

**EFFECTS OF SAFARICOM M-PESA SYSTEM ON EFFICIENCY OF
CUSTOMER BILL PAYMENT IN KISII COUNTY**

BY

NYAKEYO LUCY OKENYURI

**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENT FOR THE AWARD OF DEGREE OF MASTER OF
BUSINESS MANAGEMENT**

**RONGO UNIVERSITY COLLEGE
A CONSTITUENT OF MOI UNIVERSITY**

NOVEMBER 2014

DECLARATION

DECLARATION STUDENT

This thesis is my own original work and has not been submitted or presented by any other student for the award of degree or diploma in any University or College.

Signed.....Date.....
Nyakeyo, Lucy Okenyuri
ADM. NO. MBM/1007/12

DECLARATION BY SUPERVISORS

This Research Project Proposal has been submitted for examination with our approval as the University Supervisors.

Signed.....Date.....
Dr. Richard Nyangosi
Snr. Lecturer, School of Business and Human Resource
Rongo University College

Signed.....Date.....
Dr. David Koskei
Snr. Lecturer, School of Business and Economics
Moi University

DEDICATION

To my children, Nicole, Nikita and Alex who I love very much

ACKNOWLEDGEMENT

I wish to express my gratitude to my supervisors, Dr. Richard Nyangosi and Dr. David Koskei for their guidance while writing this thesis. I too thank the Dean of the school, Dr. Ambrose Kemboi for his invaluable support. Appreciation also goes to my colleagues, friends and all respondents that helped to make this study possible.

ABSTRACT

M-banking, have been available in developing as well as developed countries for several years, but it is not until recently that new modalities of applying M-banking have started to diffuse rapidly to previously unbanked people. The objectives of the study were to determine the effect of M-Pesa bill payment transaction costs, accessibility, security and convenience of the bill payment system on efficiency of Safaricom customers in paying bills. The study covered Safaricom subscribers in Kisii County, Kenya, due to the fact that the county has a high population and adopted a quantitative research design. Data was collected by use of a well structured and pre-tested questionnaire from a sample of 235 respondents. Descriptive statistics were used to analyze the data collected from the field. Multiple Regression Analysis to show the cause effect relationship among variables. This study established that M-pesa bill payment transaction cost has an effect on customer's efficiency in payment of bills, accessibility of payment points was likely to result to an increase in customers' efficiency, while security and convenience of the system has an effect on efficiency of bill payment. The study recommends that transaction costs should regularly be revised with a view to maintaining them at affordable levels so that customers can continue enjoying the M-pesa payment system which is affordable for them, financial incentives be used by the service provider so as to encourage more vendors to provide the service and hence continue making the service accessible to as many customers as is possible. Further, security of the service should be paramount so as to lock out con men that tend to target illiterate and old customers and several service providers should adopt the Mpesa bill payment system so that customers can have the convenience of paying all their bills using this system.

TABLE OF CONTENTS

DECLARATION.....	ii
DECLARATION STUDENT.....	ii
DECLARATION BY SUPERVISORS.....	ii
DEDICATION.....	ii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES.....	x
LIST OF TABLES.....	xi
ABBREVIATIONS AND ACRONYMS.....	xii
DEFINITION OF TERMS.....	xiii
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Overview.....	1
1.2 Background of the Study.....	1
1.3 Statement of the Problem.....	5
1.4 Purpose of the Study.....	5
1.5 Objectives of the Study.....	6
1.6 Research Hypothesis.....	6
1.7 Significance of the Study.....	7
1.8 Scope of the Study.....	7
1.9 Limitations of the Study.....	7
CHAPTER TWO.....	9
LITERATURE REVIEW.....	9
2.1 Introduction.....	9
2.2 Theoretical Literature.....	9
2.2.1. Mobile Banking in Kenya.....	10
2.3 Theoretical Framework.....	12
2.4 Empirical Related Studies.....	14

2.4.1 Effects of M-Pesa Bill Payment.....	14
2.4.2 Transaction Cost and Efficiency in Bill Payment.....	15
2.4.3 Convenience of Service Efficiency in Bill Payment.....	17
2.4.4 Accessibility of Service and Efficiency in Payment of Bills.....	18
2.4.5 Security of Service and Efficiency in Bill Payment.....	24
2.5 Measures of Efficiency.....	30
2.6 Research Gap.....	33
2.7 Conceptual Framework.....	34
CHAPTER THREE.....	36
RESEARCH METHODOLOGY.....	36
3.1 Introduction.....	36
3.2 Research Design.....	36
3.3 Study Area.....	36
3.4 Target Population.....	37
3.5 Sampling and Sampling Procedure.....	37
3.5.1 Sample size.....	38
3.6 Data Sources.....	38
3.7 Data Collection Instruments.....	39
3.8 Validity and Reliability of Instrument.....	39
3.9 Data Analysis Procedures and Presentation.....	40
3.10 Ethical Considerations.....	41
CHAPTER FOUR.....	42
DATA PRESENTATION, ANALYSIS AND DISCUSSION.....	42
4.1 Introduction.....	42
4.2 Data Screening.....	42
4.2.1 Response Rate.....	42
4.2.2 Univariate outliers.....	43
4.2.4 Testing for Normality.....	44
4.2.5 Testing for Linearity.....	45

4.2.6 Testing for Homogeneity of Variances.....	46
4.3 The Demographic Profile of the Respondents.....	47
4.3.1 Gender Distribution of Respondents.....	47
4.3.2. Distribution of Respondents on Basis Educational Level.....	48
4.3.3 Distribution of Respondent’s age.....	49
4.3.4 Respondents Employment Profile.....	50
4.4 Descriptive Statistics of the Study Variables.....	51
4.4.1 Perceived levels of Mpesa Transaction cost among Kisii county Safari com customers.....	52
4.4.2 Perceived levels of Accessibility of M-pesa Paybill platforms.....	53
4.4.3 Perceived Levels of Security of the M-pesa Pay Bill system.....	55
4.4.4 Respondents Perception of convenience accorded by the M-pesa Pay Bill System.....	56
4.4.5 Efficiency of Safaricom customers in Payment of Bills.....	57
4.4.5.1 Bills paid using the Mpesa Pay Bill System.....	58
4.4.5.2 Respondents Perceived Efficiency in Payments of Bills.....	59
4.5 Hypotheses testing.....	60
4.5.1 Testing the effect of Mpesa bill payment transaction cost on efficiency in payment of bills among Safaricom customers in Kisii County.....	60
4.5.2 Testing the effect of Mpesa service accessibility on efficiency in payment of bills among Safaricom customers in Kisii County.....	62
4.5.3 Testing the Effect of Security of Mpesa bill payment system on efficiency of bill payment among Safaricom customers from Kisii County.....	62
4.5.4 Testing the Effect of the convenience of the Mpesa bill payment on efficiency of payment of bills among Safaricom customers from Kisii County.....	63
4.6 Study Model.....	63
4.7 Discussion of the Findings.....	63

4.7.1 M-pesa system transaction cost and customers bill payment efficiency.....	64
4.7.2 Accessibility of the M-pesa system and efficiency in customer bill payment.	65
4.7.3 Security of M-pesa system and efficiency in customer bill payment.....	66
4.7.4 Convenience of M-pesa system and efficiency in customer bill payment.....	67
CHAPTER FIVE.....	69
SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.....	69
5.2 Summary of Findings.....	69
5. 3 Conclusions.....	69
5.4 Recommendations.....	70
5.4.1 Recommendations for theory and practice.....	70
5.4.2 Recommendations for future research.....	70
APPENDICES.....	80
Appendix I: Introduction Letter.....	80
Appendix II: Questionnaire.....	81

LIST OF FIGURES

Figure 2.1 Technology Adoption Model.....13

Figure 2.2 Effects of Bill Payment using M-Pesa on Efficiency among Safaricom Customers.....35

Figure 4.1 Gender Distribution of Respondents.....48

Figure 4.2 Distribution of respondents level of education...../.....49

Figure 4.3 Distribution of respondents age.....50

Figure 4.4 Distribution of Respondents employment status.....51

LIST OF TABLES

Table 2.1 Mobile Subscription	11
Table 2.2 Mobile Subscription per Operator.....	11
Table 4.1 Response Rate to Questionnaires.....	43
Table 4.2 Testing for Normality.....	44
Table 4.3 Testing for Assumption of Normality.....	45
Table 4.4 Testing Assumption of Linearity.....	46
Table 4.5 Test of Homogeneity of Variances.....	46
Table 4.6 Perceived Levels of Mpesa Transaction Cost among Safaricom Customers in Kisii County.....	53
Table 4.7 Perceived Levels of Accessibility of MPesa Bill Payment Services among Safaricom Customers in Kisii County.....	54
Table 4.8 Perceived Levels of Security of MPesa Bill Payment system among Safaricom Customers in Kisii County.....	56
Table 4.9 Perceived Levels of Convenience of the MPesa Bill Payment System among Safaricom Customers in Kisii County.....	57
Table 4.10 Bills Paid Using MPesa Bill Payment Ranked by Order of Preference.....	58
Table 4.11 Safaricom Customers Perceived Levels of Efficiency in Payment of Bills...59	59
Table 4.12 Model Multiple Regression Summary Output.....	60
Table 4.13 Multiple Regression Coefficients.....	61

ABBREVIATIONS AND ACRONYMS

ATM	Automated Teller Machines
BCG	Boston Consulting Group
CBK	Central Bank of Kenya
CCK	Communications Commission of Kenya
CGAP	Consultative Group to assist the poor
CPSS	Consumer Protection Services, Inc.
FRB	Federal Reserve Bank
FSD	Financial Sector Deepening
MNO	Mobile Network Operator
NPS	National Payments Division
PIN	Personal Identification Numbers
POS	Point of Sale
SIM	Subscriber Identification Module
SIM	Subscriber Identity Module
SME	Small and Micro Enterprises
SME's	Small and Medium Enterprises
SMS	Short Message Service
TAM	Technology Adoption Model
TRA	Theory of Reasoned Action
US	United States
USA	United States of America
USAID	United States Aid
WAP	Wireless Application Protocol
WB	World Bank

DEFINITION OF TERMS

The following are definitions of terms as used in this document;

- Banking** refers to the accepting from members of the public of money on deposit repayable on demand or at the expiry of a fixed period or after notice, the accepting from members of the public of money on current account and payment and acceptance of cheque and the employing of money held on deposit or on current account or any part of it by lending, investment or in any other manner for the account and the risk of the person so employing the money
- Bill** Statement of money owed for goods and services
- Efficiency** means to reduce any amount of waste
- Internet Banking** also referred to as E-banking. Refers to an electronic payment system that enables customers of a financial institution to conduct financial transactions on a website operated by the institution
- M-Banking** refers to the execution of financial services using mobile communication techniques together with mobile devices
- Mobile adoption** refers to the use of mobile phone services to perform cash transactions
- Mobile money** refers to the money sent or received through mobile phone
- Mobile Payments** refers to money rendered for a product or service through a portable device such as a cell phone or smartphone
- Mobile subscriber** refers to an individual who is using the services of a particular network provider
- Payment** the action or process of paying someone or something

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter introduces the variables of the study and is presented according to the following distinct sub-topics: Background of the study, statement of the problem, objectives of the study, research hypotheses of the study, and the significance of the study.

1.2 Background of the Study

Banking services using mobile phones have been available in developing as well as developed countries for several years. M-Pesa, M for mobile and *pesa*, a Swahili name for money, is a mobile-phone based money transfer service that was developed by mobile phone operator Vodafone and launched commercially by its Kenyan affiliate Safaricom in March 2007 (Mas and Radcliffe 2010). M-Pesa allows users with a national identity card to transact easily with a mobile device. M-Pesa is a form of M-banking, which implies using mobile phones for banking services and it is not until recently new modalities of applying M-banking have started to diffuse rapidly to previously unbanked people (Bångens and Söderberg, 2008). M-Pesa is a branchless banking service, designed to enable users' complete basic banking transactions without visiting a bank branch. The continuing success of M-Pesa in Kenya has been due to the creation of a highly popular, affordable payment service with only limited involvement of a bank. The service enables its users to deposit and withdraw money, transfer money to other users and non-users, pay bills, purchase airtime and transfer money between the service and, in some markets like Kenya, a bank account. (Suri et al 2010).

