem; statement of problem; research objectives and questions; the significance; limitations, scope and the structure of the study.

1.1 Background of the study

Mobile phones affect the lives of billions of people around the globe, including the poor (Mago, 2014). The changing mobile technology has revealed opportunities and allowed nearly three billion people without bank accounts to access financial services. Mobile banking can reach the previously ‘unbanked’ low income earners and the unemployed as long as they have access to a cell phone (Oluwatayo, 2012). M-Pesa is a money transfer system operated by Vodacom, Tanzania in partnership with Vodafone group. Vodacom, Tanzania is one of the largest cellular phone providers in Tanzania (Rasmussen, 2009). M-Pesa allows users to exchange cash for "e-float" on their phones, to send e-float to other cellular phone users and exchange e-float back into cash (Camner *et al*., 2009). From virtually unconnected in the 1990's, over 60% of Africans now have mobile phone coverage and there are now over ten times as many mobile phones as landline phones in use (Aker and Mbiti, 2010). Even with the story of mobile phones' growth as a background, the growth of M-Pesa is startling. This explosive growth was also mirrored in the growth of M-Pesa agents (or service locations) whereby in June 2009, 14 months after the launch, M-Pesa in Tanzania had 280,000 users and 1,000 agents (Rasmussen, 2009). According to Camner *et al* (2009), today 80% of Vodacom’s M-Pesa agents are single independent businesses. Each agent has a direct relationship with Vodacom.

With M-Pesa, Vodacom customers can convert cash into electronic money (M-Pesa) at an authorized M-Pesa agent and can transfer some of it to any other mobile customer in Tanzania via a simple phone transaction (Rasmussen, 2009). Currently, with M-Pesa, Vodacom customers can deposit money, withdraw money, send money to any mobile customer in Tanzania, buy Vodacom prepaid airtime, pay a Vodacom post-paid bill purchase LUKU and make payments to DSTV and DAWASCO. M-Pesa was launched in Tanzania by Vodacom in April, 2008 (Vodacom, 2013). According to Finscope survey (2006), the major barriers to accessing financial services in Tanzania were lack of education in general and financial literacy in particular. More than half of the total population has never heard of a debit card, an ATM machine or even a current account. M-Pesa provides an affordable, fast, convenient and safe way to transfer money using mobile phone anywhere in Tanzania. The combination of widespread cellular communication and the ability to transfer money instantly, securely, and inexpensively are together leading to enormous changes in the organization of economic activity, family relations, and risk management and mitigation, among other things (Rasmussen, 2009).

M-Pesa agents are dependent upon the existing network of bank branches to manage the cash required in their business. A lower density of bank branches makes this cash management more challenging because the opportunity for branchless mobile phone banking is in part dependant on the development of the formal financial sector. A poorly developed banking sector makes it more challenging for agents to manage their cash (Finscope, 2006). Camner *et al* (2009), state that the explosive growth of M-Pesa has inevitably inspired a great deal of discussion about what the system really is and what it could grow to be. Is it simply a low-cost money transfer system competing with (or replacing) modalities such as cheques and Western Union? Is it a nascent form of electronic money that will someday largely displace cash? Can it be used as a savings account? Is it a means by which financial services can be provided to the unbanked? Despite all the attention M-Pesa has received, there is little evidence on its economic and social impacts and it is only in Kenya that there is financial survey available before and after the launch of M-Pesa.

Jensen (2007), argues that the introduction of mobile phones reduced price dispersion in fish markets in India and grain markets in Niger respectively. Bower and Christensen (1995), argue that in these instances the mobile phone technology has increased information flows, which has resulted in price reductions. In contrast, the development and introduction of M-Pesa can be viewed as a "disruptive technology" (Aghion and Howitt, 1992). Aghion and Howitt (1992), conclude that M-Pesa has revolutionized the money transfer industry. Kabbucho *et al* (2003), argue that the cost of instantly sending money through formal channels was higher in Kenya compared to M-Pesa that offered a significantly cheaper method of instantly transferring funds. Morawczynski and Pickens (2009), have suggested that M-Pesa serves as a partial substitute for the formal banking system. Burgess and Pande (2005), argue that the expansion of rural banking in India significantly reduced rural poverty rates. While this was mainly driven by increased access to credit, mobile systems such as M-Pesa could facilitate the expansion of branchless banking, in which banks increase the financial reach using agents as intermediaries to provide services to clients in rural and remote areas where the fixed costs of opening a branch would be prohibitive (Pickens *et al*., 2009).

The qualitative studies on M-Pesa have suggested that M-Pesa serves as a partial substitute for the formal banking system. Prior to the introduction of M-Pesa, most Africans were excluded from modern financial services (Morawczynski and Pickens, 2009). Mobile systems such as M-Pesa could facilitate the expansion of branchless banking, in which banks increase the financial reach using agents as intermediaries to provide services to clients in rural and remote areas where the fixed costs of opening a branch would be prohibitive. This possibility, however, is contingent upon banks' willingness to serve poorer clients and upon government regulations that promote or hinder branchless banking (Pickens *et al.,* 2009). A considerable literature on financial inclusion emphasizes that “banking the unbanked” can lead to better decision making, more efficient markets, and various other development goals (Collins *et al.,* 2009). Earlier studies that were done in Kenya found that there are many economic and social impacts that are caused by the development of M-Banking. These impacts include changing the living system of individuals and their

societies, larger remittances to rural areas, weakening of the social ties between migrants and their home community, increasing donations, increasing charity activities, increasing deposits of cash and withdraws, reduced rural poverty rates, and decrease in price dispersion of different products such as fish and grain (Rasmussen, 2009).

1.2 Statement of the Problem

White (2012), states that, as the forces of globalization continue to permeate even the most remote areas, populations everywhere have access to new technology, ideas, goods, and services. In Tanzania, Vodacom has over six million customers for its mobile phones banking service called M-Pesa, which by June, 2012 generated TShs.17 billion transactions primarily for domestic or international money transfers (Vodacom, 2013). While the mobile telephone is within sight of becoming a mature business, m-banking services like M-Pesa are still in their early days and are continually evolving in response to competitive pressures and customer needs. The statistics on financial access before the launch of M-Pesa in Tanzania is very interesting. In Tanzania, 54% of people were excluded (did not use any form of financial service; formal, semi formal or informal) while the use of formal and semi formal financial services in neighbouring countries like Kenya is two and a half times greater than in Tanzania (FinAccess and FinScope, 2006).

The political, economic, and social effect of these forces have transformed societies and changed the way people live. In particular, the globalization of technology and the financial markets have played a substantial role in international development (Vaughn, 2007). Whether or not this change is for the better, globalization cannot be reversed; governments and populations must learn how their cultural, economic, and political identities interplay with these new additions to their societies. The changes that come along with globalization do not affect all countries or individuals in the same ways (White, 2012). The problem is what economic and social impact does the invented technology and specifically M-Pesa have in Tanzania? However, despite all the attention M-Pesa has received, there are little or few surveys available before and

after the launch of M-Pesa in Tanzania. In spite of the potential of mobile phone banking in extending the provision of financial services to unbanked people particularly the poor and low income households, its impact on reducing income poverty has not yielded much, something that this study needed to explore for the betterment of those with low incomes.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of this study was to explore the impact of mobile phone banking to the reduction of income poverty in the lives of individuals in Kinondoni district.

1.3.2 Specific Objectives

The study had the following specific objectives;

i) To determine whether poor people's access to mobile phone banking raise their incomes.
ii) To examine the accessibility of financial services through mobile network called M-Pesa by the poor people.
iii) To determine the impact of financial services through M-Pesa to low income households.
iv) To suggest measures to improve the situation of poor people when using M-Pesa.

1.4 Research Questions

The study was guided by the following questions;

i) Does poor people's access to mobile phone banking raise their incomes?

ii) Are poor people able to access financial services through mobile network called M-Pesa?
iii) What is the impact of financial services accessed through M-Pesa to low income households?
iv) What measures need to be put in place in order to improve the situation of poor people when using M-Pesa?

1.5 Significance of the study

The study provided insights to financial institutions and mobile phone service providers, which have had difficulty in providing profitable services through traditional channels to poor clients, see opportunity in mobile phone banking (m-banking) as a form of 'branchless banking', which lowers the costs of serving low-income customers for the banks. Similarly, m-payments have also been able to extend affordable debit/credit services to the poor, which was otherwise only available through credit/debit cards.

The study provided facts that mobile money schemes can provide substantial convenience to bill payers by; linking the payment to an account from which the payment can be triggered instantaneously at any time, and expanding the reach of payment outlets to include any available cash in/cash out agent, for those wanting to pay in cash. For institutional billers, promoting real-time electronic payments through mobile money reduces credit risk, unremunerated float and channel management costs.

The study has provided the importance of mobile phone banking to the poor that has two advantages namely; i) it is available 24 hours a day and therefore meets banking needs at any time, ii) it is possible whenever mobile internet is available and thus, saves client's trips to banks.

The study has provided a feedback to the government (especially the ministry of science and technology) to enable it to provide necessary support to the service providers and subscribers so as to enhance the adaptability in different localities.

The study has also provided a feedback to the service providers by identifying the areas of difficulties they might encounter and get rid of them by being aware of those areas.

In addition, this study is important to the researcher as a partial fulfillment of Master degree as the requirement of Mzumbe University.

1.6 Limitations of the Study

The limitations of the study were as follows;

a) Financial Constraints

The research was, as a whole, funded by the researcher's personal financial resources, which were very limited. That being the case, the researcher was limited to visit some areas of study to gather or collect data; hence took a sample.

b) Response rate

It was expected that the response rate would be low due to respondents being very busy with their daily activities and others were absent at their working places. This is because, some respondents were traders and as such are mobile and could not be easily found implying that their responses, opinions and attitudes were not easily obtained. However, a continous follow-up was made for the study to be accomplished.

1.7 Scope of the Study

The study explored the impact of mobile phone banking to the reduction of income poverty of individuals living at Kimara, Magomeni and Tandale wards of Kinondoni district. It concentrated on determining whether poor people's access to mobile phone banking raise their income, examined the accessibility of financial services

through M-pesa, determined the impact of financial services through M-pesa to low income households and suggested measures of value to improve the situation of poor people when using M-pesa. Therefore, the results couldn't be generalized to other places other that Kinondoni district.

1.8 Structure of the Study

The study is divided into five chapters. Chapter one provides the background of the study. Chapter two reviews the relevant literatures from various authors to obtain the theoretical and empirical studies. The third chapter presents the methodology that guided the study. Chapter four presents and discusses the research findings while chapter five presents the conclusion and recommendations.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

This chapter reviews different literatures related to research objectives which the study wanted to achieve at the end. In this regard, areas covered include; the theoretical literature review; empirical reviews and the conceptual framework.

2.1 Theoretical Literature Review

Literature reviews are secondary sources, and as such, do not report any new or original experimental work. Their main goals are to situate the current study within the body of literature and to provide the context for the particular reader.

2.1.1 Definitions of terms

a) Mobile financial service

Mobile Financial Services (MFS) refer collectively to a set of applications that enable people to use their mobile telephones to manipulate their bank account, store value in an account linked to their handsets, transfer funds, or even access credit or insurance products (Donner & Tellez, 2008). MFS can be divided into two distinct categories: mobile banking (m-banking) and mobile payments (m-payments).

i) Mobile phone banking (m-banking)

Mobile phone banking describes the use of mobile-phone–based interfaces to provide account information and transaction opportunities to customers of financial institutions. From a user perspective, m-banking services may be active, such as client-driven account inquiries and transfers, or passive, such as automatic low-balance notifications. Customers using mobile phone banking gain increased

convenience and access, as well as the opportunity to detect account problems such as insufficient funds. Many m-banking services simply reproduce banking services already available online, with similar benefits for financial institutions: enhanced customer satisfaction and loyalty, along with increased account activity and related fee income without the operational costs associated with bricks-and-mortar banking (Boyd & Jacob, 2007).

ii) Mobile payment (m-payment)

A mobile payment is any transaction paid for using a mobile phone. The term describes a wide array of transactions, from the purchase of ring tones to person-to-person (P2P) money transfers (Barnes, 2007). From a location perspective, m-payments can be conducted remotely (top-up of mobile minutes for prepaid accounts, purchase of ring tones and games, and P2P transfers) or locally, using enabled mobile devices that communicate with devices installed at public transit turnstiles, merchant POS, ATMs and other points of access. Charging method represents another important distinction among types of payments. M-payments may be "prepaid" (either with phone minutes or through a prepaid platform loaded with cash), "pay-now" (in which the payment occurs in real-time or "near real time" in the case of debit cards), and "post paid" (charged after the fact to the user's phone bill, credit card, or bank account). Ultimately, under-banked consumers may benefit most from platforms that integrate both m-banking and m-payments features to provide a truly comprehensive financial services solution (Boyd & Jacob, 2007).

b) Mobile phone banking system

M-banking systems offer three general capabilities. Users can: i) convert cash in and out of 'stored value' accounts linked to their mobile phone; ii) use this stored value to pay for goods and services; iii) transfer stored value between their account and other people's accounts. Unlike simple airtime transfer features, m-banking systems support transfers of actual currencies. This means that a person can walk into an m-banking location, 'cash in' as if he or she were buying airtime for a pre-paid mobile

account, and then transfer that money anytime – often via text message – to merchants, utility providers, or other individuals (Heller, 2009).

M-banking reduces the need to carry cash, or to travel or wait in line to pay bills. It can guard against theft, replace costly bank cheques and increase the speed and reliability of transactions. In addition, people use m-banking services to send remittances home, quickly and inexpensively (Heller, 2009). Some of the more successful m-banking initiatives in developing countries are in South Africa (WIZZIT), the Philippines (Globe), Kenya (M-PESA) and Tanzania (M-Pesa, Tigo Pesa and Zap)

c) Income

Income is the consumption and savings opportunity gained by an entity within a specified time frame, which is generally expressed in monetary terms (Dean, 2006). From this standpoint, income is the total value of goods and services a person can buy during a certain period with no loss of wealth. Wealth consists of such assets as investments and property. Income includes interests and other returns from the lending of wealth, but income is not wealth. Income is received in the form of money or as items called imputed income. Such items include free room and board, and food grown at home (Mark, 2005). In the economy of a small community or of an entire nation, one person's consumption creates another's income. When a consumer buys a certain amount of goods or services, the producer receives that amount of income. The producer, in turn, may use this money for other purchases, thus providing someone else with income as it can be done on mobile phone financial services. One sends money to his/her relative who receives it from the agent through his/her mobile phone. Economists divide income sources into two categories based on earned income (received in return for labour e.g. salaries and wages) and unearned income (received in return for the use of resources other than labour, e.g. gifts, inheritances and certain transfer payments) (The World Book Encyclopedia, 1994).

However, for households and individuals, "income is the sum of all the wages, salaries, profits, interests' payments, rents and other forms of earnings received in a given period of time. For firms, income generally refers to net-profit; what remains of revenue after expenses have been subtracted. In the field of public economics, it may refer to the accumulation of both monetary and non-monetary consumption ability, the former being used as a proxy for total income. Henceforth, income is the net monetary value of products and services by all household members per month. Income is the most general word for money received from work, investments, e.t.c. It can be earned or unearned income (Cowie, 1989).

d) Education

Education in the largest sense is any act or experience that has a formative effect on the mind, character or physical ability of an individual (Chalmers, 1982). In its technical sense, education is the process by which society deliberately transmits its accumulated knowledge, skills, and values from one generation to another. It is the formal training and a process of educating or being educated. Etymologically, the word education is derived from *educare* (Latin) "bring up", which is related to *educere* "bring out", "bring forth what is within", "bring out potential" and *ducere*, "to lead". (Chalmers, 1982)

Teachers in educational institutions direct the education of students and might draw on many subjects, including reading, writing, mathematics, science and history. This process is sometimes called schooling when referring to the education of teaching only a certain subject, usually as professors at institutions of higher learning. There is also education in fields for those who want specific vocational skills, such as those required to be a pilot (Beshouri and Gravrak, 2010). In addition there is an array of education possible at the informal level, such as in museums and libraries, with the Internet and in life experience. Many non-traditional education options are now available and continue to evolve. One of the most substantial uses in education is the use of technology. Classrooms of the 21st century contain interactive white boards, iPads, iPods, laptops, etc. Teachers are encouraged to embed these technological

devices in the curriculum in order to enhance students learning and meet the needs of various types of learners. A right to education has been created and recognized by some jurisdictions. For the rural people who own or are in the process to own mobile phones education means; the ability to use the services provided by the provider without fail such as sending and receiving money.

New ICTs in combination with old ICTs like satellite, radio and TV offer many possibilities for non-formal and continued education. Furthermore, new ICTs allow the process and content of education to be determined by learner preferences and priorities, thus opening up possibilities for designing and providing education in forms that are locally relevant. (Gurumurthy, 1992). Heeks (1999) gave some priorities for the development agenda that are: the poor need knowledge to access, assess and apply existing information and need resources for action more than they need access to new information; the poor need access to new, locally-contextualized information more than access to existing information from an alien context; the information needs of the poor may be met by more informal information systems than by formal ICT-based systems; the poor will reap the fullest benefits of ICTs only when they know and control both the technology and its related know-how.

e) Infrastructure

Infrastructure is a category of investment that is generally, though not always, a public good (Thioune, 2003). In general, infrastructural investments either produce services directly for household consumption (water, sanitation, social service infrastructure, telecommunications, electricity) or provide critical inputs that are used by enterprises in the production process (transport, port facilities, electricity, and information and communications technology (ICT). As with any form of investment, spending on infrastructure can take the form of a new investment, but also may entail operations and maintenance (O&M) or the rehabilitation of existing infrastructure such that the life span of the capital good and the benefits produced are as initially conceived (Cohen *et al*, 2008).

The World Bank's *World Development Report 2010* defines infrastructure according to three categories; *i) Spatially universal* infrastructure, which includes housing, water, sanitation, and basic social services (e.g., education and health); *ii) Economically productive* infrastructure, such as energy, ICT, irrigation, ports, and transport (roads and railways), which can complement the work force in manufacturing and services and facilitate employment growth in urban areas; and *iii) Spatially connective* infrastructure, which can include transport modes that connect regions within a country, or that facilitate international trade (either cross-border within a region or with global markets). As a public good, infrastructure is characterized for the most part by two features: it is mostly non-rivalrous (that is, if I use it, I do not limit your capacity to use it), and non-excludable (I cannot stop you from using it). Think paved roads or public parks (Heller, 2009). And the production function of infrastructure is often characterized by economies of scale or increasing returns, meaning the more that the good is produced/supplied, the cheaper the marginal cost of producing/supplying it. In addition, some infrastructure projects provide benefits beyond the imagined direct benefit: for example, a road allows community members to travel more easily; which is what we might directly expect, but it may also increase tourism to the country because tourists can move easily, travel, or may increase education consumption because children can now go to school more easily. For these reasons, the private sector usually undersupplies infrastructure because it cannot capture enough profit to cover the cost of supplying the good (Cohen, 2008).

2.1.2 Theories of Mobile Phone Banking

There are numerous theories that attempt to explain how mobile phone banking seems to be more prominent. The following theories may lead to the review towards the understanding of mobile banking.

2.1.2.1 The Piggy Bank Theory of Digital Activism

According to the piggy bank theory of digital activism, the term "mobile banking" is briefly mentioned in the context of repressive regimes shutting down cell phone networks. More specifically, as mobile banking services continue to grow in developing countries, so do the opportunity costs of interrupting access to mobile phone networks (Albanesi, 2007). The theory suggests that repressive regimes are incurring increasing opportunity costs when they decide to cut access to the Internet and or cell phone networks. The theory states that doing so incurs financial and ultimately political costs. The term was coined by Kedzie (2003), who argues that an increase in the relevance of digital or networked technologies will force repressive regimes to face a dilemma, where they will have to choose between open communications, which encourage economic development, and closed communication, which may help control unwanted 'dangerous' ideas but may hinder access to the information economy (Ivatury and Mas, 2008).

2.1.2.2 Cute Cat Theory

According to Ethan's Cute Cat Theory (2008), it is related to the concept that most web and mobile phone users access online content for entertainment purposes, for example to look at pictures of cute cats. If repressive regimes block access to socially entertaining sites like YouTube, Facebook, and the like, this may backfire by possibly politicizing a large user base that until then was largely apolitical (Jonathan and Camilo, 2008). The regime's decision to block social media sites will drive a large number of new users to these social networks as this will remain one of the only non-censored social networking platforms available to people. This in turn makes it impossible for the regime to shut access to the social network without serious blowback economy (Ivatury and Mas, 2008).

2.1.2.3 Development as Freedom Model

This is the model that was developed by Sen (1999) and later modified by Grewal (2006). Consider a hypothetical migrant in Nairobi who wishes to send a remittance to his family in a distant village. Prior to the rise of M-Pesa, this was done through a variety of means, but as detailed above, M-Pesa has significantly replaced alternative means of remittance, and Tanzanians as it was for Kenyans report being pressured to converge on M-Pesa by peers who are already users of the system (Jack and Suri, 2011). As M-Pesa has grown and replaced alternative means of remittance, the voluntariness with which the migrant chooses M-Pesa has shrunk. Assessing this redistribution of power, requires a theory of development. According to Grewal (2008), development is considered a process of expanding the freedoms people have to lead the lives they have reason to value, that is, their well-being. Sen (1999), equates development with an expansion of freedom and liberty as a substantive good in itself. Enhanced freedom is instrumental. Sen (2003), identifies five freedoms that are instrumental in reaching development goals. These are 1) political freedoms, 2) economic facilities, 3) social opportunities, 4) transparency guarantees, and 5) protective securities.

2.1.2.4 Agents Network

The M-Pesa agents are organized into groups, according to three models. In the first, one member of the agent group (the "head office") deals directly with M-Pesa, while subsidiary agents, who are owned by the head office, manage cash and e-float balances through transactions with the head office (Albanesi, 2007). Both the head office and the agents can transact directly with the M-Pesa to users. In the second model, an aggregator acts as the head office and deals directly with the network while managing the cash and e-float balances of its agents. However, the agents can be independently owned entities, with which the aggregator has a contractual relationship. The final model, and most recent, model allows a bank branch, called a "super-agent," to perform as purely an agent for agents (Ivatury and Mas, 2008). The bank branch can trade cash and e-float with all M-Pesa agents, but unlike the other

two models, the bank does not trade e-float directly with M-Pesa customers (CFSP, 2013).