M-Pesa has brought about a new mode of settling bills besides the traditional modes of payment such as cash, cheques, standing orders, demand drafts, money orders, banker's cheques, credit and debit cards. M-Pesa pay bill system enables corporate organizations to receive funds from their customers or subscribers pay for goods and services rendered. It targets receiving payments conveniently and in a timely manner from customers. Upon signing up, an organization is issued with a business number to which payments can be made.

Internet banks are different from the non-internet banks as they increase efficiency terms of profitability, cost efficiency, asset quality and other characteristics (Mahotra and Singh, 2006). High level of efficiency is reflected from the cost effectiveness and a wide flow of information at no time and a reasonable cost .The effectiveness and cost control of expanding outreach of banking services has always been challenging for financial institutions (Sohel Ahmed et al., 2011). 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 (Mbiti and Weil, 2011). It has been perceived that the main driver for the rapid development is the new M-banking services that are less expensive and have a geographical footprint defined by the reach of mobile networks in contrast to services offered by traditional retail bank branches, that are out of reach for many people in rural areas from both an economic and geographical perspective (Bångens and Söderberg, 2008).

A study in the United States of America (USA) revealed that whereas online bill pay and debit cards made it easy for bank customers to overdraw on their accounts, mobile banking gives consumers the ability to avoid accidentally doing so (Shevlin et al., (2011) . Ahmed et al., (2011) noted that in Bangladesh where almost 95% of geographical areas is under cellular coverage and having sufficiency in internet infrastructure in remote regions, M-Banking via mobile phones clients can text their loan payment directly to the bank; saving them both travel time and money instead of traveling to the bank to make their loan payment. Pegueros (2012) noted that transactional services of mobile included account transfers, bill pay, person to person payments and remote deposit capture.

Federal Reserve Bank indicated that 15 percent of all mobile phone owners in the USA use mobile payments to make an online bill payment (FRB 2013). Bångens and Söderberg (2008) revealed that in the Philippines, more and more people are using mobile phones to take out and repay loans, pay bills, buy goods, make donations, transfer cash and even purchase fast-food burgers and that approximately 14% of the farmers send money for the purchase of inputs and for paying farm workers.

Transformational M-Banking service users revealed that they typically time their deposits to coincide with bill payments or cash withdrawals (Njenga, 2009). Mbiti and Weil (2011) showed in their report that almost 4 percent used an Automated Teller Machine (ATM) to withdraw cash from their M-Pesa account and 3 percent used M-pesa to buy goods or pay bills. United States Aid realized that the ability to pay bills using a mobile money account has proven very popular with both users and businesses, with over 700 organizations signing up to allow their bills to be paid via M-Pesa alone (USAID,2011). Many of these organizations are also offering the bill Pay option via the other Mobile Network Operator (MNO) mobile money services, to ensure non- Safaricom customers can use the service as well.

Although several mobile payment companies have tried mobile banking, some have registered success while others have ended up failing (Goyal et al., 2012). In Europe and North America with few exceptions such as Austria, Spain and Scandinavian countries the development of mobile payments has not been successful. However, mobile payment services in Asia have been fairly successful especially in South Korea, Japan and other Asian countries. M-Pesa, an agent-assisted, mobile phone-based, person-to-person payment and money transfer system, was launched in Kenya on March 6, 2007. It allows

users to store money on their mobile phones in an e-account and deposit or withdraw money in the form of hard currency at one of M-Pesa's numerous agent locations (Haas et al., 2010). As of January 2010, over 9 million people were subscribed to M-Pesa with almost 17,000 agents located throughout urban and medium-to-large market centers in the country as at January 2010 (Haas et al., 2010). M-Pesa improves individual outcomes by promoting banking and increasing transfers (Mbiti and Weil, 2011). This claim is strongly supported by Morawczynski and Pickens (2009) who found out 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. Besides, M-Pesa also allows customers to borrow money, check accounts and transfer money using their mobile phone (Munyange, 2012).

In Kenya, the use of mobile payment benefits users in the form of cost savings, efficiency, fraud and error reduction, client security and convenience (USAID ,2011). Porteous (2006) further indicated that mobile banking offers the prospect of increasing efficiency of the payments system; and potentially, expanding access to financial services. However, the study warned that these objectives may be in tension with existing approaches which target other objectives, such as financial integrity or consumer protection.

1.3 Statement of the Problem

Several mobile payment trend studies (Ivatury, 2006; Bångens and Söderberg, 2008; Pegueros, 2012) have revealed the potential of mobile network technologies for payment purposes. The M-Pesa service enables subscribers to use their mobile phones to carry out transactions such as pay bills, pay for goods and services. The bill payment through M-

Pesa was designed to enable users to offset their bills conveniently, fast and effectively at a cheaper transaction cost compared with the other modes of bills payment. Despite these benefits, it has been noted that there is still a big population who are registered with M-Pesa, but are not using M-Pesa to make their bill payments and that despite all the attention M-Pesa has received, there is little quantitative evidence on its economic and social impacts (Mbiti and Weil, 2011). There is little research that has been done since its inception to determine its impact not only to the customers but also to the business owners in settling payments. Therefore it is in view of this that the study sought to establish effects of bill payment using M-Pesa on Safaricom customers.

1.4 Purpose of the Study

The purpose of the study was to establish the effects of Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County.

1.5 Objectives of the Study

The main objective of the study was to establish the effects of Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County. The specific objectives of the study were to;

- i. Determine the effect of transaction costs of Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County
- ii. Establish the effect of accessibility of Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County
- iii. Examine the effect of security of the Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County

- iv. Evaluate the effect of convenience of the Safaricom M-Pesa system on efficiency of customer bill payment in Kisii County

1.6 Research Hypothesis

To address the following objectives, the study aimed to test the following hypotheses:

H₀₁: There is no significant effect of Safaricom M-Pesa transaction costs on efficiency of customer bill payment in Kisii County

H₀₂: Accessibility of the Safaricom M-Pesa system has no significant effect on efficiency of customer bill payment in Kisii County

H₀₃: Security of the Safaricom M-Pesa system has no significant effect on efficiency of customer bill payment in Kisii County

H₀₄: Convenience of the M-Pesa system has no significant effect on efficiency of customer bill payment in Kisii County

1.7 Significance of the Study

The study expected to give an insight on the state of the Safaricom M-Pesa system and efficiency of bill payment efficiency bill payment. It would establish whether paying bills using M-Pesa has in any way enhanced bill payment efficiency among Safaricom M-Pesa customers. This would provide valuable information to other Safaricom customers who may not have adopted the M-Pesa bill payment system and encourage them to adopt it in settling bills, if it's found that there are benefits from the system of settling bills. This study would also add to the existing literature, and be a valuable tool for students, academicians, institutions and individuals who will want to learn more about mobile money banking and in particular M-Pesa bill payment system.

1.8 Scope of the Study

The study covered Safaricom subscribers in Kisii County, Kenya. Kisii County is found in the Western part of Kenya and it is bordered by Nyamira County, Narok County, Homabay County and Migori County. Specifically, the study was interested in mobile phone subscribers who were registered by Safaricom as their mobile network provider, are M-Pesa registered users and use M-Pesa to pay their bills. Kisii County deemed appropriate because of the varied economic business activities that are undertaken in the County. The study was undertaken for a period of 16 weeks from June to September 2014.

1.9 Limitations of the Study

Although the data collected assessed how M-Pesa bill payment has led to efficiency of bill payment amongst M-Pesa users, only a handful of participants were selected. Also, some respondents did not pay much attention to the questionnaires that were being distributed for the study. To counter this, the researcher ensured that an appropriate sample was selected and research assistants were used to follow up and ensure that issued questionnaires were filled and returned. Another limitation was that despite the study conceptualizing that customer attitude, affordability of handsets, and customer demographics could have confounding effects on Mpesa bill payment systems influence on bill payment efficiency, this interaction was not tested for. This possibly limited generalizability of the findings.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter highlights the theoretical literature, the Technology Adoption Model (TAM), bill pay service and the conceptual framework of the study.

2.2 Theoretical Literature

Mobile payments (M-payments) are financial transactions undertaken using mobile device such as a mobile phone (Porteous, 2006). The initial functions of mobile handsets were to make or receive phone calls and sending or receiving short messages. However, the mobile handset has also been identified as a vehicle for delivering contact-less payments (Persson and Insight, 2008). The Federal Reserve survey defined mobile payments as “purchases, bill payments, charitable donations, payments to another person, or any other payments made using a mobile phone (FRB, 2013) while Persson and Insight (2008) define it as the utilization of mobile handsets for making Purchases. There is a wide range of players of every size in the mobile banking and payments industry. From this definition, it can be noted that mobile payment involves sending of money from one party to another in an effort to offset a bill or make payment. Traditionally mobile payments have focused on purchasing mobile content, but over time the application area has diversified to include goods and services (Persson and Insight, 2008). Mobile banking has enabled millions of banked and unbanked people to deposit, withdraw and transfer money through mobile phones (Inam and Islam, 2012). Initially, there were limited use of mobile payments in Europe and the United States, despite

earlier expectations to the contrary (Porteous, 2006). The report further singles out Western Europe, where there have been a number of attempts to create M-payment platforms and products but with little success. However, today there are a number of international mobile remittance services available in the United States (US), Europe and the Gulf states (Persson and Insight, 2008). Japan and Korea have embraced the technology and currently it is widely used within these two countries. Mobile banking allows customers to connect to your financial institution at any time with the Mobile Web redirect (Porteous, 2006).

Through premium short message service (SMS), the mobile is now established as a means for payments in certain niches such as digital services and ticketing (Persson and Insight, 2008). Bill pay service offers a mobile user a number of services. First, it allows a user to pay a company using their mobile money account. Secondly, it can be used to buy goods from either online or physical merchants as needed, allowing individual (versus recurring) purchase payments, as opposed to signing up for individual accounts and paying off on those specific accounts. Thirdly, it allows insurance clients to make their monthly payment on premium by sending directly to the company without necessarily having to go to the insurance company to make the payment. Fourthly, it allows organizations to use the service to pay salaries and expenses for remote and seasonal workers, without the need to deliver cash and incur all the risks that entails (World Bank, 2011).

2.2.1. Mobile Banking in Kenya

Mobile phone money transfer service usage has continued to increase among the Kenyan public as indicated by the growth in the number of transactions which increased by 44.90

percent from 251.25 million transactions in the year to June 30, 2010 to 364.06 million transactions in the year to June 30, 2011 (Central Bank of Kenya, 2010-2011). By 2014, the number of mobile subscriptions rose to reach 31.8 million up from 31.3 million in 2013 (CCK, 2014). This growth is as shown below;

Table 1.1 Mobile Subscription Statistics in Kenya

Subscription Type	Dec - 12	Mar -12	Dec -13	Mar- 14
Prepaid Subscriptions	30,429,351	29,459,207	30,748,514	31,222,434
Postpaid Subscriptions	302,403	390,129	560,503	607,569
Total Mobile Subscriptions	30,731,754	29,849,336	31,309,017	31,830,003

Source: (CCK, 2013-2014 Annual Report)

The growth in further subscriptions for each of the mobile operators is further as shown;

Table 1.2 Mobile Subscription per Operator in Kenya

Name of Operator	Dec 2013	Mar 2014
Safaricom Limited	21,248,287	21,567,388
Airtel Limited	5,156,269	5,251,087
Essar Telecom Limited	2,649,362	2,557,630
Telkom Kenya (Orange)	2,255,099	2,453,898

Source: (CCK, 2013-2014 Annual Report)

M-Pesa is a fast, safe, and affordable way to send and receive money (Safaricom Report, 2012). It has provided financial inclusion to many Kenyans without access to banking services. It offers money transfer services to individuals and businesses, pay bill services, bulk payments, dividend payments and international money transfers. M-Pesa has 14.9 million customers, 39,400 agent outlets, 900 pay bill partners and 300 bulk payment partners (Safaricom, 2012). Over 25 banks have partnered with M-Pesa to allow their customers transfer money between their bank account and their M-Pesa account. With

this service customers are able to move money from their bank account into their M-Pesa account and vice versa. Once money is moved into M-Pesa, customers can directly pay bills or buy goods.