M-Pesa system provides money transfers as banks do in the developed world. The account is very secure, PIN-protected, and supported with a 24/7 service provided by Safaricom and Vodafone Group (Hughes and Lonie, 2007). Bångens and Söderberg (2008), argue that whether M-Pesa supports economic development or follows in its track is not hitherto verified in the existing pool of evidence. As a word of warning or caution, there is little evidence yet to verify the prospects of serving unbanked through M-Pesa models and their impact on poverty alleviation (Bångens and Söderberg, 2008). Vaughn (2007), argues that some individuals stored money in M-Pesa due to safety considerations, especially when travelling across the country. Understanding the complicated interplay between technology and society requires moving beyond, or, more accurately, between the macro and micro framings (Misa, 1994). According to Brey (2003), writes of "specification" is a method where an abstract phenomenon (e.g., the interplay between ICT and development) is examined through a study of a specific case, for example M-Pesa. Economic facilities have been the most influenced, with researchers finding significant cost savings for users (Ivatury and Pickens, 2006); decreases in the amount of time needed to travel (Williams and Torma, 2007); reduced risks of theft (Morawczynski, 2008) and especially in rural areas (Morawczynski, 2008).

According to Bower and Christensen (1999), the development and introduction of M-Pesa can be viewed as a disruptive technology or an example of creative destruction (Aghion and Howitt, 1992), where M-Pesa revolutionized the money transfer industry. M-Pesa supports the "dual system" in Tanzania, namely the mutual support provided between rural households and family members who go to cities to seek work (urban migrant). The rural community remains a source of support for the urban worker during downturns, while urban workers help rural family members make ends meet with their remittances (Morawczynski, 2008). Donner and Tellez (2008), state that the introduction of mobile banking services is having, and will continue to have a disproportionately positive impact on the poor compared to their

wealthier counterparts. Rapid growth of mobile phones usage and the continuous rise in wireless coverage fuel expectations that access to financial services through mobile phones could transform the way financial services are provided to poor, vulnerable and low-incomes population. Though, understanding the true impact of mobile money on the lives of the poor will require understanding of actual usage behaviours (Donner and Tellez, 2008)

FinAccess (2006), states that close to 42% of M-Pesa users reported using the system to purchase mobile phone airtime. Approximately 26% of users reported using M-Pesa to save money which is contrary to Jack and Suri (2011) who concluded that 75% of M-Pesa users were saving which is a relatively high proportion. Close to 20% of users also report using M-Pesa while travelling, presumably for safety concerns (Morawczynski, 2009). On the other hand, Pulve and Sjöblom (2009), state that approximately 6% of users made donations via M-Pesa, and argued that their experience in the field suggests that this has grown because currently the majority of calls for donations now include an M-Pesa option. Morawczynski (2009), suggests that M-Pesa's popularity has been driven by its speed, safety, reliability, extensive network of outlets, and its price relative to the alternatives. Morawcyznski and Pickens (2009), conclude that M-Pesa has changed the patterns of remittances. This was supported by FinAccess (2009), which show that almost 35% of users report that they have increased the frequency of sending transfers due to M-Pesa, while 31% report an increase in the receipt frequency of transfers due to M-Pesa.

In addition, Pulve and Sjöblom (2009), state that while the mobile telephone is within sight of becoming a mature business, M-money services like M-Pesa are still in their early days and are continually evolving in response to competitive pressures and customer needs. Eijkma *et al* (2010), argue that all M-Pesa e-float is backed 100% by deposits held at commercial banks. Interest earned on these deposits is donated to a charity, which allows M-Pesa provider to avoid being regulated as a bank. Camner *et al* (2009) conclude that although a significant number of surveyed respondents indicate that they use their M-Pesa accounts as a vehicle for saving, their analysis of aggregate data suggests that the overwhelming use of M-Pesa is for

transferring money from individual to individual, with extremely little storage of value. According to Albanesi (2007), M-Pesa users have relatively high opportunity costs of holding funds on their phones. There seems to be little evidence of users bunching several transfer receipts together into a single withdrawal in order to economize on fees. This suggests that even if M-Pesa were to pay interest at the same rate as banks, there would not be a significant change in the saving behavior of users (Camner *et al*, 2009). A key market driver for the diffusion of mobile banking services is increasing income levels and permanent employment. This is corroborated by literature reviews that show that most unbanked have consequently no formal earnings, rely on farm income, or live on welfare from friends and families (Finscope, 2007).

According to CFSP (2013), using M-Pesa, individuals can exchange cash for e-money at par with any M-Pesa agent across the country, and transfer these balances via SMS to any other cell phone in the country (including to sellers of goods and services), even if the recipient is not registered with M-Pesa and even if the phone operates on a competitor's network. Depositing funds is free. There is a fixed fee of approximately 200 Tanzania shillings per SMS transfer. Withdrawals are charged on a sliding scale though the price is higher if the recipient is not a registered user. No interest is earned on account balances and M-Pesa does not make loans (Vodacom, 2013). Mas and Morawczynski (2009), argue that much of M-Pesa's success was due to the structural features like free deposits and no requirements for minimum balance. Customers pay only when they actually do something with their funds, other favourable features are the ability to send money to non-customers and through partnerships with M-Pesa Point, Equity Bank and Diamond Trust Bank, and to make ATM withdrawals. In Tanzania M-Pesa has partnership with other organizations like CRDB bank, NBC etc.

Morawcyznski and Pickens (2009), state that M-Pesa users sent smaller but more frequent remittances, which resulted in overall larger remittances to rural areas. They also argue that urban migrants using M-Pesa visited their rural homes less frequently, potentially weakening the social ties between migrants and their home community.

M-Pesa users often keep a balance on their M-Pesa accounts, thereby using the system as a rudimentary bank account despite the fact that the system does not provide interest. Vaughn (2007), concludes that some individuals store money in M-Pesa due to safety considerations, especially when travelling across the country. According to Suri and Jack (2011), three out of four M-Pesa users indicate that they use it to save money. The inception of M-Pesa in 2007 dramatically changed the money transfer market. In less than two years since its inception, M-Pesa was the leading money transfer method with over 50 percent sending money via M-Pesa and over 65% receiving funds through the system in 2009 (Camner *et al*, 2009).

There are three basic transactions that customers conduct with M-Pesa in Tanzania. A customer may deposit money at an M-Pesa outlet in return for e-float (called a "cash in" transaction). The amount of the deposit is logged in a book kept at the outlet. Upon receipt of the money, the M-Pesa agent enters the customer's telephone number and deposits information into his/her cell phone, and the customer receives a confirmation text message that e-float has been deposited (Vodacom, 2013). Secondly, a customer may exchange e-float for cash at an M-Pesa outlet (called “cash out" transaction) the customer tells the shop clerk how much cash he/she wants, then chooses "withdraw cash" on the M-Pesa menu on his phone, enters the amount to be withdrawn (plus the relevant fee), and enters the agent number. The agent then receives a text indicating that the transaction is complete, and the agent then gives the appropriate amount of cash to the customer. Lastly, a user may transfer e-float from his/her phone to another phone, the user enters the phone number of the recipient and the amount to be transferred on his/her cell phone. The sender and recipient each receives a text message stating that the money has been transferred (Vodacom, 2013).

2.2 Importance of Mobile Phones

Mobile phones have transformed telephony profoundly (Ursula, 2010). They are equipped with functionalities which surpass telephony needs, and which inspire the development of value-added mobile services, the use of mobile phones as access

devices, and mobile commerce in general. There have been spectacular developments in information and communication technologies (ICTs) around the world over the past few years. ICTs have penetrated virtually every segment of society and projections suggest increased penetration rates. Though distinctions are often made between new ICTs such as computers and mobile phones, and old ICTs such as radio, television, and landline telephony, the current technological convergences increasingly blur such divisions. Thus, single devices such as mobile phones can now receive, process, store and display text, image and sound together (ITU, 2006).

In the developing world, there is evidence that many emerging mobile users are found in rural areas, and Africa has the world's fastest growing mobile phone subscriptions (ITU, 2006). In Tanzania, mobile telephony has been cited as the fastest growing ICT sub-sector, with five mobile providers in 2006 - Tigo, Zanzibar Telecom (ZANTEL), Vodacom, Tanzania Telecommunication Company Limited (TTCL) and Celtel/Zain-now Airtel. The mobile teledensity in the country had increased from almost zero to five between 1993 and 2006 (TCRA, 2006). The mobile telephone market is the fastest growing sector, with more than 17 million subscribers in a population of about 43 million of Tanzania. The major operators are Vodacom, Airtel, Tigo, TTCL-mobile, Zantel-mobile and Sasatel. The penetration level is only around 30%, implying that there is still room for growth. Vodacom is still by far the largest mobile operator, maintaining a market share of more than 39%, Zain/Airtel and Tigo are fast-growing. In 2009 Zain/Airtel had a 28% market share, and Tigo had made greater gains, leaping to 24% from 17.7% in 2008. This means that the three operators control more than 87% of Tanzania's mobile market. (TCRA, 2010)

Increased growth rates of mobile phones have been attributed to many factors including the liberalization of telecommunication markets; user-friendliness of the phones; the need for basic literacy in using the phones; prepayment modes; and usage of local languages in communication. Communications in Tanzania has in the past often been very unreliable. The mobile telephone services were usually available only in urban areas, although there are currently efforts to provide national wide

mobile phone coverage (Suhail, 2007). Utility services (i.e., telecommunications, power, water and gas) throughout the world were traditionally provided by large, usually state-owned, monopolies. However, encouraged by technological change, regulatory innovation, and pressure from international organizations, many developing countries are privatizing state-owned companies and introducing competition. The government has put in place a number of important communications polices, legislations and a licensing framework to expedite the growth of the sector. The government removed the monopoly of Tanzania Telecommunication Company Limited (TTCL) in telecoms sector to allow other players to come in (TCRA, 2009).

The number of mobile phones in use far exceeds any other technical devices that could be used to market, sell, produce, or deliver products and services to consumers. These developments open lucrative opportunities to merchants and service providers as;

a) The provision of advanced mobile telephony services provides; a) improved access to information and markets for farms, businesses, individuals and organizations, b) better access to educational, medical, government and other services, c) opportunities for developing new information- rich businesses and d) greater ability to participate in civil and political life.

b) Today, mobile telephony is being used to provide information to the farmers through short message services (sms) and multimedia supported systems in many areas as the result, connectivity to the world outside has been made easy. The phones can enable interactive communication flow unhindered by space, volume, medium or time, thereby influencing the existing communicative ecologies (Tacchi *et al.,* 2003).

c) Accelerated communication of information, in the interplay with other factors, can increase productivity; enhance access to services; widen markets; simplify transactions; substitute for physical transport; prevent crime;

improve governance, and create new socio-economic opportunities, among many other benefits.

d) The linkage between mobile phones, livelihoods and poverty is also an echo of older discourses on development communication that expounded on the positive links between communications, access to information and development (Butner, 2003). There is plentiful anecdotal evidence of this kind, much of it to be found in newspaper coverage. The surveys suggest that mobile telephony is frequently accessed by the poorest people, thanks in part to widespread sharing.

e) Investment in telecoms generates a growth dividend because the spread of telecommunications reduces costs of interaction, expands market boundaries, and enormously expands information flows. For rural areas, the problem historically has been that, they have been at the end of the line in terms of telecommunication infrastructure investment something which, steps should be taken to solve the challenges.