2.3 Theoretical Framework

This study is based on the Technology Adoption Model (TAM). Developers and software industries are beginning to realize that lack of user acceptance of technology can lead to loss of money and resources (Mazhar, 2006). Although many models have been proposed to explain and predict the use of a system, the Technology Acceptance (TAM) Model has been the only one which has captured the most attention of the Information Systems community (Chuttur, 2009). TAM was developed in 1985 by Fred Davis by improving the already existing Theory of Reasoned Action (TRA) by Fishbein and Ajzen. The Technology Acceptance Model (TAM) is an information systems (System consisting of the network of all communication channels used within an organization) theory that models how users come to accept and use a technology, The model suggests that when users are presented with a new software package, a number of factors influence their decision about how and when they will use it, notably (Mazhar, 2006). From the model, when someone forms an intention to act, that they will be free to act without limitation. In practice constraints such as limited ability, time, environmental or organisational limits, and unconscious habits will limit the freedom to act (Wixom and Todd, 2005). TAM model argues that users' motivation can be explained by three factors, namely, perceived ease of use, perceived usefulness, and attitude towards using the system. Further, the attitude of a user towards a system was a major determinant of whether the user will actually use or reject the system.

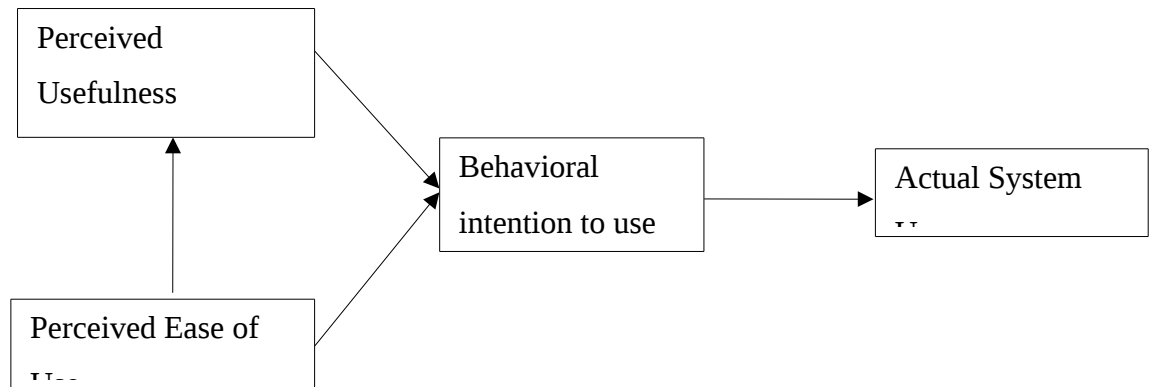


Figure 2.1: Technology Acceptance Model
Source: Venkatesh et al., (2003)

Davis defined Perceived usefulness (PU) as "the degree to which a person believes that using a particular system would enhance his or her job performance". He also defined Perceived ease-of-use (PEOU) as "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989) as cited in Mazhar (2006). User acceptance is defined as "the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support" (Mazhar, 2006). He further states that According to the TAM, if a user perceives a specific technology as useful, she/he will believe in a positive use-performance relationship. Since effort is a finite resource, a user is likely to accept an application when she/he perceives it as easier to use than another.

Luarn and Lin (2003) conducted a survey in Taiwan using the traditional Technology Acceptance Model (TAM) framework which was extended by adding one trust-based construct (perceived credibility) and two resource-based constructs (perceived self-efficacy and perceived financial cost) in m-banking context. The results indicated that all

factors have a significant effect on behavioral intention, and the perceived credibility is the most contributing factor to intention (Jeong and Yoon, 2013).

2.4 Empirical Related Studies

2.4.1 Effects of M-Pesa Bill Payment

For low value and remote transactions, where the cost of bank transfers can be prohibitive and branches are some distance away, the service of choice in Kenya is mobile money (USAID, 2011). M-Pesa has demonstrated the importance of building a low-cost transactional platform which enables customers to meet a broad range of their payment needs. This is consistent with studies which indicate that electronic payment channels in general offer relative advantages in terms of accessibility, convenience, speed, privacy and control for conducting financial transactions (Birch & Young, 1997; Daniel, 1999; Ramsay & Smith, 1999). Mpesa system as is characteristic of electronic payment channels is self service oriented and therefore preferred in simple routine service transactions, whereas complex payment and other services are mostly conducted in banks' branch offices (Mallat et al., 2001). Once a customer is connected to an e-payment system, he/she can use this capability to store money in a savings account, send and receive money from friends and family, pay bills and monthly insurance premiums, receive pension or social welfare payments, or receive loan disbursements and repay them electronically. In short, when a customer is connected to an e-payment system, her range of financial possibilities expands dramatically. (Mas and Radcliffe 2010)

2.4.2 Transaction Cost and Efficiency in Bill Payment

Transaction cost is a key indicator in decisions to adopt new technology. Studies suggest that the cost of a payment transaction has a direct effect on consumer adoption if the cost is passed on to customers. Fenech (2002) in a study on consumer intention to wireless application protocol (WAP) shopping found out that the strongest characteristic differentiating the high and low intention groups was price consciousness. As shoppers in electronic channels are attentive to price the transaction costs of mobile payments should be low enough to make the total cost of the purchase competitive with physical world prices. Mallat (2006) established that some interviewees had refrained from using mobile payments because of premium pricing. If there is a cash payment alternative for mobile payments in vending machines, for example, the item paid for with a mobile phone costs commonly more than the same item paid for with cash. Interviewees were very critical towards the premium pricing and it clearly discouraged them from using mobile payments. A positive aspect of mobile phones is that mobile networks are available in remote areas at a low cost.

With the emerging wave of information driven economy, the banking industry in Kenya has inevitably found itself unable to resist technological indulgence (Okiro and Ndungu, 2013). This has led to a boom in development of mobile banking laying down a strong base for low cost banking, and growth of mobile phone use in rural Kenya. The primary function of M-Pesa, at least as it was conceived, is to reduce the costs of making remittances from one individual to another, especially across large distances (Jack and Suri, 2010). There is no charge for depositing funds therefore implying that a customer intending to pay any bill will not incur any cost for crediting money to a mobile

phone account. Besides for the recipients of such money who have pay bill numbers, the customer is not charged an extra coin for paying that bill via the mobile phone. Jack and Suri (2010) investigated the Economics of M-Pesa and found out that the low cost, and the widespread unmet demand for financial services, as captured by low rates of bank access, means that mobile banking has the potential to reach remote corners of the socio-economic, as well as geographic, spectrum. It was realized that that M-Pesa has reached nearly 40 percent of the adult population after a little more than 2 years of operation and that customers perceived it as being faster, cheaper, more reliable, and safer, and further warned that they would suffer negative consequences if the M-Pesa service was to be shut down.

Omwansa(2009), investigated the progress and prospects of M-Pesa and concluded that M-transactions have succeeded in Kenya due to the impressive adoption of mobile phones, the need to access financial services, and the low cost of M-transfers.M-Pesa offers a very competitive service with a very attractive transaction cost. Using M-Pesa to send money is much cheaper than using other modes of payment, including a bank account. Given their setup and operational costs, banks and money transfer companies cannot offer such low rates. Mallat (2006) supports this and adds that the cost of transaction has a direct influence to the consumer if it is passed to them. Transaction costs should be low if the transactions are to remain competitive.

For bulk payments, organizations have to hire an armored vehicle and security staff to transport the cash to its intended location and have additional staff on hand at the other end to supervise its distribution to recipients. In such scenarios, the organization incurs a number of costs and security challenges, including vehicle hire, high fuel costs, the cost

of sending staff members out (including opportunity costs of having them away from the office), and the cost of extra staffing where needed (USAID, 2011). Therefore, M-pesa bill payment is a cheaper alternative to other modes of payment like standing orders that charge a fee or commission for paying one's bill. Besides, there is little or no cost incurred as a person does not have to travel physically to a company or business office to pay a bill.

2.4.3 Convenience of Service Efficiency in Bill Payment

The most important factor that attracts business customers to use mobile payment is its convenience (Al-Adwan et al., 2013). When referring to the convenience of payment methods, consumers may have different aspects of the attribute in mind. These aspects include portability, flexibility, speed, ease of use, and ease of setting up and learning to use each payment method. Mobile payments will likely be more convenient than traditional payment methods in terms of portability. A mobile device will eliminate the inconvenience of carrying multiple plastic cards in a physical wallet by enabling consumers to link mobile payments to those card accounts and they eliminate the inconvenience to consumers of carrying coins and currency (Hayashi Fumiko, 2012).

Another convenience advantage of mobile payment methods over traditional payment methods is flexibility. Greater convenience for beneficiaries, who can send their cash, seven days a week. Beneficiaries also do not need to have a bank account to get paid. Mbogo (2010) investigated the success factors attributable to the use of mobile payments by micro-business operators. The study was based on a survey conducted through administration of questionnaires. From the study, it was found that convenience of the money transfer technology plus its accessibility, cost, support and security factors are

related to behavioral intention to use and actual usage of the mobile payment services by the micro businesses to enhance their success and growth.

Thus, because the service can be used over a vast geographical area as long as it's covered with a mobile network, it saves the customer from having to travel long distances to pay a bill. This means that one does not have to worry about the termination of a service due to the inability to travel to the company office to pay a bill. A customer can pay a bill while working in the office, from the comfort of his home and even at odd hours when offices are closed. This enhances one's efficiency as bills are paid in time and overrides the demerits of using cash for making payments at brick and mortar stores, with the inconvenience of carrying, exchanging, sorting, and storage.

2.4.4 Accessibility of Service and Efficiency in Payment of Bills

Integrating with mobile money increases the density of access points and the reach of access points in new areas, transforming the geographical distribution of delivery channels. Many financial service providers cite the lower cost in time and money for clients who want to make payments and deposits or receive insurance payments, withdrawals, or loan disbursements. Kendall et al (2011). Ng'ang'a and Mwachofi (2013) studied on Technology Adoption and the Banking Agency in Rural Kenya, with the aim of approaching the promotion of Mobile and Agency Banking technology adoption and its diffusion in Kenya. Using a comparative survey data obtained from SMEs and Bank Agents in Karatina and Likuyani, both districts in rural set ups in Kenya, the study established that though a variety of mobile and agency banking services are on offer, it's only a very small proportion of customers who access it, actually use it.

M-pesa platform has lately been incorporated in banks automated teller machines (ATM) services. This in recognition that ATM banking is one of the earliest and widely adopted retail e-banking services in Kenya (Nyangosi et al. 2009). However according to an annual report by Central Bank of Kenya (CBK), its adoption and usage has been surpassed by mobile banking in the last few years (CBK 2008). The suggested reason for this is that many low income earners now have access to mobile phones. The poor often have greater familiarity and trust in mobile phone companies than with normal financial institutions. Freedman (2000) suggests that internet banking and internet money consists of three devices; access devices, stored value cards, and network money. Internet banking is simply the access to new devices and is therefore ignored. Internet money is the sum of stored value (smart cards) and network money (value stored on computer hard drives).

Previous studies suggest that mobile banking offers customers additional value in terms of location-free access (Laukkanen & Lauronen, 2005). Similarly, mobile payments provide consumers with ubiquitous purchase possibilities, timely access to financial assets and an alternative to cash payments. The users can, for example, pay for transportation tickets or car parking remotely without the need to visit an ATM, a ticketing machine or a parking meter (Begonha et al., 2002; May, 2001). Advantages of mobile payments compared with traditional payment instruments are thus likely to pertain to time and location independent purchase possibilities. On an average, Indian households across 10 cities in India pay almost 50 bills in a year. Enabling bill payment anytime, anywhere with features like reminders ‘pay- by –texting’ and aggregated payments could provide high convenience to the bill payers (Deloitte, 2013)

With the help of the Internet, banking is no longer bound to time or geography. Consumers all over the world have relatively easy access to their accounts twenty four hours per day, seven days a week. It makes available to customers a full range of services including some services not offered at branches. Internet banking has the advantage that the customer avoids traveling to and from a bank branch. In this way, Internet banking saves time and money provides convenience and accessibility (Karjauloto et al, 2003). Customers can manage their banking affairs when they want, and they can enjoy more privacy while interacting with their bank. It has been claimed that Internet banking offers the customer more benefits at lower costs (Mols, 1998). Turban et al. (2000) indicated that Internet banking is extremely beneficial to customers because of the savings in costs, time and space it offers, its quick response to complaints, and its delivery of improved services, all of which benefits make for easier banking.

With over 250 billion pay bill transactions, and less than 1% of these through electronic means, there is a large potential for mobile based bill payments, especially for the under banked who do not have access to banking or other bill pay vendor's services (Deloitte, 2013). Mallat (2006), explores consumer adoption of mobile payments and the findings suggest that the relative advantages of mobile payments are related to the specific benefits provided by the new mobile technology, and the possibility to avoid queuing and complement cash payments. Furthermore, the findings indicate that the advantages become more important in certain use situations including presence of queues, unexpected need for a payment, time pressure, and lack of cash or loose change.

Mobile payments are appealing to the unbanked and under banked, since bank accounts and credit cards are not always prerequisites for mobile payments. The mobile phone

could potentially serve as a channel for financial inclusion to the unbanked and underbanked consumer segments. An estimated 7.7 percent of U.S. households, approximately 9 million, are unbanked, and an estimated 17.9 percent of U.S. households, roughly 21 million, are underbanked. While the unbanked do not have bank accounts, many do have access to mobile phones. Among individuals who are unbanked, 64 percent have access to a mobile phone and 18 percent have access to a smartphone. More remarkably, 91 percent of the underbanked have a mobile phone and 57 percent have a smartphone—rates far above those for the overall population. By originating payments through their mobile phones and accessing prepaid accounts or other alternative payment methods, under banked consumers can pay bills in a timely, less costly, more efficient, and potentially safer manner than with traditional options currently offered to them.

Statistics from the Communications Commission of Kenya indicate that there are an estimated 29.7 million mobile phone subscribers in Kenya (CCK, 2012). This means that most people - whether they are consumers, employees, business partners or retail staff - are connected to a real-time electronic payment network. Industry studies agree that awareness of mobile payments is greater among higher-income consumers and current mobile banking and mobile bill pay users. According to Synergistics (2011), the interest level in using mobile phones for contactless payments tends to decrease with age, but increases with household income. To attract the underserved, who may be younger, but more often lower-income consumers, a different approach is needed. For example, using alternative payment methods through mobile phones can help reduce the friction of cash transactions and enable the underserved to better track and manage their spending, pay

bills, and transfer money more safely and efficiently. For older consumers, who are often more risk-averse and concerned with mobile technology security than their younger peers, better information about how to mitigate risks and realize the benefits of using a mobile phone for payments might be more useful. Mobile payment providers' understanding of user demographics and that there is no —one-size-fits-all mobile consumer will ensure broader accessibility and inclusivity (Tavilla, 2012)

Consumers shopping at participating merchants pay at existing point of sale (POS) terminals integrated with PayPal software, either by swiping a PayPal issued card to access their online PayPal account, or via —Empty Hands—entering their phone number and personal identification number (PIN) into the terminal's key pad to connect to their online PayPal account. Different from traditional credit and debit cards, PayPal does not include user identification on its card, such as name and card number. Instead, it relies on PIN entry to complete transactions. Some consumers view mobile payments as time-saving and convenient while providing them with increased access to, and control of, their finances. (Federal Reserve Survey, 2011)

The influence of service convenience cannot be understated. Several studies point to existing relationship between convenience and consumer adoption of products and services. Ease of use and convenience has been found to affect consumer adoption of Internet payments (Shon & Swatman, 1998) and WAP financial services (Kleijnen et al., 2004). Mobile payments are commonly expected to increase consumer convenience by reducing the need for coins and cash in small transactions and increasing the availability of purchase possibilities (Coursaris & Hassanein, 2002). Limitations in mobile device features, however, diminish the usability and user-friendliness of mobile technologies

(Siau et al., 2004). Typical limitations include small displays and keypads, limited transmission speed and memory, and short battery life.

Convenience is still the most important factor for the majority of users.(FSD Kenya 2009). Self-service distribution channels have higher usage rates among customers who have favorable attitudes towards convenience, change, computers, technology, and who feel more confident using electronic banking and who are knowledgeable about the methods of accessing their money (Thornton & White, 2001). Black et al. (2002), Gerrard and Cunningham, (2003) and Liao and Cheung, (2002) argue that convenience affects the utilization of internet banking. In his study Eastin (2002) found that perceived convenience was the strongest predictor of online banking usage. This study reveals that perceived security is an important factor influencing customers' adoption of Internet banking. Consumers have identified convenience and efficiency as two of the most attractive benefits of mobile payments. Some consumers view mobile payments as time-saving and convenient while providing them with increased access to, and control of, their finances. The Federal Reserve survey (2011) Consumers find the mobile wallet concept compelling due to its convenience. benefits in a consumer mobile payments from the survey conducted were: —saves time, can be done anytime, don't have to carry cash, and can be done almost anywhere.The perceived safety of M-Pesa and its convenience are major reasons that early adopters of the technology chose to use it (Jack and Suri, 2010).

M-Pesa's liquidity system is not without its challenges. Due to cash float constraints, M-Pesa retail outlets cannot always meet requests for withdrawals, especially large withdrawals. Furthermore, the agent commission structure discourages outlets from

handling large transactions. As a result, customers are sometimes forced to split their transactions over a few days, taking money out in bits rather than withdrawing a lump sum, adding both cost and inconvenience. It also undermines customer trust in M-Pesa as a mechanism for high-balance, long-term saving. (Mas & Radcliffe, 2010). This too applies where a customer requires crediting his/her mobile account to be able to offset various bills.

The experience of M-Pesa demonstrates how powerful a payment network that offers convenience at an affordable cost can be once a critical mass of customers is reached. It also shows that achieving critical mass requires both a service design that removes as many adoption barriers as possible and significant investment in marketing, branding, and agent network management.

2.4.5 Security of Service and Efficiency in Bill Payment

Security is one of the very important factors in determining the decision of consumers to use Internet banking. The Walls report (1997) showed that unless security is improved, more households would be willing to conduct their transactions over the Internet.

Several researchers indicate that perceived security plays an important role when bank customers decide to adopt Internet banking services (Kaynak and Harcar, 2005; Liao and Wong, 2007; Altintas and Gürsakal, 2007; and Laforet and Li, 2005). Liao and Cheung (2002) and Sathye (1999) show that the more secure the customer perceive Internet banking to be, the more likely it is that customer will use Internet banking. Liu and Arnett (2000) say that the need for secure transactions are critical to the success of not only Internet banking but that of any e-commerce related website. According to Polatoglu and Ekin, (2001), security comprises of three dimensions: reliability, safety, and privacy.

Consumers' concerns about security, which arise from the use of an open public network, have been emphasized as being the most important factor inhibiting the adoption and use of internet banking (Sathye, 1999; Daniel, 1999; Hamlet and Strube, 2000; Tan and Teo, 2000; Cox and Dale, 2001, Polatoglu and Ekin, 2001, Black et al., 2002, Giglio, 2002; Howcroft et al., 2002).

In USA, Thorton Consulting (1996) which conducted a survey focusing on banks concluded that 67 percent of US banks feel that "security concerns" is the major barriers for Internet banking. The same results obtained from the study by Booz et al. (1997), reveals that security concern among customers was the top-ranking obstacle for non-adoption of Internet banking in Latin America. This involves a secure storage and processing of payment credentials and transaction data, and ability to suspend payment apps in case of fraud or customer request (Smart Card Alliance, 2011). In a mobile environment, lack of consumer perceived security and trust in vendors and payment systems is one of the main barriers to electronic and mobile commerce transactions (Siau et al., 2004). The key requirements for secure financial transactions in electronic environment include confidentiality, data integrity, authentication, and non-repudiation (Shon & Swatman, 1998).

Other security factors important for consumer adoption are anonymity and privacy, which relate to use policies of customers' personal information and purchase records (Jayawardhena & Foley, 1998; Shon & Swatman, 1998). A strong system must also be in place to manage liquidity and to guarantee security and the flow of cash. (BCG, 2011). Mallat (2006), examined consumer adoption of a new electronic payment service, mobile payments. The empirical data for the explorative study

was collected by establishing six focus group sessions. Some interviewees noted that in addition to complementing cash use, some plastic cards could be integrated in mobile devices to reduce current multitude of cards carried in a wallet, provided that the security of mobile payments would become good enough to prevent fraud and misuse. From the study, the perceived security risks include; unauthorized use, transaction errors, lack of transaction record and documentation, vague transactions, concerns on device and network reliability and concerns on privacy. Tavilla (2012) assessed the opportunities and challenges to broad acceptance of mobile payments in the United States. The study revealed that while convenience and increasing consumer comfort are obvious benefits, concerns about security and privacy risks around mobile payments remain major barriers to adoption. Consumers worry about the possibility of personal data being hacked or intercepted, mobile transactions being less secure than credit and debit card transactions, and possible fraudulent charges in the case of lost or stolen mobile phones. With proper security measures and specific regulatory guidance in place, mobile payments can be just as or even more secure than traditional payment methods. However, comprehensive education and marketing efforts are needed to reassure consumers of the safety of mobile payments.

In the context of mobile banking, the perception of risk is even more important due to the threat of privacy and security concerns (Luarn & Lin 2005), fear of loss of PIN codes may also pose security threats (Kuisma et al. 2007). Some users also fear that hackers may access their bank accounts via stolen PIN codes (Poon 2008), while users may also have a fear of loss or theft of a mobile device with stored data (Coursaris et al. 2003).

Therefore, perceived risk is more likely to negatively affect the mobile banking adoption. This may thus discourage people from paying bills using the M-Pesa pay bill.

Despite growing interest and increasing comfort levels on the part of consumers toward conducting financial transactions via mobile phone, security and privacy risks remain top concerns for mobile payments, and they continue to be a major obstacle to widespread adoption. Specific security issues identified vary by survey. Some consumer reservations stem from fear of payment account information being intercepted, threat of unauthorized parties accessing personally identifiable information, and receipt of unsolicited promotional material. Major impediments to consumer adoption of mobile banking and mobile payment technologies are concerns about security, in particular the possibility of hackers' remotely accessing consumers' phones and intercepting payment information as established by the Federal Reserve survey (2012). According to research from Synergistics, over half of mobile phone owners surveyed indicated identity theft as a top concern related to making mobile payments. Over 50 percent of the consumers surveyed in a First Data mobile payments study believed that making a payment via mobile phone was less secure than making a payment in person or with a credit or debit card. Regardless of the specific reason for the security concern, security issues must be addressed to achieve mass adoption of mobile payments. Deloitte (2013), investigated M-Banking and M-Payments in India and revealed that most people today still do not trust digital money and prefer to deal in cash since they have concerns about security, privacy, speed, as well as, transparency of usage charges when using digital money. It's suggested that adequate security and quality of service standards need to be devised, defining robust standards of security and high quality of service including encryption

protocols to be adhered to and uptime to be provided. This may be important as various private players from banks to telcos to other retail and technology players, enter this space, and attempt to reach a large segment of society. Assurance against money fraud is one of the key issues that need to be looked into by the regulators. Common standards to implement anti-money laundering, and ensure transparency and security to the customer may be an enabler to propel the use of mobile money.

Dahlberg and Mallat (2002), studied the managerial implications of consumer value perceptions on mobile payment service and concluded that superior security is created by user specific PIN codes, closed and operator controlled mobile networks with all network transactions registered, secured network traffic, and payment transaction certificates. This is compared to the claimed insecurities of Internet, and in the physical world to the need to carry cash. The M-Pesa application can use the security keys in the user's SIM card to encrypt messages end-to-end, from the user's handset to Safaricom's M-Pesa server. (Mas and Radcliffe, 2010). CBK's National Payments System (NPS) Division, Financial Sector Deepening (FSD) Kenya and the Consultative Group to Assist the Poor (CGAP) formed a partnership to undertake research into the experience of the developments in Kenya. When asked about the security of M-Pesa, the overwhelming majority of users (92%) said that the service is safe. This is mostly attributed to the fact that the PIN is secret, whereby access to the account is restricted to the user only. Having confidence in the operator (Safaricom) or its agent's plays only a subordinate role in creating customer trust. (Jack and Suri, 2009).