Moreover, the use of the mobile platform to deliver financial services is a relatively new phenomenon, and consensus is still emerging on which drivers are the most important and how they should be measured (Cohen *et al*, 2008).

To consumers;

a) Reduces travel time and costs (to travel to Bank branch) as in some places, people may travel 2-3 days by rough road or boat to withdraw salaries
b) Reduced transaction costs for remittances (1% cash-out for Globe-cash, compared to higher rates from Western Union)
c) Reduced opportunities for fraud, counterfeit and theft by providing a secure electronic mode for transferring funds (as opposed to, for example, travelling long distances to transfer cash);

To service providers:

a) Reduced direct costs for delivering savings and credit products;
b) Reduced errors and increased transparency in the transfer and recording of loan disbursements and payments and savings deposits;
c) Easier record keeping on each client through computerization of transactions through mobile phones, thus making it easier for financial institutions to tailor products and services for segments within their large pool of small customers (Barnes, 2007).

Furthermore, mobile phones are equipped with functionalities which surpass telephony needs, and which inspire the development of value-added mobile services, the use of mobile phones as access devices, and mobile commerce in general. The number of mobile phones in use far exceeds any other technical devices that could be used to market, sell, produce, or deliver products and services to consumers. These developments open lucrative opportunities to merchants and service providers. There have been spectacular developments in information and communication technologies (ICTs) around the world over the past few years. ICTs have penetrated virtually every segment of society and projections suggest increased penetration rates. Though distinctions are often made between new ICTs such as computers and mobile phones, and old ICTs such as radio, television, and landline telephony, the current technological convergences increasingly blur such divisions. Thus, single devices such as mobile phones can now receive, process, store and display text, image and sound together (ITU, 2006).

Many obstacles still make it difficult for rural households and entrepreneurs to access financial services. Accordingly, both service users and financial institutions offering services in rural areas are confronted with a broad array of challenges including;

i) *High transaction costs***:** provision of financial services in rural areas is associated with high unit costs both for institutions and for their clients. This is due to the fact that infrastructure for transport, communication and information technology is less developed in rural areas, as well as to the remoteness of these areas. Clients

frequently have to travel long distances to deposit savings or repay a loan. As they usually travel on foot, this can cost them an entire working day. Rural financial institutions face additional costs for ensuring security and managing liquidity. High unit costs are usually passed on to the clients, with the result that users in rural areas frequently pay higher interest rates than people in urban areas.

ii) *Higher risks***:** credit risk is higher in rural areas both for borrowers and for rural financial institutions. The revenues of rural households, whose incomes mostly depend on seasonal agricultural and livestock production, are volatile due to fluctuating weather conditions and pests or diseases. In addition, price fluctuations are high in the agricultural sector. Generally, rural households depend on one or two sources of income only, increasing the risk of credit default. Many households either entirely lack collateral or do not have a legal title to their house or land. Financial institutions thus have no means of securing their credits against defaulting. Defaulting clients run high risks as well: financial institutions will typically impose punitive interest rates for delayed payments and might even confiscate assets of defaulting clients.

iii) *Higher rates of illiteracy***:** in developing countries illiteracy rates are particularly high in rural areas. Poorly educated people face an additional challenge in accessing financial services: it is difficult for them to analyse credit risks and the profitability of a loan or savings scheme, to provide all documents and information (such as a business plan) required to apply for a loan, and to understand conditions and contracts. Some institutions fail to communicate interest rates and commissions in a transparent manner, and small prints in contracts can contain additional costs for borrowers (Cohen *et al*, 2008).

2.3 Literatures from various scholars

In Africa, the mobile money opportunity looms large because a large share of the population lacks access to basic formal financial services, but nonetheless needs to regularly transfer value due to domestic migration patterns (sending remittances back

home, paying school fees) and underdeveloped retail networks (settling utility bills, card-based airtime top-ups) (Montez and Goldstein, 2010). Access to formal financial services has been limited for many, if not most, of the world's poorest; more than 2.5 billion people do not use formal financial services. Research indicates that the poorer a household is, the stronger its need for financial services such as savings, remittances, credit, and insurance. Yet this has the potential to change soon. In the last few years, new business models have emerged which leverage the increased global penetration of mobile phones to extend the reach and transform the economics of retail financial services (Colins, 2005).

The reasons for individuals having no, or limited, access to mobile phone financial services are complex and span a wide array of cultural and economic issues. Consumers with no prior experience with formal financial services may not trust institutions with their cash (Cohen *et al*, 2008). Access to mobile phone financial services is hindered by a *lack of infrastructure, information, and inadequate customer service*. It is expensive for service providers to collect and disburse small amounts of cash using the proprietary physical infrastructure of traditional banking models, especially in remote places. They therefore struggle to offer products and services that suit the needs of the poor. Morawczynski and Miscione (2008) affirmed that mobile phone financial services enable people and businesses to deposit and withdraw funds and make electronic payments without the need for traditional bank branches. Along with a wireless communications platform that is fast approaching global ubiquity, a vital part of the infrastructure for mobile financial services is a network of retail agents. Agents function as the interface between consumers and providers performing functions such as opening accounts, accepting deposits, and dispensing withdrawals of cash.

Montez and Goldstein (2010) stated that mobile money services have had a transformative effect in other parts of Africa, particularly Kenya. With access to a mobile phone, a customer can use many of the same financial transactions that usually require a trip to a brick-and-mortar bank. Many believe "unbanked" low-income earners, who have been traditionally ignored by commercial banks, have the

most to gain from mobile money products. People face access issues to banking that range from great distances to a physical branch, the lack of funds to open accounts, and concerns about their security when travelling to a bank branch with cash. For people living in the rural areas, by the advent of mobile phone financial services, there will no longer be a need to travel to the city to withdraw money. Once they have received an SMS confirmation that money has been deposited into their virtual account, they can visit the nearest farmer, supermarket, agent, post office or nongovernmental organization in partnership with a bank or mobile company to collect their cash. For that case mobile banking is largely a win for the customer rather than the bank because banks traditionally had expensive distribution channels (Cohen *et al*, 2008).

The mobile money model requires *coverage;* being able to use it anytime, wherever one happens to be, and to send money to anyone, anywhere. Proximity and ubiquity: this after all is the disruptive innovation that allows mobile money to penetrate a new payments market (Morawczynski and Miscione, 2008). But that requires coordinated roll-out across the entire country. In general, mobile money should help in two key ways. First, the ubiquity of mobile money services should increase convenience and reduce opportunity costs (such as travel and queuing times), especially with respect to formal alternatives which tend to be more concentrated. Second, the electronic nature of transactions should increase safety, especially with respect to semi-formal and informal alternatives which are unsupervised and often even unrecorded. While customers may not be in a good position to understand the intrinsic security afforded by electronic channels, the fact that transactions happen in real time should help them to quickly gain trust in the system experientially (since the sender of funds can immediately call the recipient to confirm the success of the transaction) (Cohen *et al*, 2008).

A mobile money service needs to be supported by a network of retail agents reaching into the communities where customers live. Agents' main role is to provide cash in/out services within easy reach of their customers, which requires them to manage the logistics and risks associated with increased cash flow (Colins *et al*, 2005). Being

in the front-line of customer interactions, agents might typically also be used to promote the service within their communities, to register new customers and educate them. However, the transition from agents selling airtime to agents providing cash in/out services is not always so straightforward. Mobile money requires considerably higher entrepreneurial capacities than airtime sales due to the higher working capital movements and required treasury management expertise. In Tanzania, where retail capacity is relatively less developed than in neighbouring Kenya, Vodacom partnered with 6 super dealers to distribute airtime who hold all the direct relationships with street-level outlets. Super dealers wield substantial power in how the channel is structured, incentivized and used. Lacking direct control over its channel, Vodacom was not able to standardize, brand and promote a mobile money product effectively. It therefore had to build its M-Pesa distribution platform from the scratch, requiring additional investment (Montez and Goldstein, 2010).

2.4 Empirical Literature Review

Camner *et al* (2009) in their study called 'Mobile Phones and Economic Development in Africa' concluded that M-Pesa was designed as a service for the unbanked in emerging markets. M-Pesa is a faster, cheaper, and more reliable way to remit money. However, the service cannot function without the presence of the formal financial sector. Ferguson (2010), found that with the absence of a local M-Pesa agent in Kenya, Muchungucha province people save transaction costs of 150 KSH (US$2) per remittance in transportation costs alone in order to get their cash. Three out of four M-Pesa users indicate that they use it to save money. Recently, the potential for M-Pesa to be a savings vehicle has received even more attention, as Safaricom and Equity Bank in Kenya have introduced M-Kesho, an interest bearing savings account that is directly linked to M-Pesa (Suri and Jack, 2011). Maurer (2011) came into a conclusion from his book entitled 'The Risk Sharing Benefits of Mobile Money' that the burgeoning community of "mobile money intellectuals" has been connected to the ongoing debate on the relationship between technology and society. This debate has largely been split between those who study "broad causal patterns" (macro-level), and those who examine a "tightly focused story [of]

complexity and diversity" (micro-level). Yet, McKay and Pickens (2010) stated that the impact of mobile money has been evaluated largely in terms of instrumentality, and the results have been impressive and widely documented. Economic facilities have been the most influenced, with researchers finding enhanced income (Morawczynski and Pickens, 2009); improved livelihood strategies (Morawczynski, 2009); perceptions of economic expansion, capital accumulation, and business environment improvements; new job opportunities (Gencer, 2011); and economic growth (World Bank, 2010). However, their studies could not determine if poor people's access to mobile phone banking raise their income.

Rutherford (2010) on 'Mobile money' regarding M-Pesa was used for informal financial services. He stated that ease and low cost of M-Pesa have facilitated informal borrowing, perhaps even boosting it because it is so reliable. Users particularly valued the convenience and security of M-Pesa. But, Haas *et al.* (2010) with other surveys confirm that individuals perceive M-Pesa as a means to transact with a wider network of individuals than would otherwise be possible. Plyler *et al.* (2010) study on 'Mobile phone mapping and development' concluded that M-Pesa has enabled small businesses to expand and grow and has also increased the circulation of money in the communities. In addition, Aker (2010) study on 'Mobile phone use' affirmed that the introduction of mobile phones has reduced price dispersion in fish markets in India and grain markets in Niger respectively. In these instances the mobile phone technology has increased information flows, which has resulted in price reductions. Gikunju (2009), examines the financial statements of the Postal Corporation of Kenya and concluded that revenues and profits for its Posta Pay money transfer service declined rapidly after the introduction of M-Pesa and suggests that Western Union's and Money Gram's profits have also declined over the same period. Faced with obsolescence, money transfer companies such as Western Union and Money Gram have responded by cutting prices, even though they are still unable to match M-Pesa's superior convenience (Gikunju, 2009). Moreover, their studies could not examine the accessibility of financial services through mobile network called M-Pesa by the poor people.

Morawcyznski and Pickens (2009) in their study regarding 'Better future with mobile phone' concluded that M-Pesa users sent smaller but more frequent remittances, which resulted in overall larger remittances to rural areas. The urban migrants using M-Pesa visited their rural homes less frequently, potentially weakening the social ties between migrants and their home communities. This conclusion is supported by FinAccess (2009), who argues that almost 35% of M-Pesa users report that they have increased the frequency of sending transfers due to M-Pesa, while 31% report an increase in the receipt frequency of transfers due to M-Pesa. Surprisingly, 18% report a decrease in the sending frequency, while 22% report a decrease in the receiving frequency, with the remainder reporting no change in transfer frequency. Moreover, Morawcyznski and Pickens (2009) study highlighted that M-Pesa users often keep a balance on their M-Pesa accounts, thereby using the system as a rudimentary bank account despite the fact that the system does not provide interest. Their conclusion was that some individuals stored money in M-Pesa due to safety considerations, especially when travelling across the country and close to 20% of users also report using M-Pesa while travelling, presumably for safety concerns. Yet, their studies could not analyse the impact of financial services through M-Pesa to low income households.

Plyler *et al* (2010) in their study on 'Mobile phone mapping and development' identified four major areas of economic benefit of M-Pesa: local economic expansion in terms of money circulation and local employment; physical, financial and food security; financial, human and social capital accumulation; and business environment in terms of transactions ease and quality control. Morawczynski and Pickens (2009) argue that M-Pesa empowers rural women by making it easier for them to solicit funds from their husbands and other contacts in the city. Jack and Suri (2011) concluded that households without access to mobile money suffer a 7-10% reduction in consumption when faced with an unexpected negative income shock, but those with access to mobile money are able to smooth the effects of these income shocks completely. For example, with M-Pesa Jack and Suri (2011), argue that in cases of serious illness, user households are able to raise total expenditures and finance necessary health care expenditures (most likely from remittances) without

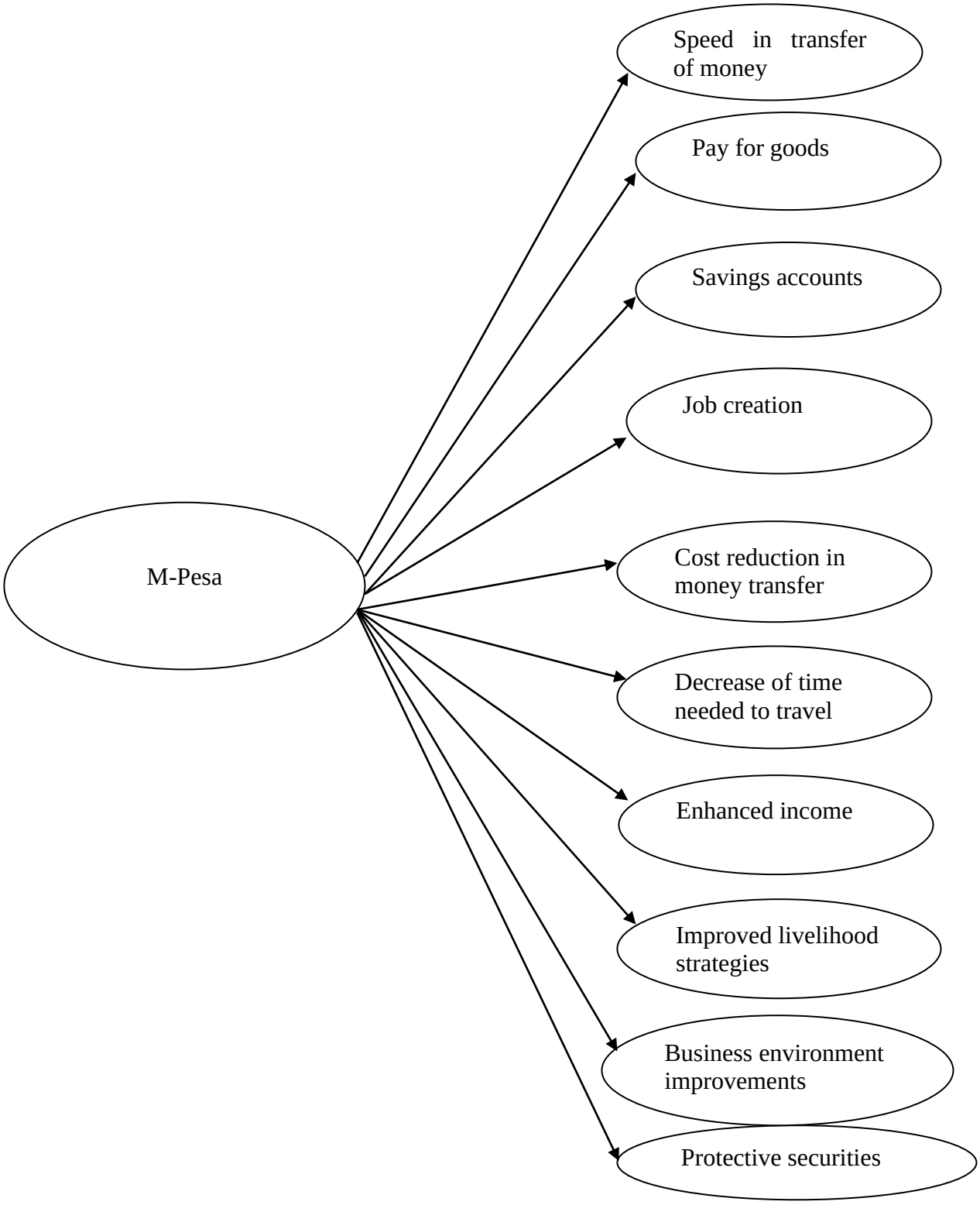
compromising other expenditures in areas like education and food. By contrast, non users must reduce non medical spending to accommodate the illness shock. However, their studies could not suggest measures to improve the situation of poor people when using M-Pesa.

2.5 Conceptual Framework

The conceptual framework is purporting to explain the impact of mobile phone banking system, M-Pesa to the reduction of income poverty in the lives of individuals in Tanzania and is based on The Piggy Bank Theory. The proposed premise of this study is that mobile phone banking performs balance checks, account transactions, payments, credit applications and other banking transactions through a mobile device that necessitates the user to transact money to other people. Under this conceptual framework M-Pesa is the dependent variable and the independent variables include: speed in transfer of money, pay for goods, savings accounts, job creation, cost reduction in money transfer, decrease of time needed to travel, enhanced income, improved livelihood strategies, business environment improvements and protective securities that may facilitate the reduction of the income poverty of the poor individuals in Tanzania.

Figure 2.1: Conceptual Framework

Dependent Variable **Independent Variables**



Source: Adopted and modified from Ivatury and Mas (2008)

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology and procedures used to explore the impact of mobile phone banking for the reduction of income poverty in Kinondoni district. It covers the research design, area of the study, target population, sampling procedures and sample size, data collection methods, reliability and validity of data, data analysis procedures and ethical considerations.

3.1 Research design

A case study research design was used in this investigation because of time and cost considerations. This involves collecting empirical data, generally from only one or a small number of cases. It usually provides rich details about those cases of a predominantly qualitative nature (Bryman, 2004). The research design was allocated with exploratory (going into the roots of the problem and coming out with relevant answers) and inductive (exploring issues from small cases to large cases) approaches to seek for new insights by asking questions and assessing the phenomena in a new light.

3.2 Area of the study

The study was conducted at Kimara, Magomeni and Tandale wards of Kinondoni Municipality. The reason was that, despite all the attention M-Pesa has received, there is little or few financial surveys available or conducted before and after the launch of M-Pesa in the areas in spite of the potential of mobile phone banking in extending the provision of financial services to unbanked people particularly the poor and low income households, something that this study needed to explore for the betterment of those with low incomes. Yet, although the municipality represents the

majority of M-Pesa users in Tanzania, the selected wards have most of the people earning low incomes.

3.3 Target Population

In this study, the study population comprised of M-Pesa agents (155) and Individual M-Pesa users (735) obtained from Vodacom Tanzania Kinondoni municipality survey report of 2013 selected from three wards of Magomeni, Kimara and Tandale.

3.4 Sampling Procedures and Sample Size

3.4.1 Sampling Procedures

The study used two sampling procedures namely; simple random and purposive sampling.

3.4.1.1 Simple random sampling

This method was utilized as each respondent had the same and independent chance of being selected. To obtain respondents simple random sampling procedure was used as follows. A complete list from Vodacom Tanzania Kinondoni municipality survey report of 2013 was obtained. Every M-Pesa agent and user was given a unique number and the lottery technique of simple random sampling was used. Every name as well as its serial number was written on a piece of paper. All the pieces of paper were mixed and the numbers of pieces of paper corresponding to the numbers of predetermined samples were picked randomly. Lastly, the M-Pesa agents and users whose names appeared on the picked pieces of paper were requested to appear for the purpose of answering the questionnaire.

3.4.1.2 Purposive sampling

This method was used as it is a non-random sampling procedure in which personal experience of the respondent regarding M-Pesa usage was considered to be key derived from the position one held or the roles she/he played in relation to a particular activity (Ball, 1981). Thus respondents were selected purposively in order to attain the above objectives. These included; M-Pesa agents and individual users.

3.4.2 Sample Size

A sample size of 99 respondents selected purposively from 3 wards each with 3 M-Pesa agents (i.e. 3*3=9) and 30 Individual M-Pesa users from each of three wards (30*3=90). However, Cooper and Schindler (2008) argued that, for any valid and reliable study to be carried, its sample shouldn't be less than 10% of its population. As it stands, the sample size is 11.1% of the population; hence fulfilling their arguments. Table 3.1 shows the expected sample size.

Table 3.1: Distribution of the expected sample size

S/N	Category	Population	Sample size	Method employed
1	M-Pesa Agents	155	9	Purposive sampling
2	Individual M-Pesa users	735	90	Purposive sampling
	Total	**890**	**99**	

Source: Research data, 2014

3.5 Data collection methods

Primary and secondary data collection methods were used to get information from respondents and other sources.

3.5.1 Primary data collection methods

Primary data collection method was used by the researcher to collect data from the field whereby interviews and questionnaires were employed. As most of interviewees speak Kiswahili as their first language, the researcher conducted interviews in Kiswahili and English languages respectively.

a) Interviews

The interviews (face to face or written) to the M-Pesa agents were employed in order to solicit information regarding the impact of mobile phone banking to the reduction of income poverty of individuals in the selected wards. The interview tool unveiled from these respondents views/opinions regarding the matter (Appendix 1.2). Yin (2003) affirms that the interview tool is very important source of getting information and it is helpful in handling case study related matters as the research design indicates.

b) Questionnaires

Self administered questionnaires were used to obtain information from individuals both M-Pesa agents and users in order to unveil the impact of mobile phone banking to the reduction of income poverty of individuals in the selected wards. These complemented and supplemented information obtained under interview and documentary review (Appendix 1.1). The reason was to obtain consistency of responses to the questions asked in repeated measurements (Carmines and Zeller, 1979).

3.5.2 Secondary data collection methods

The researcher used different documents in order to access accurate and reliable data. Documents comprised of personal profiles, guidelines and directives (on M-Pesa use

and transactions), policies and regulations (regarding M-banking), books and journals (used as literatures).