Virtually everyone reports that money sent through M-Pesa reached the recipient in full. About 4% of respondents say that they have ever sent money to the wrong person. A third

of those who erroneously sent the money never got it back (at the time of the survey, this accounts for around 80,000 users). Those who were able to recover the money normally didn't have to wait for more than a few days for their transaction to be reversed by Safaricom. When someone registers for M-PESA, 95% of agents show them how to use it, and 74% suggest a way for them to choose a PIN (6% say they choose a PIN for the client, which is a clear violation of the security procedures). Clients themselves are not very prudent when it comes to data confidentiality: a substantial fraction tells agents their PINs when signing up. PIN numbers are already in widespread use in developing countries—for example, as a security feature on mobile phones—but not yet as e-signatures. Many developing countries have yet to adopt legislation enabling e-commerce. It is unlikely that individuals will accept the risk of accepting or making larger e-payments, or build new business cases on the receipt of e-payments, if their validity may be challenged. Establishing the legal validity of e-signatures is therefore a need for the m-payment/ m-banking market to grow to scale.

Interestingly, a consumer realizes that his mobile phone is missing sooner than his physical wallet. The average amount of time it takes a person to realize a lost wallet is approximately five or six hours, but it takes someone about 15 minutes to realize his phone is missing. It is possible that mobile payments can be more secure than traditional payment methods. For this to be the case, the phone must be set up correctly with risk mitigation tools having the ability to remotely wipe, delete, lock, and disable a lost or stolen mobile phone, with anti-virus and malware software, and with multiple layers of security to lock both the phone and access to the secure mobile wallet – and the consumer must use the mobile payments capabilities correctly.

As an added security measure, a consumer can request alerts for various types of account activities, such as suspicious purchases and transactions over preset limits. These tools requires banks and other mobile payment providers to work collaboratively to help consumers understand that they also have responsibilities to protect their payment account credentials and physical devices, and to help consumers find and implement risk mitigation software and other tools. Consumers should be educated on what not to do, such as download untested, questionable, uncertified applications or share their mobile phones.

While security concerns remain a deterrent to mobile payments for many consumers, collaborative industry efforts to develop adequate education and effective security tools can assure them that mobile payments are a safe way to pay. Together, all these factors would help significantly augment mobile payments acceptance in the Further, it would be beneficial for banks and other mobile stakeholders to continue to partner in developing their mobile payment solutions

2.5 Measures of Efficiency

The technological invention is considered easy to use yet efficient and reliable with the potential to extend financial services to the unbanked or those preferring cheaper financial services. It is an appropriate technological invention for customers that continue to face challenges related to limited affordable and accessible financial services (Mbogo, 2010). M-Pesa pay bill can be used to raise efficiency through cheap, efficient and reliable money service support systems that reduce the need for cash transaction and the risks. It enables timely and secure transfers to lower cash management costs and administrative burdens (USAID, 2013)

There are several studies that have highlighted on the efficiency of mobile money.(Gu et al, (2009 found that self efficiency was the strongest antecedent of perceived ease-of-use, which directly and indirectly affected behavioral intention through perceived usefulness in M-money. Consumer Protection Service, Inc (CPSS, 2012) identified the following as measures of efficiency: reduced use of cash or cheques, lower processing costs, speeding-up of processing, overcoming infrastructural lags, inclusion of unbanked or under banked, government payments, fostering competition, improved convenience.

USAID (2011) noted that merchants opt to use M-Pesa for purchases, both for its convenience as well as its cheaper fee structure compared to most credit cards. It is affordable and it is much more effective in developing saving habits (Sohel Ahmed et al., 2011; Al-Adwan et al., 2013). This is in support of Goyal et al., (2012)'s study which opined that m-payments should not be costlier than existing payment mechanisms to the extent possible. Lee and Lim (2005) cited in Mbogo, (2010) indicate that security and safety of mobile payment transactions is one of the primary concerns for users. Omwansa (2009) acknowledges the safety associated with mobile money payment by stating that a lost or stolen mobile phone does not mean loss of the money in the account, since one cannot easily know the owner's PIN. Hence, no one can access an M-Pesa account without a correct PIN. He further adds that in a country where majority of people have no bank accounts, M-Pesa provides both convenience and safety. This is supported by Bångens and Söderberg (2008) who documented that the main benefits to rural users are affordable, fast and secure transactions. People walk around with their virtual money knowing they can withdraw cash any time at a minimal fee. In a mobile environment, it is necessary to have perceived security and trust in the vendors and the payment system

(Mallat, 2007, cited in Mbogo, 2010). The value proposition for use of M-Pesa by organizations focuses on a number of benefits, including reduction of cash “leakage” and corruption, less paperwork; better transparency and accountability via the electronic records (USAID, 2011). This is due to the fact that one does not need to fill forms to have his transfer effected. Besides, the recipient also doesn’t need to fill any form(s) before receiving the money, a characteristic so common in commercial banks.

The most important factor that attracts customers to use e-payment is its convenience (Al-Adwan et al., 2013). M-Pesa, just as any other form of bill payment, can be used over a vast geographical area. The customer does not have to visit the bank ATM or a branch to avail of the bank’s services. Jack and Suri (2010) note that by transfers across large distances trivially cheap, M-Pesa improves the investment in, and allocation of, human capital as well as physical investment. Households may be more likely to send members to high-paying jobs in distant locations (e.g., the capital), either on a permanent or temporary basis, and to invest in skills that are likely to earn a return in such places but not necessarily at home. Customers consider M-Pesa a cheaper, faster and safer option for sending money, and one that is considerably more accessible than other options out there, such as bus, taxi, PostaPay or bank branches (Jack and Suri, 2011). Mobile banking is available anytime, anywhere throughout the country (Sohel Ahmed et al., 2011). Goyal et al. (2012) also add on this by stating the speed at which m-payments are executed must be acceptable to customers and merchants. This all reflect the convenience of M-Pesa payment.

Four and a half years after M-Pesa’s launch, there are approximately 16 million users of mobile money in Kenya, conducting over 2 million transactions every day. M-Pesa

processes transactions worth US\$4.98 annually, translating to 17% of Kenya's Gross Domestic Product (Zimbabwe Independent, 2011). Besides being used for domestic remittances, money can be sent and received from partners in the United Kingdom. M-Pesa can be used at major supermarkets or to purchase event tickets. Customers can pay bills and receive corporate payments (such as salaries) using the service. And, most notably, in May 2010 M-PESA partnered with Equity Bank to create M-KESHO, an interest paying bank account that resides in parallel on the M-Pesa SIM card (Donovan, 2011).

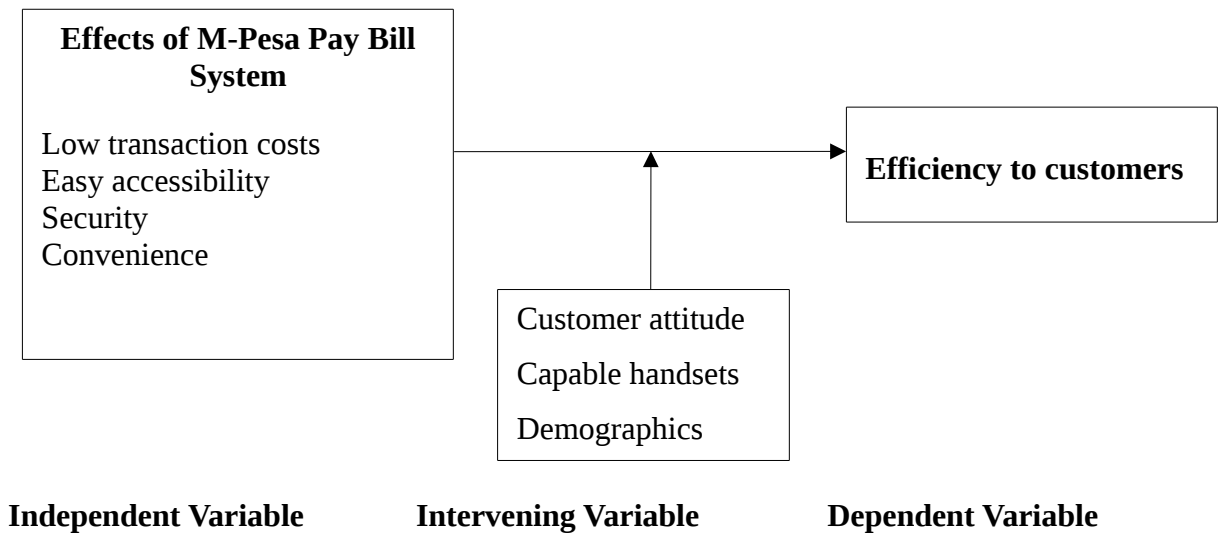
2.6 Research Gap

From the above literature, it is evident that few researches have been done in this area of M-Pesa pay bill system and customer efficiency. Mbogo (2010)'s research only concentrated on the impact of Mobile Payments on the Success and Growth of Micro-Business. Mbiti and Weil (2011) examined how M-Pesa is being used in Kenya and in particular whether M-Pesa is solely a low-value money transfer system or a nascent form of a means of saving, providing broader financial access for people who are unbanked while Munyange (2012) investigated the sustainability and viability of the mobile money transfer service in the industry. On the other hand, Ng'ang'a and Mwachofi (2013) studied on Technology Adoption and the Banking Agency in Rural Kenya, with the aim of approaching the promotion of Mobile and Agency Banking technology adoption and its diffusion in Kenya while Okiro and Ndungu (2013) investigated the impact of mobile and internet-banking on performance of financial institutions in Kenya and also. It is for this reason that the researcher undertakes this research so as to fill the gap.

2.7 Conceptual Framework

Figure 2.2 shows the effect of bill payment using M-Pesa on efficiency on customers. The independent variable is the effect of M-Pesa pay bill system which are perceived low transaction costs, ease of access, convenience and perceived security. The dependent variable is efficiency to Safaricom customers which constitutes saved transaction cost, ease of accessibility of system security of bill payment and convenient payments of bills. Once a Safaricom customer uses M-Pesa service in making bill payments, then it will improve reduce the time he would otherwise save the time he would spend going to make the payment. It will also be convenient to him and it will save transaction costs besides improving his accessibility of the bill payment point. The intervening variables are customer attitude, availability of capable handsets and demographic factors. If the Safaricom customer has a negative attitude towards the service, a handset which cannot access the M-Pesa facility or he has no experience of using the service, then these may challenge him from using the M-Pesa service. Besides, demographic factors such as age may encourage or discourage one to use M-Pesa bill pay service.

Figure 2.2: Effects of Bill Payment Using M-Pesa on Efficiency among Safaricom Customers in Kenya



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprises the research design, target population, sampling frame from which the sample will be chosen, sample size that will be used in the study, sampling technique to be used and data collection instruments which will be used in the study. Besides, the chapter will also discuss the pilot testing which will be done on the research instrument so as to determine their validity and reliability, and the data analysis.

3.2 Research Design

The study adopted a quantitative, descriptive research design. Ruane M. J (2005) indicates that such design offers a detailed picture or account of some social phenomenon or setting. This kind of research strives to be as accurate as possible, by paying close attention to issues as measurement and sampling. The design was analytic in approach and sought to prove or disprove formulated hypotheses using quantitative and inferential statistics. Consequently, the particular design preferred was the causal comparative design which attempted to examine causal relationships between the independent and dependent variables within the naturally occurring environment without randomly putting study subjects in groups. This design enabled the researcher to manipulate the independent variables while looking out for any causative effects on the dependent variable.

3.3 Study Area

The study was conducted in Kisii County. The County was selected for the study due to the fact that it has high population which constitutes people from different parts of the country. Kisii County is found in the Western part of Kenya and it is bordered by Nyamira County, Narok County, Homabay County and Migori County. The County occupies an area of about 1,317.4 square kilometers on which 245, 029 households live. The county was also found to consist of many M-Pesa agents spread out even in remote towns.

3.4 Target Population

The target population for this study was Safaricom subscribers. Consequently, this is the population about which conclusions on the effect of the Mpesa bill payment system on customer efficiency in payment of bills were drawn. The study population was therefore drawn from Safaricom subscribers who use the Mpesa platform to pay their bills, and Mpesa vendors. The exact study population could not be ascertained due to the ever changing customer needs and was therefore estimated to total over 10,000 for analysis purposes.

3.5 Sampling and Sampling Procedure

According to Kothari (2004), sampling is the process by which a relatively small number of individuals, objects or an event is selected in order to find out something about the entire population from which it was selected. The sampling units in this study were registered Safaricom customers. Consequently, the study units were individual Safaricom customers using the Mpesa platform and individual Mpesa vendors. Purposive sampling was used to select the sample of customers and vendors. While purposive sampling is not

probabilistic, the method was preferred since it was not possible to determine the exact population of individuals who were subscribed to Safaricom and who used the Mpesa platform to pay bills. Hence sampling was based on the need for customers to transact in payment of bills at the time of study.

3.5.1 Sample size

Degu and Tessema (2005) suggest the following formula in determining a sample size, which was adopted in selecting sample size of the Safaricom customers and vendors.

$$n = Z^2 p (1-p) / W^2$$

where, n is the sample size

p is the estimated proportion, since p for the present was not determined, it was taken to be 50%.

W is the margin of error allowed, in the present study 5%

Z is the value corresponding to the level of confidence taken, which in this study was the 99% confidence level. Hence Z=1.65.

This formula was used assuming that the potential population of customers was very large (N>10,000).

$$\text{Thus } n = \frac{1.65^2 \times 0.5 \times 0.5}{(0.05)^2} = 272.25 \approx 272$$

3.6 Data Sources

Data for this study was obtained from both primary and secondary sources. Primary data was collected using a questionnaire that was administered to the selected sample. To achieve the objectives of the research, the questionnaire was prepared and then used to

collect data from the respondents. The questionnaire sought to determine whether transaction costs, access of M-Pesa bill payment platform, security and convenience in any determined bill payment efficiency. Secondary data involved a review of published material from other studies and experts, to relate the studies to the current study. It formed the basis for formulating a statement of the problem, objectives and hypotheses.

3.7 Data Collection Instruments

Primary data was collected using questionnaires that were structured having both open-ended and closed-ended questions. Open-ended questions were used in situations where the researcher wished to hear more from respondents therefore according respondents more latitude. The questionnaires were preferred as a method of collecting primary data for the study since respondents were distributed over a wider geographical area which included remote areas not easily reached. This was therefore deemed as the ideal method that could ensure wider coverage.

3.8 Validity and Reliability of Instrument

Validity is used to determine whether a research measures what it intended to measure and to approximate the truthfulness of the responses. To ensure content and construct validity of the questionnaires, the data must support the theoretical literature and theory corresponds with reality. To achieve this, the researcher will consulted the supervisor for analysis of the instrument before it was administered. Other experts were consulted while developing the questionnaire to ensure that conclusions drawn from analyzing the survey data were valid. Since according to Joppe (2000) reliability is the extent to which results of a study are consistent over time, this was confirmed by carrying out a pilot-test of the questionnaires on Safaricom subscribers who were not taking part in the study. The

questionnaires were administered to at least 10 prospective respondents to test for the areas that needed to be altered or modified for clarity and relevance. The piloted questionnaire was tested using cronbach's alpha to ensure that it was consistent with the variables of the study. It was accepted where $\alpha > 0.5$ and if $\alpha < 0.5$, it was rejected and modified to relate with the variables of the study.

3.9 Data Analysis Procedures and Presentation

Data were analyzed using both descriptive and inferential statistics. In particular, means and standard deviations were used to explore the perceived prevailing levels of transaction costs, system security, system accessibility, and system convenience among the sampled respondents. In addition, pie charts and bar charts were used to explore background characteristics of the study sample. Further, multiple regression analysis was used to test the hypothesized relationships between the conceptualized independent variables and the dependent variables. This was necessary so as to examine the effect of each independent variable on customer's efficiency in paying bills while keeping the other independent variables constant. Consequently, the following multiple regression model was examined.

$$EFF = \beta_0 + \beta_1 MPTC + \beta_2 ACCM + \beta_3 SEC + \beta_4 CON + \varepsilon, \text{ where,}$$

EFF =Efficiency among Safaricom Customers

β_0 =Coefficient of Intercept

$MPTC$ =M-Pesa bill payment transaction cost

$ACCM$ =Accessibility of M-Pesa bill payment points

SEC = security of M-Pesa bill payment system

$CON = \hat{i}$ Convenience of the Mpesa system of bill payment

$\beta_1, \beta_2, \beta_3, \beta_4$ = regression coefficient of four independent variables

ε = error term

The use of multiple regression to test hypotheses meant that assumptions of multiple regression were tested. This was done by testing for among others, missing values, outliers, normality, linearity, homogeneity of variances, and un-correlation of errors.

3.10 Ethical Considerations

Permission was obtained from the School to enable this study to be conducted. Confidentiality and anonymity of subjects was maintained at all times. Informed consent of respondents was obtained voluntarily by first explaining to them the research in advance, and debriefing them afterwards. The researcher will take full responsibility for the whole study, which was independent and impartial.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The current study sought to establish the effects of M-pesa Pay Bill system on efficiency of Safaricom customers in paying bills. In line with data analysis process, data were first collected and cleaned. Data were then explored using descriptive statistics before finally analyzing for existing relationship among variables. This chapter therefore presents results of data analysis the discussions and implications of the findings of the study. First results of data screening and cleaning are presented. This is then followed with an examination of respondents perceptions of levels of the study variables presented in terms of descriptive statistics. The chapter concludes with an exploration of the cause effect relationship among variables conducted using Multiple Regression Analysis.

4.2 Data Screening

Data Screening was conducted in order to establish whether among others, it accurately reflected participants responses, whether all data were in place and accounted for, whether there were any unusual or extreme responses present in the data set that could distort understanding of the phenomena under study, and whether the data met, the statistical assumptions that underlie multiple regression analysis. In this regard, data were screened for response rate, outliers, normality, linearity and homogeneity of variances.

4.2.1 Response Rate

The study targeted a total of 272 Safaricom customers drawn from Kisii County. Consequently, 272 questionnaires were administered to the purposively sampled

customers. A total of 235 questionnaires were returned for which 5 were further discarded for either lack of response or being improperly filled out. The researcher ended up with 230 usable questionnaires which represented a response rate of 84.2% (see Table 4.1). This response rate was deemed acceptable since according to Fowler (2002), the whole point of conducting a survey is to obtain useful, reliable and valid data in a format that makes it possible to analyze and draw conclusions about the total target population.

Table 4.1: Response Rate to Questionnaires

Sample size	Safaricom customers	
	Number	%
Total sample size	272	100
Total responses	235	86.4
Unusable	5	1.8
Total usable responses	230	84.6
Description of unusable questionnaires		
Returned blank	2	
Incomplete questionnaire	3	

Source: Survey Data (2014)

4.2.2 Univariate outliers

According to Stevens (2002), outliers are cases that have data values different from the data values for the majority of cases in the data set. Outliers are important because they can alter the results of data analysis. Guidelines suggested by Stevens (2002), for detecting univariate outliers were used to detect univariate outliers. A case was deemed a univariate outlier if its standard score was found to lie outside the interval -3.0 to +3.0. In the event that an outlier existed, the case was deleted from further analysis. Results presented in Table 4.2 revealed that only two variables had univariate outliers. The variable “Mpesa system makes it convenient for me to bank and withdraw money from my bank account” had two outliers in cases 87 ($z=3.947$) and 214 ($Z = 3.947$). Similarly, the variable named “my unique pin number secures my money” had three outliers in

cases 87 ($Z = 4.346$), 99 ($Z = 4.346$) and case 214 ($Z = 3.034$). The three cases were therefore deleted from further analysis, leaving a total of 227 cases for further analysis.

Table 4.2: Univariate Outliers

Variable	Case	Z-Value
The Mpesa system makes it convenient for me to bank and withdraw money from my bank account	87	3.947
	214	3.947
My unique pin number secures my money	87	4.346
	99	4.346
	214	3.034

Source: Survey Data (2012)

4.2.4 Testing for Normality

Normality of the variables was tested for the four independent variables (cost of transaction, service accessibility, service security and service convenience) and the dependent variable (customer efficiency in bill payment). Response scores for items measuring a given construct were first summated and averaged to give a score for the particular construct. Normality was then assessed using measures of Skewness and Kurtosis (Tabachnick & Fidell, 2007).

The distribution across any variable was considered to be normally distributed if Skewness and Kurtosis values ranged between -2.0 to 2.0. Results presented in Table 4.3 revealed that skewness and Kurtosis values for all the variables in the study were within the acceptable range. Normality assumption was therefore considered to have been met.

Table 4.3: Testing for the assumption of Normality

	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Cost of Transaction	-.291	.162	-.331	.322
Service Accessibility	-.784	.162	.041	.322
Service Security	-.609	.162	-.970	.322
Service Convenience	.300	.162	.797	.322
Customer Efficiency in Bill Payment	-.458	.162	1.113	.322

Source: Survey Data (2014)

4.2.5 Testing for Linearity

Multiple regression analysis assumes that variables in the analysis are related to each other in a linear way; that the best fitting function is a straight line (Hair et al, 2005). Pearson correlation coefficients were therefore used to assess the degree of linear relationship among the study variables. Results presented in Table 4.4 indicate that there were positive associations among the independent variables as well as between the independent variables and the dependent variable. More specifically, there were positive correlations between cost of transaction and service accessibility ($r=0.481$); cost of transaction and service security ($r=0.509$); cost of transaction and service convenience ($r=0.256$); cost of transaction and efficiency in bill payment ($r=0.273$); service accessibility and service security ($r=0.653$); service accessibility and service convenience ($r=0.254$); service accessibility and efficiency in bill payment ($r=0.228$); service security and service convenience ($r=0.140$); and between service convenience and efficiency in bill payment ($r=0.218$). Linearity assumption was therefore supported.

Table 4.4: Testing Assumption of Linearity

	1	2	3	4	5
1. Cost of Transaction	1				
2. Service Accessibility	.481**	1			
3. Service Security	.509**	.653**	1		
4. Service Convenience	.256**	.254**	.140*	1	
5. Efficiency in Bill Payment	.273**	.228**	.087	.218**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Survey Data (2014)

4.2.6 Testing for Homogeneity of Variances

Homogeneity of variances was tested using Levenne's test of equality of variances across gender of respondents. The study tested the assumption that the variance of each of the male and female subgroups was the same on the study variables. The desired outcome was therefore failure to reject this assumption, in which case it would be concluded that the variance of the subgroups was the same.

Results shown in Table 4.5 indicate that at the alpha level of 0.05, none of the variables was significant. It was therefore concluded that all the variables used had the same variance across gender. Homogeneity of variances was therefore supported.

Table 4.5: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Cost of Transaction	3.363	1	225	.068
Service Accessibility	1.213	1	225	.272
Service Security	.711	1	225	.441
Service Convenience	.702	1	225	.403
Efficiency in Bill Payment	.008	1	225	.930

Source: Survey Data (2014)

4.3 The Demographic Profile of the Respondents

Demographic profile of respondents was analyzed in terms of gender, education, age and form of employment. These variables have been shown in previous studies to have an effect on the decision to adopt various technological advances (Aven, et al , 1993; Deakin, et al, 2004). In their study, Alafeef, Singh and Ahmad (2011) established that demographic factors were most important variables that affect the use and adoption of any new technology. Consequently, there was need to analyze respondents demographic profile so as to control for their influence on the study findings.

4.3.1 Gender Distribution of Respondents

Inclusion of gender as a demographic characteristic in the present study was informed by previous studies conducted to investigate gender and commitment to an organization. In a meta-analysis of the relationship between gender and organizational commitment, Aven, Darker and Mcevoy(1993) concluded that similar commitments can be won both from males and females when they feel fairly treated by organizations. The present study therefore sought to analyze the gender composition of the sample with a view to controlling for gender influence in the final model.

The gender distribution of the respondents is presented in figure 4.1. it is evident that majority of respondents (62.1%) of the total customers were male than female who represented only 37.9% of the total customers included in the survey. This could probably reveal that male customers use the M-Pesa bill payment system more in making their payments.