3.6 Reliability and validity of data

3.6.1 Reliability

A pilot study was carried out to test the questionnaires in the respective study area for their reliability; afterwards corrections were done in order to obtain reliable data for the research. The collected data were verified by experts experienced in research for their reliability. This allowed the researcher to study the properties of measurement scales and the items that made them. Since the reliability of data goes with the accuracy or precision of a measuring instrument, in this research study, reliability was concerned with the questionnaires' consistency of responses to the questions asked in repeated measurements (Maurer, 2004).

3.6.2 Validity

Validity is defined as the instrument's ability to measure exactly the concept it is supposed to measure. In order for the researcher to validate the data and instruments (questionnaires) used in the research, asked the experts to recommend on their representativeness and suitability. Besides, she allowed suggestions to be made to the structure of these questionnaires. These helped her to establish content validity as argued by Bryman (2004).

3.7 Data analysis procedures

The collected data from the field were prepared through coding and editing of the data. This involved checking of data collection forms for omission, legibility and consistency as well as discarding the incomplete responses which had missing data. Thereafter, identified potential errors in data collection were discussed for their implications. This method was used for coding both words and phrases depending on

respondents' responses. This allowed open ended questions to be analyzed systematically while data being entered into a user friendly and retrievable database.

Data collected were analysed both qualitatively and quantitatively. These were summarized, coded and analyzed by Statistical Package for Social Sciences (SPSS). Descriptive statistics was applied whereby frequency distribution and percentages were obtained to describe major variables.

Qualitative data from interviews were analyzed using content analysis focusing on observer's impression. Content analysis involved recording the verbal discussions with respondents which was followed by breaking the recorded information into meaningful small units of information, subjects and tendencies and presented them as text. However, coding which is an interpretive technique that seeks to both organize the data and provides a means to introduce the interpretations of it into certain quantitative methods was employed along with Hermeneutical Analysis which served in interpreting the meaning of the context.

3.8 Ethical considerations

In order to ensure ethical conduct in the study all respondents were informed about the study in order to have willingness to corporate (informed consent was given). The information to be provided by respondents was treated as confidential and for academic purposes only. This enabled respondents to corporate with minimum risk. Other ethical considerations included; briefing the respondents as to the purpose of the research, their relevance in the research process and expectations from them. Again plagiarism, fabrication of data was avoided, privacy was maintained and anonymity of respondents was ensured.

CHAPTER FOUR
PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents and discusses the findings arising from the impact of mobile phone banking to the reduction of income poverty of individuals in Kinondoni district. It is presented and discussed under six parts; the first part focuses on response rate, the second part provides the background characteristics of respondents, the third part determines whether poor peoples' access to mobile phone banking can raise their income; fourth part examines the accessibility of financial services through mobile network called M-Pesa by the poor people; the fifth part analyses the impact of financial services through M-Pesa to low income households; and the sixth part suggests measures to improve the situation of poor people by using M-Pesa.

4.1 Response Rate

Primary data were obtained using structured questionnaires and interviews while secondary data being obtained from published and unpublished reports as highlighted in chapter 3. In this research, 90 questionnaires were administered to respondents and interviews were carried out to 9 M-Pesa agents. The response rate for this study was 100 percent, which was excellent.

4.2 Background Characteristics of Respondents

This section presents the background characteristics of respondents that are grouped into two parts namely; demographic and social economic characteristics. The demographic characteristics include; sex, age, level of education, marital status and number of dependants while social economic characteristics include; occupation/main economic activity and monthly income. However, these

characteristics are very important in this study because they hold as background variables and seem to have some influences regarding mobile phone banking.

4.2.1 Demographic and Social economic Characteristics of Respondents

The demographic and social economic characteristics of respondents dealt with were sex, age, level of education, marital status and number of dependants or family size.

Sex of Respondents

Table 4.1 below provides a summary of respondents by sex.

Table 4.1: Distribution of respondents by Sex

Sex	Frequency	Percentage
Male	60	60.8
Female	39	39.2

Source: Research Findings, 2014

The results in Table 4.1 show that out of 99 respondents, 60.8% were male and 39.2% were female. The results indicate the male dominated in the study while female lagged behind. This calls for women engagement as far as mobile phone banking services provision for their prosperity. However both male and female involvement on the impact of mobile phone banking was important.

Age of Respondents

Table 4.2 below summarizes the distribution of respondents by age group.

Table 4.2: Distribution of respondents by age

Age (in years)	Frequency	Percentage
18-28	12	11.7
29-39	22	21.7
40-50	42	42.5
51 and above	23	24.2

Source: Research findings, 2014

The age distribution of the respondents between 18 and 28 was 11.7%, while that between 29 and 39 was 21.7%. However, those who were between 40 and 50 were 42.5% while those with 51 years and above were 24.2%, as presented in Table 4.2. These results generally suggest that the mobile phone banking service activities motivated more people from 18 to 50 years of age. However, the results show that the involvement of respondents who were 51 years and above was very important 24.2% for the accessibility of services.

Level of Education

Table 4.3 below provides a summary of respondents by level of education.

Table 4.3: Level of Education of Respondents

Level of education	Frequency	Percentage
Primary	24	24.2
Secondary	37	37.5
Higher	38	38.3

Source: Research findings, 2014

The findings in Table 4.3 show that, 24.2% of the respondents had attained primary education, 37.5% secondary education and 38.3% higher education. Education is required in the areas of finance, marketing (particularly distribution) and management for those engaging themselves on mobile phone banking services in order to attain their goals. The ability to deal with people and communicate clearly in written and spoken language was a key factor to the success in business undertakings as customers need to be persuaded when dealing with mobile phone banking services. With education, consumers are already using their mobile phones to access bank accounts (known as mobile banking, or *m-banking*) and to load, transfer, and spend money (mobile payments, or *m-payments*).

Marital Status of Respondents

The table below summarises marital status of respondents

Table 4.4: Distribution of Respondents by Marital Status

Marital status	Frequency	Percentage
Married	39	40.0
Single	19	18.3
Widowed	29	30.0
Divorced	12	11.7

Source: Research findings, 2014

The results from Table 4.4 indicate that 40% of respondents were married; 18.3% single; 30% were widowed and 11.7% were divorced. These findings suggest that those who were married or single could accommodate their business undertakings without failure as they were found to have financial knowledge. However, the involvement of those who were widowed and divorced played an important part while sharing their experience with others on business matters pertaining to mobile phone banking services with regards to business opportunities and threats they encounter.

Number of Dependants

The table below summarises number of dependants

Table 4.5; Distribution of Respondents on Number of Dependants

Number of dependants	Frequency	Percentage
1-3	28	28.3
4-6	59	60.0
7-9	05	05.0
Above 9	07	06.7

Source: Research findings, 2014

The findings in Table 4.5 show that 60% of the respondents had family size or dependants ranging from 4-6 people while 28.3% had 1-3 dependants, 0.5% had 7-9 dependants and 6.7% had above 9 dependants. This observation support dependants the African extended family culture which has some implications on heavy financial

strains and demands arising from material needs for the large family size. However, the number of dependants of respondents helped people to have a network regarding mobile phone banking services.

4.2.1 Social economic Characteristics of Respondents

The social economic characteristics dealt with were occupation and monthly income of the respondents. The examination of occupation of respondents revealed the following as shown in Table 4.6

Occupation of Respondents

The table below summarises occupation of dependants

Table 4.6: Distribution of Respondents by Occupation

Occupation	Frequency	Percentage
Business persons	37	37.5
Worker/officer	34	34.2
Agriculturalists	19	19.2
Business person and agriculturalist	9	09.2

Source: Research findings, 2014

According to the findings in table 4.6; 37.5% of the respondents were business persons, 34.2% were workers/officers who had engaged themselves on mobile phone banking services provisions by using agents (relatives) in order to enhance their income through this business, 19.2% were agriculturalists who also utilised agents (relatives) in order to increase income and 09.2% were practicing both business and agriculture. However, the occupation of respondents was vital regarding mobile phone banking services.

Monthly Income of Respondents

The table below summarises monthly income of dependants

Table 4.7: Distribution of Respondents by Monthly Income

Monthly income	Frequency	Percentage
50,000-500,000	27	27.5
500,001-1,000,000	20	20.0
1,000,001-1,500,000	31	30.8
Above 1,500,000	21	21.7

Source: Research findings, 2014

The findings on table 4.7 show the respondents' earnings per month whereby 27.5% had monthly income between 50,000-500,000 Tanzanian shillings 20% had monthly income between 500,001-1,000,000/=, 30.8% had monthly income between 1,000,001-1,500,000 and those who had monthly income above 1,500,000 constituted 21.7%. This reflects the growing business pertaining to mobile phone banking money transactions in the area which poses a challenge to financial institutions as people could send and receive money via their mobile phones.

4.3 Poor Peoples' Access to Mobile Phone Banking in Raising Income

The first objective of this study was to determine whether poor peoples' access to mobile phone banking raise their income. The researcher distributed the questionnaires and interviewed respondents whereby answers were analysed in terms of agree (strongly agree and agree) and disagree (strongly disagree and disagree) as no certain/not sure answers were provided. The summary of findings are presented in Table 4.8 below.

Table 4.8: Distribution of Respondents on Access to M-Pesa to Poor People

Access to M-Pesa	Percentage %	
	Agree	Disagree
Timely services accessed from M-Pesa enable poor people to exchange commodities among themselves with efficiency	85	15
Pricing of products through M-Pesa enhanced poor people to utilize the services for buying relevant goods	80	20
Through promotions, poor people have been able to win prizes that raised their income	90	10
M-Pesa has facilitated financial activities to poor people that boosted their economic growth	82	18
M-Pesa facility has enabled poor people to send and receive money to relatives in need, something that enhanced economic advancement to them	95	05

Source: Research findings, 2014

The findings in Table 4.8 indicate that the majority of respondents were in agreement with the accessibility of mobile phone banking in raising their incomes while the minority of respondents were in disagreement as indicated above.

Specifically, the findings in Table 4.8 indicate that 80% of respondents reported that the pricing of products through M-Pesa enhanced poor people to utilize the services for buying relevant goods as it is through personalised services offered by M-Pesa that the needs of customers especially the poor have been met; hence raising their incomes. Moreover, 82% of respondents argued that M-Pesa has facilitated financial activities to poor people that boosted their economic growth. This was evident from the fact of having agents at their doors because the poor were traditionally located in the informal sector where they hardly enjoy banking services; hence with M-Pesa, the poor enjoy the same basket of financial services something that raises their income as supported by Mago (2014).

On the other hand, 85% of respondents were of the opinion that the timely services accessed from M-Pesa enabled poor people to exchange commodities among themselves with efficiency as it is useful and easy to use. Likewise, 90% of respondents argued that through promotions, poor people have been able to win

prizes that raised their incomes such as cash provision, agricultural equipment and bonuses that enable them to continue communicating with their relatives as supported by Jonathan and Camilo (2008). However, 95% of respondents reported that M-Pesa facility has enabled poor people to send and receive money to relatives in need while utilizing that money on productive activities, something that enhanced economic advancement to them. This is in conformity with Albanesi (2007), that mobile phone banking has enabled the poor who were excluded from participating in the financial sector as financial institutions compete and end up closing some remote branches due to viability challenges making those areas not accessible for financial institutions.