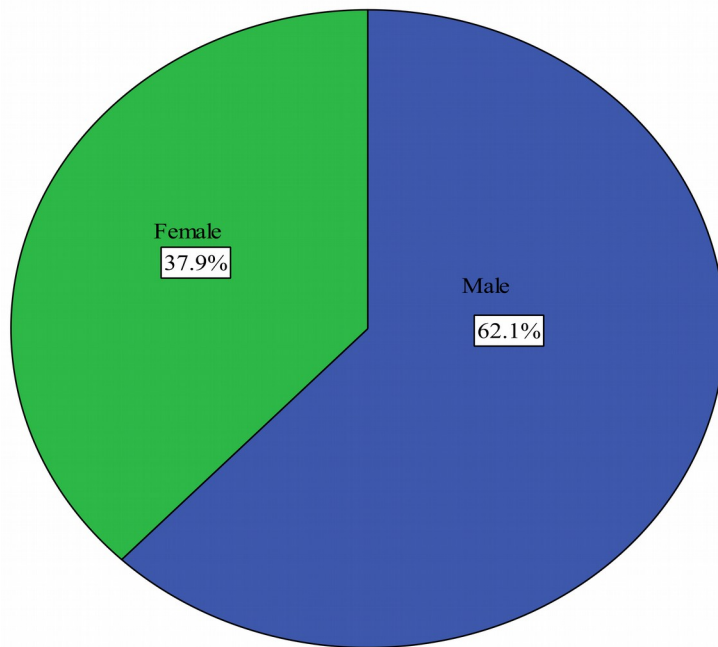


Figure 4.1: Gender Distribution of respondents

Source: Survey Data (2014)

4.3.2. Distribution of Respondents on Basis Educational Level

According to Alafeef et al.,(2011), the level of education is the strongest positive factor that affects consumer adoption level of mobile banking applications. Education was therefore considered a key background characteristic that may influence use of technology and commitment to payment of bills through the Mpesa platform. As a result, the education distribution of respondents was analyzed in order to establish the prevailing levels of education among the respondents and more importantly, to control for the influence of level of education in the study model.

Respondents' level of education was analyzed using four indicator categories. These categories were secondary level, certificate/diploma, undergraduate, and post graduate. Results of the analysis shown in figure 4.2 indicate that most of the respondents (34.4%)

appeared to have attained certificate or diploma level of education. However, they were closely followed by those who had completed secondary school (32.6%). The least number of respondents were those who had an education level of up to post graduate (7.9%).

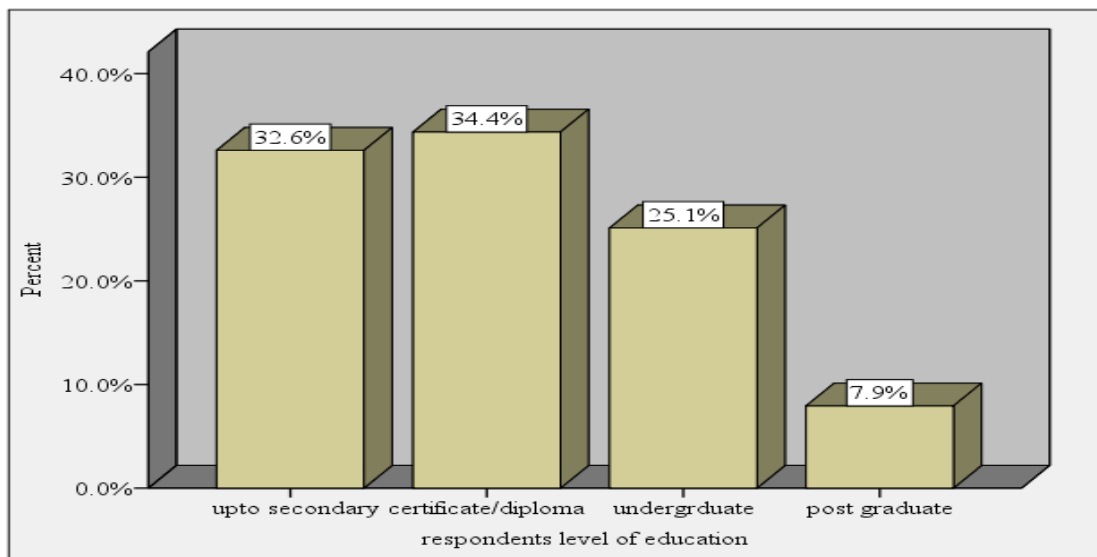


Figure 4.2. Distribution of respondent's level of education

S

source: Survey Data (2014)

From the results above, it is apparent the distribution of the level of education among the respondents does not show major variations. This implies that the decision among the respondents to use Mpesa in payment of bills may not have been influenced by level of education.

4.3.3 Distribution of Respondent's age

The urge to use Mpesa paybill system requires decision making. Research in deficit perspective (Deakin, Atken, Robbins & Sahakian, 2004) show that age is a factor in decision making. Consequently, given that age was not part of the independent variables in the current study, it was necessary to examine the distribution of the respondents across age bracket so as to control for the effects of variations in respondents age in the final study results.

Age as a background characteristic was assessed using three age brackets. Respondents were assessed whether they were aged below 30 years, between 30 and 50 years or above 50 years. As shown in figure 4.3 which presents respondents age distribution, a majority of the respondents (55.1%) belonged in the age bracket 31-50 years. This implies that most of active users of the Mpesa platform in the study area are those between 30 years and 50 years. This could possibly be because this is the most active age bracket and which includes most employed respondents.

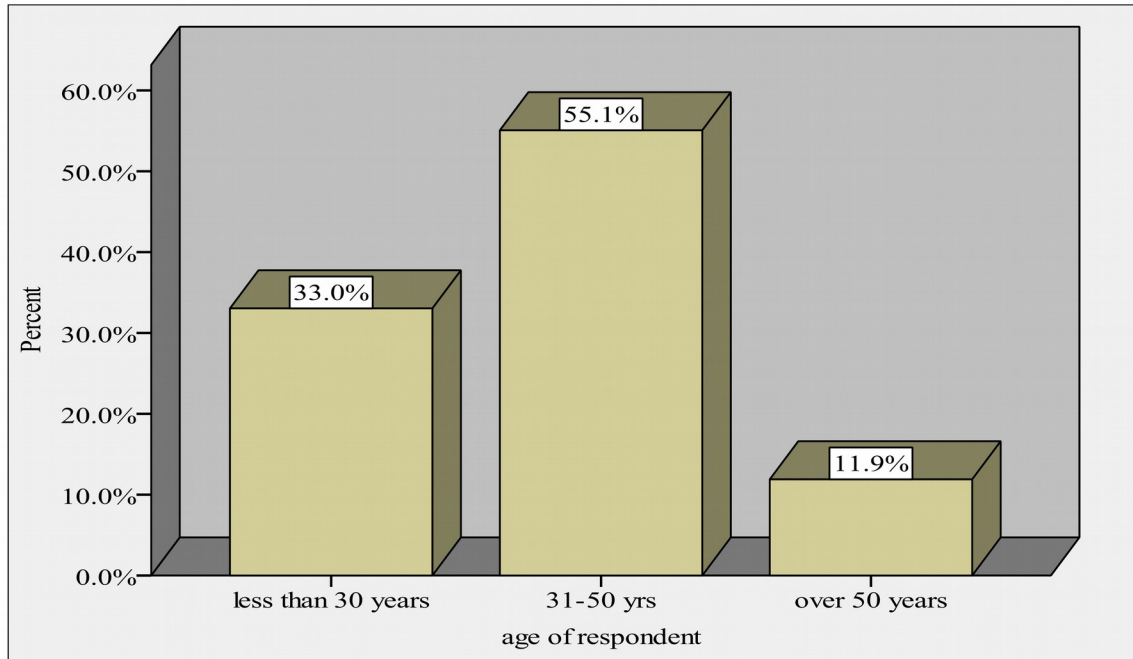


Figure 4.3. Distribution of respondents age

4.3.4 Respondents Employment Profile

Employment profile of the safaricom customers was deemed relevant as a background characteristic since it was posited that formal employment was pivotal to services that would require payment. Respondents were therefore asked to indicate whether they were formally or informally employed. Results presented in Figure 4.4 indicate that most of the respondents were formally employed (57.3%). However, a large proportion (42.7%) was engaged in informal employment. This implies that the sample was relevant since employment would mean need to pay for certain statutory payments which could require the Mpesa platform.

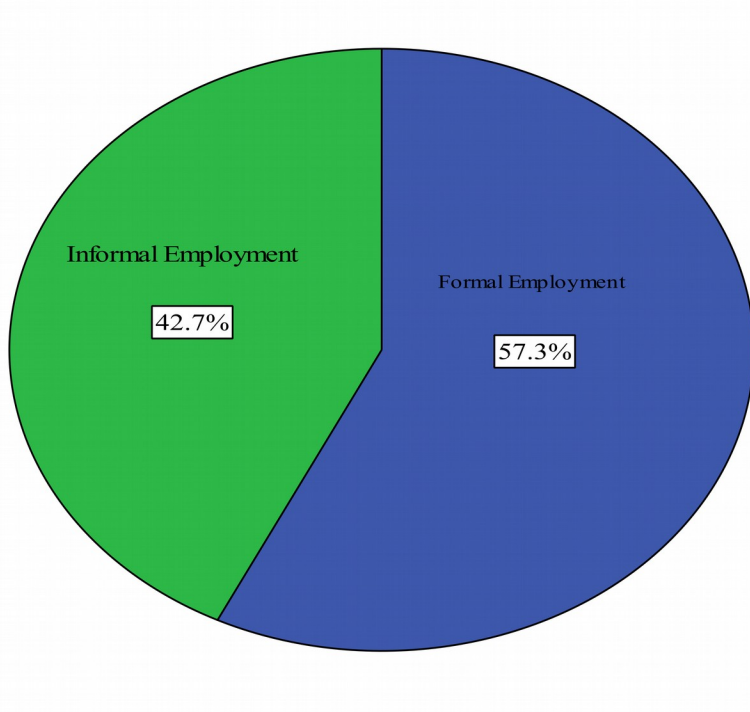


Figure 4.4: Distribution of Respondents employment Status

Source: Survey Data (2014)

4.4 Descriptive Statistics of the Study Variables.

Means and standard deviations were used to examine the respondents' perceptions of the prevailing levels of the independent and dependent variables within the study area. This was necessary so as to draw inferences on the effect of manipulation of independent variables on the dependent variable.

4.4.1 Perceived levels of Mpesa Transaction cost among Kisii county Safari com customers

Research objective one sought to determine the effect of Mpesa bill payment transaction cost on efficiency in payment of bills among safari com customers. In this regard, six items were used to measure respondent's perceptions of the transaction cost involved in

paying bills using the Mpesa platform. Respondents were asked to indicate the extent of agreement or disagreement with the six items. Responses were elicited on a 5-point scale ranging from 1 – strongly disagree to 5 – strongly agree.

Results presented in Table 4.6 reveal that on the overall respondents in the study area perceive the Mpesa paybill system cost effective. In particular, respondents tended to agree that, they find it cheaper sending money through Mpesa than other modes ($M = 4.33$, $SD = 0.489$); that sending money via Mpesa saves money that would have been spend on transport to bank ($M=3.97$, $SD = 0.616$); that the Mpesa system saves time that would have been spent on queues ($M=4.06$, $SD = 0.847$); that the paybill number when used attracts no costs ($M=3.97$, $SD=0.862$); that the system reduces the danger posed in handling cash money ($M=3.73$, $SD, = 0.760$); and that the system makes it convenient to bank and withdraw money from their bank accounts ($M = 3.78$, $SD = 0.724$).

Table 4.6: Perceived Levels of Mpesa Transaction Cost among Safaricom Customers in Kisii County

Transaction cost variables	Mean	Std. Deviation
I find it cheaper to send money through M-Pesa than through other modes	4.33	.489
M-pesa services saves me time taken on queues to make payments	4.06	.847
Sending money by M-Pesa saves me the money i would have used on transport to the bank	3.97	.616
I do not incur any costs in paying bills when i use a registered paybill number	3.97	.862
The M-pesa system makes it convenient for me to bank and withdraw money from my bank account	3.78	.724
M-pesa system reduces the danger posed in handling cash money	3.73	.760

Source: Survey Data (2014)

These results show high levels of agreement among customers in the study area regarding the relevance of the M-pesa system in minimizing costs that would have been spent while using other forms of financial transactions while paying bills. The standard deviation values associated with all the items were rather small. This shows that there was consistency in the given responses.

4.4.2 Perceived levels of Accessibility of M-pesa Paybill platforms.

The second objective of the current study was to establish the effects of accessibility of the M-pesa bill payment platform on customers efficiently in payment of bills. Consequently, the study first established how respondents perceive availability of M-pesa agents in the study area.