Generally, the findings imply that poor people or people with low income are willing to adopt mobile phone banking and the reasons are that it is easily accessible, convenient, cheaper, easy to use and secure something that necessitates the raising of their incomes. Moreover, pricing of products through M-Pesa has enhanced poor people to utilize the services for buying relevant goods and that M-Pesa has facilitated financial activities to poor people that have boosted their economic growth as a result of having agents at their doors. On the other hand, timely services accessed from M-Pesa enable poor people to exchange commodities among themselves with efficiency and through promotions, poor people have been able to win prizes that raised their incomes such as cash provision, agricultural equipment and bonuses that enable them to continue communicating with their relatives. However, M-Pesa facility has enabled poor people to send and receive money from relatives while utilizing that money on productive activities; something that enhanced economic advancement to them because the poor are excluded from participating in the financial sector as financial institutions compete and end up closing some remote branches due to viability challenges.

4.4 Accessibility of Financial Services through M-Pesa by Poor People

The second objective of the study was to examine the accessibility of financial services through mobile network called M-Pesa by the poor people. In lieu of this the

researcher circulated the questionnaires and interviewed respondents that enabled the analysis to be done. Table 4.9 provides a summary of the findings.

Table 4.9; Distribution of Respondents on Accessibility of Financial Services through M-Pesa

Accessibility	Percentage %	
	Agree	Disagree
Poor people are able to access financial services through M-Pesa because of its reliability	80	20
Poor people are able to access financial services through M-Pesa because of its coverage	90	10
Poor people are able to access financial services through M-Pesa because it is available for 24 hours	85	15
Poor people are able to access financial services through M-Pesa because of its good service quality	80	20
Poor people are able to access financial services through M-Pesa because of having flexible pricing	88	12

Source: Research findings, 2014

The results in Table 4.9 indicate that the majority of respondents were in agreement that the poor people were able to access financial services through M-Pesa; while the minority of respondents being in disagreement with various reasons as explained above.

Specifically, the results in Table 4.9 indicate that 80% of respondents reported that poor people are able to access financial services through M-Pesa because of its good service quality and reliability as accessibility of M-Pesa has become a vehicle for saving, transferring money from individual to individual with little storage value as supported by Jensen (2007). Likewise, 85% of respondents argued that poor people are able to access financial services through M-Pesa because it is available for 24 hours and yet M-Pesa users have high opportunity costs of holding funds on their phones while agents are able to provide services when needed.

Moreover, 88% of respondents argued that poor people are able to access financial services through M-Pesa because of having flexible pricing that enable poor people to get served in comparable to commercial banks. Furthermore, 90% of respondents reported that poor people are able to access financial services through M-Pesa because of its coverage as the services needed are widely available in terms of availability of agents while M-Pesa has found a niche in the former realm of day to day cash management but not as much in the accumulation of larger sums to poor people as supported by Albanesi (2007).

Generally, the results imply that M-Pesa has removed the barriers of an experience and time consuming visit to the nearby bank as poor people are able to access financial services through M-Pesa because of its good service quality and reliability while becoming a vehicle for saving and transferring money from individual to individual with little storage value. Likewise, poor people are able to access financial services through M-Pesa because it is available for 24 hours and users have high opportunity costs of holding funds on their phones with agents being able to provide services when needed. Moreover, poor people are able to access financial services through M-Pesa because of having flexible pricing that enable poor people to get served in comparable to commercial banks. Furthermore, poor people are able to access financial services through M-Pesa because of its coverage as the services needed are widely available in terms of availability of agents yet; M-Pesa has found a niche in the former realm of day to day cash management but not as much in the accumulation of larger sums to poor people.

4.5 Impact of Financial Services through M-Pesa to Low Income Households

The third objective was to analyse the impact of financial services through M-Pesa to low income households. The researcher after circulating the questionnaires and interviewing respondents came out with the following opinions whereby answers were analysed in terms of agree (strongly agree and agree) and disagree (strongly disagree and disagree) as no certain/not sure answers were provided as given in Table 4.10 below.

Table 4.10; Distribution of Respondents on the Impact of M-Pesa to Low Income Households

Accessibility	Percentage %	
	Agree	Disagree
M-Pesa has replaced formal banking to poor people (e.g. used as a savings account among poor)	87	13
M-Pesa has reduced the cost of transferring money compared to formal banking	80	20
M-Pesa has created jobs from agents' point of view	75	25
M-Pesa has decreased the time needed to travel searching for money in banks	85	15
M-Pesa has enhanced income and improved the business environment to both users and agents	90	10
M-Pesa has improved the ability of household to smooth risks such as cost and time if opted to access services from commercial banks	85	15
M-Pesa has reduced the proportion of poor people saving money in secret places	95	05
M-Pesa has positive impact on transfers, payments, deposits and withdrawals in financial transactions of small business among the poor people	75	25

Source: Research findings, 2014

The results in Table 4.10 indicate that the majority of respondents were in agreement that there was an impact of financial services received through M-Pesa to low income households or poor people; while the minority of respondents were in disagreement with various reasons as explained below.

Specifically, the results in Table 4.10 indicate that 75% of respondents reported that M-Pesa has positive impact on transfers, payments such as LUKU, water bills, school fees etc, deposits and withdrawals in financial transactions of small business among the poor people along with creating jobs from agents' point of view as argued by Mago (2014). Likewise, 80% of respondents argued that M-Pesa has reduced the cost of transferring money compared to formal banking as people have shifted savings from informal tools to M-Pesa due to the perceived security. Moreover, 85%

of respondents reported that M-Pesa has improved the ability of households to avoid risks such as cost and time if opted to access services from commercial banks along with decreasing the time needed to travel searching for money in banks. The cost and time reduction has necessitated the poor to perform additional activities for their income generation.

On the other hand, 87% of respondents argued that M-Pesa has replaced formal banking to poor people thus being used as a savings account among poor. In addition, 90% of respondents reported that M-Pesa has enhanced income and improved the business environment to both users and agents. Furthermore, 95% of respondents argued that M-Pesa has reduced the proportion of poor people saving money in secret places while reducing the price variations in markets compared to other mobile phone financial service providers. This is in conformity with Aker and Mbiti (2010), that M-Pesa has solved critical factors for users including cost and affordability.

Generally, the results imply that M-Pesa has lowered the propensity of people to use informal savings and has positive impact on transfers, payments such as LUKU, water bills, school fees etc, deposits and withdrawals in financial transactions of small business among the poor people along with creating jobs from agents' point of view. Likewise, M-Pesa has reduced the cost of transferring money compared to formal banking as people have shifted savings from informal tools to M-Pesa due to the perceived security. Moreover, M-Pesa has improved the ability of household to avoid risks such as cost and time if opted to access services from commercial banks along with decreasing the time needed to travel searching for money in banks. The cost and time reduction has necessitated the poor to perform additional activities for their income generation. On the other hand, M-Pesa has replaced formal banking to poor people, thus it is being used as a savings account among the poor while enhancing incomes and improving the business environment to both users and agents.

4.6 Measures to Improve the Situation of Poor People when Using M-Pesa

The last objective of the study was to suggest measures to improve the situation of poor people when using M-Pesa. The respondents opinions are summarized in Table 4.11 below.

Table 4.11; Measures to Improve the Situation

Measures	Percentage %	
	Agree	Disagree
Enhancing service quality to users	75	25
Reduction of service charges in terms of tariffs	85	15
Mobilizing more agents to effectively serve the poor in the nearby localities	90	10
Facilitate users on better use of M-Pesa services	80	20
Enhance research and development of M-Pesa products	70	30
Enhance M-Pesa convenience and ease of use to users	87	13

Source: Research findings, 2014

The results in Table 4.11 indicate that the majority of respondents put forward measures that would improve the poor people's situation when using M-Pesa while the minority of respondents being unable as explained above.

Specifically, the results in Table 4.11 indicate that 70% of respondents suggested that to improve M-Pesa services to the poor, the enhancement of research and development of M-Pesa products is vital for the betterment of users. Likewise 75% of respondents suggested that for enhancing service quality to users by improving network coverage in all areas of business as to meet customers' needs. However, 80% of respondents suggested that the service providers need to facilitate users on better use of M-Pesa services. In addition, 85% of respondents argued for reduction of service charges in terms of tariffs to enable users effectively utilize the services.

Moreover, 87% of respondents argued for enhancing M-Pesa convenience and ease of use to users as it was observed that the services do not align with convenience always. Furthermore, 90% of respondents proposed the need to mobilize more agents to effectively serve the poor in the nearby localities. This would enable those unsaved to easily access the service; hence raising income as supported by Vaughn (2007).

Generally, the results in this section imply that, to improve M-Pesa services to the poor, the enhancement of research and development of M-Pesa products is vital for the betterment of users. Likewise, enhancing service quality to users by improving network coverage in all areas of business so as to meet customers' needs was among the proposed measures. However, the providers need to facilitate users on better use of M-Pesa services and reduce service charges in terms of tariffs to enable users effectively utilize the services. Moreover, enhancing M-Pesa convenience and ease of use to users is vital as it was observed that the services do not align with convenience always. Furthermore, the need to mobilize more agents to effectively serve the poor in the nearby localities would enable those un-served to easily access the service; hence raising their incomes.

CHAPTER FIVE
CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter provides the conclusion and recommendations, policy implications and a need for further research. It deals with the conclusion, recommendations, policy implications and areas for further research.

5.1 Conclusion

First, poor people are willing to adopt mobile phone banking and the reasons are that it is easily accessible, convenient, cheaper, easy to use and secure something that necessitates the raising of their incomes. Moreover, pricing of products through M-Pesa has enhanced poor people to utilize the services for buying relevant goods and that M-Pesa has facilitated financial activities to poor people that boosted their economic growth as a result of having agents at their doors. On the other hand, timely services accessed from M-Pesa enable poor people to exchange commodities among themselves with efficiency and through promotions, poor people have been able to win prizes that have raised their incomes such as cash provision, agricultural equipment and bonuses that enable them to continue communicating with their relatives. However, M-Pesa facility has enabled poor people to send and receive money from relatives while utilizing that money on productive activities; something that has enhanced economic advancement to them because the poor are excluded from participating in the financial sector as financial institutions compete and end up closing some remote branches due to viability challenges making those areas un accessible for financial institutions.

Second, M-Pesa has removed the barriers of an experience and time consuming visits to the nearby bank as poor people are able to access financial services through M-Pesa because of its good service quality and reliability while becoming a vehicle for saving and transferring money from individual to individual with little storage value. Moreover, poor people are able to access financial services through M-Pesa because it is available for 24 hours and users have high opportunity costs of holding funds on their phones with agents being able to provide services when needed. Moreover, poor people are able to access financial services through M-Pesa because of having flexible pricing that enable them to get served in comparable to commercial banks. Furthermore, poor people are able to access financial services through M-Pesa because of its coverage as the services needed are widely available in terms of availability of agents yet; M-Pesa has found a niche in the former realm of day to day cash management but not as much in the accumulation of larger sums to poor people.

Third, M-Pesa has lowered the propensity of people to use informal savings and has positive impact on transfers, payments such as LUKU, water bills, school fees etc, deposits and withdrawals in financial transactions of small business among the poor people along with creating jobs from agents' point of view. Likewise, M-Pesa has reduced the cost of transferring money compared to formal banking as poor people have shifted savings from informal tools to M-Pesa due to the perceived security. Moreover, M-Pesa has improved the ability of households to avoid risks such as cost and time if opted to access services from commercial banks along with decreasing the time needed to travel searching for money in banks. The cost and time reductions have enabled the poor to perform additional activities for their income generation. On the other hand, M-Pesa has replaced formal banking to poor people, thus being used as a savings account among the poor while enhancing incomes and improving the business environment to both users and agents. Furthermore, M-Pesa has reduced the proportion of poor people saving money in secret places while reducing the price variations in markets compared to other mobile phone financial service providers.

Fourth, to improve M-Pesa services to the poor, the enhancement of research and development of M-Pesa products is vital for the betterment of users. Likewise,

enhancing service quality to users by improving network coverage in all areas of business in order to meet customers' needs was among the proposed measures. However, the service providers need to facilitate users on better use of M-Pesa services and reduce service charges in terms of tariffs to enable users effectively utilize the services. Moreover, enhancing M-Pesa convenience and ease of use to users is vital as it was observed that the services do not align with convenience always. Furthermore, the need to mobilize more agents to effectively serve the poor in the nearby localities would enable those unserved to easily access the service; hence raising their incomes.

5.3 Recommendations

In light of the above findings, the researcher has proposed the following recommendations;

a) The willingness to adopt M-Pesa service by the poor promises economic growth to both service provider and users. It is recommended that the service providers need to improve their services in order to avoid unnecessary accessibility of services.
b) Poor people become able to access financial services through M-Pesa because of having flexible pricing. It is recommended that mobile network provider should be trusted as trust plays a role in risk mitigation and in enhancing customer loyalty
c) Poor people have been able to shift savings from informal tools to M-Pesa due to perceived security. It is recommended that the avoidance of unnecessary loss of money need to be prevented in order to be trusted and relied upon.
d) Enhancing service quality to users by improving network coverage in all areas of business to meet customers' needs is vital. It is recommended that service quality needs to go hand in hand with convenience of services to users.

5.4 Policy Implications

The researcher suggests that mobile phone banking service providers should minimize M-Pesa tariffs and simplify the mobile banking applications used for transactions to enable users access them fully.

5.5 Areas for Further Research

The study explored the impact of mobile phone banking to the reduction of income poverty in the lives of individuals; it is advised that further studies be done on the following issues;

a) An Assessment of Research and Development carried out by Vodacom and whether it has been able to minimize M-Pesa complaints among users.
b) The Cultural Impacts of Mobile Phone Banking on Poor Users.

REFERENCES

Aghion, P and Howitt, P. (1992). A Model of Growth through Creative Destruction; *Econometrica*, vol. 60, p 45-67.

Aker, Jenny and Mbiti, I. (2010). Mobile Phones and Economic Development in Africa; *Journal of Economic Perspectives*, vol 3, p 90-120.

Albanesi, S. (2007). "Inflation and Inequality", *Journal of Monetary Economics*, 54 (4), pp.1088-1114.

Bångens, L. and Söderberg, B. (2008); *Mobile banking financial services for the unbanked?*

Barnes J. (2007). *Mobile Banking. Concept and Potential*. International Journal of Mobile Communications. 1 (3), 273-288.

Beshouri & Gravrak. (2010). *Mobile Financial Services and their contributions*. Macmillan. USA.

Boyd & Jacob. (2007). *Mobile Financial Services and the under-banked: Opportunities and Challenges for M-Banking and M-Payments*. Chicago IL. The Center for Financial Services Innovations.

Burton, V and Roger, W. (1993). *The Land, the People and the Nation*. Durham, NC. Carolina Academic Press.

Bryman, A. (2004). *Social Research Methods (Second Edition).* Oxford University Press, Oxford.

Carmines, B and Zeller, A. (1979). *Primary and Secondary data collection methods*. Mcmillan. New York.

Cohen, M., Hopkins, D and Lee, J. (2008). *'Financial Education—A bridge between Branchless Banking and Low Income Clients'*. Washington, DC: Microfinance Opportunities.

Colins, D (2005). *Portfolios of the Poor.* Princeton, New Jersey: Princeton University Press.

Cooper, J and Schindler, M. (2008). *Perfect Sample Size in Research*. Macmillan. New Jersey.

Donner & Tellez . (2008). *Mobile Banking and Economic Development. Linking Adoption , Impact and Use.* Asian Journal of Communication 18 (4), 318-332.

Gupta, S. Pattillo, C. A. and Wagh, S. (2009). *Effects of remittances on poverty and financial development in Sub-Saharan Africa*; World Development Report.

Haas, P and Nagarajan, M. (2010). *Outreach of M-PESA System in Kenya*; Emerging Trend.

Heller, P.S. (2009) *Do Demographic Factors Influence Investment in Infrastructure?.* The Johns Hopkins University. USA

International Telecommunication Union (ITU), 2006.

Ivatury, Gautam, P and Pickens, M. (2006). *Mobile Phone Banking and Low Income Customers, Evidence from South Africa*; Consultative Group to Assist the Poor, Washington DC.

Ivatury, G and Mas, I. (2008). *The early experience with branchless banking*. Washington, DC: CGAP.

Jack, W and Suri, T. (2010). *The Risk Sharing Benefits of Mobile Money*. MIT Working paper

Jack, W and Suri, T. (2011). *Mobile Money; The Economics of M-PESA*, NBER Working Paper.

Jonathan, D and Camilo, T. (2008). "Mobile banking and economic development: Linking adoption, impact and use", *Asian Journal of Communication*, 18(4), pp. 318-322.

Kothari, C. R. (2004). Research Methodology; Methods and Techniques. *Now Age International*, New Delhi, India.

Mago, S. (2014). *The Impact of mobile banking on financial inclusion in Zimbabwe. A case for Masvingo Province*. University of Fort Hare.

Mas, I and Morawczynski, O. (2009). *Designing Mobile Transfer Services*; Lessons from M-Pesa, Innovations.

Morawczynski, O. (2009). *Saving through the mobile phone. The case of M-PESA*. Micro Banking Bulletin.

Morawczynski, O and Pickens, M. (2009). *Poor People Using Mobile Financial Services;* Observations on Customer Usage and Impact from M-PESA, CGAP Brief Online.

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.*

Morawczynski, O. and Miscione, G (2008). *'Examining trust in mobile banking transactions: The case of M-PESA in Kenya.'* Social Dimensions of Information and Communication Technology Policy.

Mwangi, S and Njuguna, S. N. (2009). *Expanding the financial services frontier*: Lessons from mobile phone banking in Kenya; Brookings edu.

Njiraini, J and Anyanzwa, J. (2008). *Unmasking the Storm Behind M-Pesa*; East African Standard.

Suhail.S (2007).*Rural Access Options and Challenges for Connectivity and Energy in Tanzania*. Oxford University Press

Tanzania Communication Regulatory Authority Report, 2009.

……, 2011.

Ursula. S. (2010). *Importance of the Role of ICT for Development.* Asian Development Bank. Mandaluyong City

Vodafone (2008); *M-Pesa Mobile Money Transfer; Regulating Transformational Branchless Banking*, Windsor presentation.

Yin, R.K. (2003). Case Study Research: Design and Method: *Applied Social Research Methods*, Vol.5: Sage Publications Ltd.

APPENDICES

Appendix 1.1: Questionnaire for M-Pesa Agents and Users

STATUS (M-Pesa User/Agent)…….

NAME (Optional)……

Dear respondent, below is a set of questions seeking your answers. The questions are for academic purposes only. Thus, your knowledge and experience are highly appreciated to help the researcher meet the required undertaking. Yours; Editha Eliger Nyambo.

PART A. Identification *(Please tick where appropriate)*

1. Sex of the Respondent.

   Male ( ) Female ( )

2. In which Age category do you belong?

   1) 18-28 ( ) 2) 29-39 ( ) 3) 40-50 ( ) 4) 51 and above ( )

3. How many people do you live with –Dependants-?

   1) 1-3 ( ) 2) 4-6 ( ) 3) 7-9 ( ) 4) above 9 ( )

4. What is your highest level of education?

   1) No formal education ( ) 2) Primary education ( )

   3) Secondary education ( ) 4) Higher education ( )

5. Are you a member of any community among these-occupation- (farmers, entrepreneurs, workers)

   1) Yes ( ) 2) No ( )

6. What is your marital status?.

   1) Married ( ) 2) Single ( ) 3) Widowed ( ) 4) Divorced ( )

7. What is your estimated income per month?

1) 50,000/= - 500,000/=( ) 2) 500,001-1,000,000/= ( ) 3) 1,000,001-1,500,000/= ( ) 4) above 1,500,000/= ( )

INSTRUCTION; Put a [tick] or circle to the correct option (s) and fill the blank space as a particular question requires.

PART B: The impact of M-Pesa to household.

1. Do you have a bank account?
    1. Yes
    2. No
2. Which started before the other?
    1. M-Pesa account
    2. Bank Account
3. If you had the bank account before M-Pesa account, do you still operate your bank account?
    1. Yes
    2. No
4. On your opinion, do you think M-Pesa system has replaced formal banking system
    1. Yes
    2. No
5. Please tick the responses that best describes the impact of M-Pesa to the quality your life

		1	2	3	4	5
		Strongly Agree	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
1	Speed in transfer of money					
2						

	Pay for goods					
3	Savings accounts					
4	Job creation					
5	Cost reduction in money transfer					
6	Decrease of time needed to travel					
7	Enhanced income					
8	Improved livelihood strategies					
9	Business environment improvements					
10	Protective securities					
11	Receiving salaries or wages					

6. What are the impacts of M-Pesa to the quality your life other than those mentioned in question five (5) above

……..

……..

……..

……..

……..

PART C: People's access to formal banking and level of income

1. Which accounts are you frequently operating?

1. M-Pesa account
2. Bank Account
3. Both Accounts
4. None

2. Is there any difference in your level of income before and after starting operating your account (s)
    1. Yes
    2. No
3. If your answer in question 2 above is "Yes", what are those income changes? Explain……
……
……
……
……
……
……
…….

PART D: Accessibility of financial services through M-Pesa

1. Are you operating M-Pesa account as a bank account?
    1. Yes
    2. No
2. Please tick the responses that best describes the financial services that you are accessing through M-Pesa

		1	2	3	4	5
		Strongly Agree	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
1	Credit					
2	Insurance					
3	Loans					
4	Securities					

3. Did you have access to those financial services you have selected above in question two (2) before owning M-Pesa account?
    1. Yes
    2. No
4. What are other financial services other than those mentioned in question two (2) above do you access through M-Pesa?
    1. ……..
    2. …….
    3. …….
    4. …….
    5. …….

PART E: Challenges faced by M-Pesa users/Agents

1. Please tick the responses that best describes the challenges you are facing for using M-Pesa

		1	2	3	4	5
		Strongly Agree	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
1	Expenses					
2	Complexities of the technology					
3	Absence of Interest					
4	Lack of awareness					

2. What are challenges you are facing as M-Pesa user or agent other than those that are mentioned in question one (1) above?

    1……
    ……

2……
……

3……
……

4……
……

5……
……

6……
……

7……
……

Thank you for your cooperation.

Appendix 1.2: Interview guide for M-Pesa Agents

i) Does poor people's access to mobile phone banking raise their income?

ii) Are poor people able to access financial services through mobile network called M-Pesa?

iii) What is the impact of financial services accessed through M-Pesa to low income households?

iv) What measures need to be put in order to improve the situation of poor people when using M-Pesa?

Thank you for your cooperation.