Respondents were once again asked to indicate the extent to which they agreed or disagreed with the seven items reflecting on accessibility of M-pesa pay points.

Responses were again elicited on 5-point scale ranging from 1-strongly disagree to 5-strongly agree. Results are shown in Table 4.7 .

Table 4.7: Perceived Levels of Accessibility of M-pesa Bill Payment System Among Safari com Customers in Kisii County

Accessibility variables	Mea n	Std. Deviation
The network is always reliable for me to transact business	4.07	.723
I am able to pay my bills on-line	4.06	.686
Accessibility of Mpesa service providers enables me to pay my bills from anywhere within the country	4.03	.634
Accessing Mpesa service providers is easier and faster	3.95	.542
I am able to pay my bills anytime of the day	3.82	.727
M-pesa service providers are conveniently open whenever i need them	3.79	.564
I am able to access M-Pesa agents even in remote areas	3.77	.789

Source: Survey Data (2014)

As seen from Table 4.7, all the mean response scores were approximately 4.00 which indicated overall agreement with all the items. The most favourable items were that the Safaricom network was always reliable for business transactions (M=4.07, SD=0.723); that customers are able to pay bills online (M=4.06, SD = 0.686); and that accessibility of the service providers enables payment of bills from anywhere within the county (M=4.03, SD=0.634). The least favourable item, but which was still acceptable among respondents is that customers are able to access Mpesa agents even in remote areas (M= 3.77, SD=0.789). These results imply that to most respondents, the Mpesa service providers are spread all over the county even in the remotest of areas. This makes the services to be easily accessible. Besides, results indicate that the stable nature of the Safaricom network confounds accessibility of the service among the customers.

4.4.3 Perceived Levels of Security of the M-pesa Pay Bill system

In line with the third objectives which sought to establish the effect of security of Mpesa pay bill system on customer efficiency in payment of bills, customer perception of security of the system were first assessed. Respondents were asked the extent to which they agreed/disagreed with items reflecting security of the system. Seven items were used to measure respondent's perceptions of the systems security.

Results presented in Table 4.8 reveal that Safaricom customers in the study area have confidence in the security of the M-Pesa bill payment system. All the response approximated the agreement score of 4.00 and had small standard deviations which showed small variations from the variable mean hence consistency in responses. More particularly, respondents tended to agree that they have never been afraid of losing money while the system while using system (M=4.12, SD=0.571), that their bill payment is always credited to their account (M=3.96, SD=0.677); that the system performs well and always processes payments correctly (M=3.90, SD=0.693), among others.

Table 4.8: Perceived Levels of Security of M-pesa Bill Payment System among Safari com Customers in Kisii County

	Mean	Std. Deviation
I have never been afraid of losing my money while using the M-pesa bill pay system	4.12	.571
My bill payment is always credited to my account	3.96	.677
I am able to safely pay my bills without fear of losing my money	3.93	.668
Paying bills via M-pesa is safer than carrying cash money	3.93	.755
M-pesa pay bill system performs well and always processes payments correctly	3.90	.693
I have never lost money from my account as a result of using the M-pesa pay bill system	3.86	.634
My pin number is very secure	3.79	.532
My unique pin number secures my money	3.76	.676

Source: Survey Data (2014)

4.4.4 Respondents Perception of convenience accorded by the M-pesa Pay Bill System

The fourth objective of the study set out to determine the effect of convenience of M-pesa system and efficiency of customer's bill payment. It was therefore necessary to examine customer perceptions on prevailing market behaviour among M-pesa agents that would constitute service convenience. Respondents were asked the extent of agreement with seven items selected to reflect convenience. Responses were once again elicited on a 5-point scale ranging from 1-strongly disagree to 5-strongly agree. Table 4.9 displays results of this examination.

Table 4.9: Perceived Levels of Convenience of the Mpesa Bill Payment System among Safari com Customers in Kisii County

	Mea n	Std. Deviation
I often find the M-pesa pay bill system timely.	4.26	.628
The M-pesa pay bill system is quite flexible	4.14	.590
The M-pesa system allows me to pay my bills anytime of the day	4.13	.549
I am able to pay my bills using the M-pesa system even during weekends and holidays	4.12	.440
The M-pesa system accords me the luxury of purchasing air time any time	4.12	.571
I always find the M-pesa pay bill system easy and convenient to use	4.08	.486
The M-pesa system enables me to pay my bills even from my house	4.06	.503

Results shown in Table 4.9 clearly show that customers in the study area perceive the M-pesa system a very convenient way of paying their bills. All responses averaged above the agreement score of 4.00 and had very small variations among them. Key responses observed include: customers find the system timely (M=4.26, SD = 0.628); the system is quite flexible (M=4.14, SD=0.590); the system allows payment of bills anytime of the day (M=4.13, SD = 0.549); and the system enables payment of bills even during weekends (M=4.12, SD=0.503).

4.4.5 Efficiency of Safaricom customers in Payment of Bills

Efficiency of Safaricom customers in payment of bills was conceptualized as the dependent variables in the present study. Analysis of the prevailing level of efficiency in payment of bills in the study area was assessed from two perspectives. First the study sought to identify bills that customers pay using the paybill system. Secondly, the study examined the levels of efficiency using identified indicators of efficiency.

4.4.5.1 Bills paid using the Mpesa Pay Bill System

Bills paid using Mpesa bill payment system were assessed and ranked according to the mean response scores of the respondents. Results of this assessment are shown in Table 4.10.

Table 4.10: Bills Paid Using Mpesa Bill Payment System Ranked by Order of Preference

Rank	Bills paid	Mean	Std. Deviation
1	payment of goods purchased	4.21	.651
2	payment of electricity bills	4.12	.587
3	payment of water bills	4.12	.637
4	payment of NSSF contributions	4.00	.431
5	payment of other services	3.99	.404
6	Payment of insurance premiums	3.93	.451
7	payment of NHIF contributions	3.79	.663
8	payment of school fees	3.72	.560

Source: Survey Data (2014)

Results show that seven major services are paid for using Mpesa bill payment system among Safaricom customers in the County. Ranked first among these services is payment of goods purchased (M=4.21, SD=0.651); this is followed by payment of electricity bills (M=4.12, SD = 0.587); payment of water bills (M=4.12, SD = 0.637); payment of NSSF contributions (M=4.00, SD=0.431); payment of other services (M=3.99, SD=0.404); payment of insurance premiums (M=3.93,SD=0.451); payment of NHIF contributions (M=3.79, SD = 0.663); and payment of school fees (M=3.72, SD = 0.560) in that order.

These results imply that the Mpesa bill payment system has been embraced by Safaricom customers in the County. Key services whose bills are paid through this system are goods purchased mainly from super markets and payment of electricity and water bills.

4.4.5.2 Respondents Perceived Efficiency in Payments of Bills

Having established perceived levels of the transaction cost, accessibility, security and convenience of the Mpesa bill payment system, it was necessary to find out how customers perceive efficiency in payment of bills using the Mpesa bill payment system. This was necessary since the study conceptualized direct relationships between these independent variables and the efficiency of customers in paying bills. Eight indicators, among them, non disconnection, timeliness, payment completion rate, frequency of payment, potential returns, and payment completion time were used to measure customer efficiency in payment of bills. Respondents were asked to indicate the extent to which they have complied with selected aspects of efficiency in payment of bills. Responses were elicited on a 5-point scale ranging from 1-very low to 5-very high. Results of this assessment are displayed in Table 4.11.

Table 4.11: Safari com Customers Perceived Levels of Efficiency in Payment of Bills

	Mean	Std. Deviation
I have maximized potential returns in terms of time and money saved	4.37	.518
My bill payment completion time has improved	4.30	.505
I make several payments of my bills on any day	4.23	.533
I have always paid my bills promptly	4.16	.393
My frequency of bill payment has gone up	4.16	.385
I have never forfeited any security deposits held for non payment	4.10	.473
I have a high bill payment completion rate	4.04	.403
I do not suffer any service disconnection due to non payment	3.79	.663

Source: Survey Data (2014)

Results reveal that safari com customers in Kisii County perceive themselves highly with regards with efficiency in paying their bills. They reported high extents in among others, maximizing potential returns in terms of time and money saved (M=4.37, SD = 0.518)'

improvement in bill payment completion time (M=4.30, SD = 0.505); making several bill payments on any day (M= 4.23, SD = 0.533); paying bills promptly (M=4.16, SD = 0.393); increasing the frequency of bill payment (M=4.16, SD = 0.385); and having high bill payment completion rate (M=4.04, SD = 0.403).

These results clearly portray that Safaricom customers in the study area have benefited in terms of bill payment as a result of the Mpesa bill payment system. They have seen reductions in service disconnections as a result of non-payment of bills. In addition, they have seen their frequency of bill payment go up leading to increased bill payment completion rate.

4.5 Hypotheses testing

Four hypotheses were formulated for the present study. Multiple regression analysis was used to test the hypotheses. First, results of the model summary presented in Table 4.12 revealed that the four independent variables (transaction cost, service accessibility, service security and service convenience) accounted for 78.5% of the variance in customer efficiency in payment of bills (adjusted R square value was 0.785).

Table 4.12: Model Multiple Regression Summary Output

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.895 ^a	.801	.785	.20834	1.715

a. Predictors: (Constant), Service Convenience, Service Security, Cost of Transaction, Service Accessibility

b. Dependent Variable: Efficiency in Bill Payment

Source: Survey Data (2014)

4.5.1 Testing the effect of Mpesa bill payment transaction cost on efficiency in payment of bills among Safaricom customers in Kisii County

Research Hypothesis **H₀₁** postulated a lack of influence of Mpesa bill payment transaction cost on customer's efficiency in paying their bills. Results of the multiple

regression coefficients presented in table 4.13 below show that the standardized coefficient for transaction cost was highly significant ($\beta=-0.235$, $p<0.01$). The hypothesis that transaction cost has no influence on customer's efficiency in payment of bills was therefore rejected.

Table 4.13 Multiple Regression Coefficients

Mode	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	3.227	.200		16.149	.000		
Cost of Transaction	-.124	.040	-.235	-3.081	.002	.681	1.469
Service Accessibility	.092	.040	.199	2.301	.022	.527	1.896
Service Security	.077	.037	.181	2.074	.039	.521	1.920
Service Convenience	.088	.044	.133	.017	.045	.906	1.104

Dependent Variable: Efficiency in Bill Payment

Source: Survey Data (2014)

These results indicate that Mpesa bill payment transaction cost has a negative influence on customer's efficiency in payment of bills. Consequently, a decrease of 1 standard deviation in bill payment transaction would result in a 0.235 standard deviations increase in customer efficiency in payment of bills. The implication of these results is that the lower transaction cost associated with the Mpesa bill payment acts as a motivating factor for customers to pay their bills using the Mpesa paybill system.

4.5.2 Testing the effect of Mpesa service accessibility on efficiency in payment of bills among Safaricom customers in Kisii County

Research hypothesis **Ho₂** posited that accessibility of Mpesa bill payment points has no effect on efficiency of payment of bills among Safaricom customers in Kisii County. Results in Table 4.13 revealed that accessibility of Mpesa bill payment points was a positive and significant predictor of customers efficiency in payment of bills ($\beta = 0.199$, $p < 0.05$). This implies that an increase of 1 standard deviation in accessibility of payment points was likely to result in an increase of 0.199 standard deviations in customers' efficiency in payment of bills. The implication of these results is that customers in Kisii County are comfortable paying their bills using the Mpesa paybill system since Mpesa pay points are easily accessible across the County.

4.5.3 Testing the Effect of Security of Mpesa bill payment system on efficiency of bill payment among Safaricom customers from Kisii County

Research hypothesis **Ho₃** posited that security of Mpesa bill payment system has no effect on efficiency of payment of bills among Safaricom customers from Kisii County. Results of the standardized coefficients presented in Table 4.13 revealed that security of the Mpesa service was a positive and significant predictor of efficiency of bill payment among safari com customers in Kisii County ($\beta = 0.181$, $p < 0.05$). The implication is that an increase of 1 standard deviation in security of the Mpesa bill payment system was likely to result in a 0.181 standard deviations increase in customer's efficiency in bill payment.

4.5.4 Testing the Effect of the convenience of the Mpesa bill payment on efficiency of payment of bills among Safaricom customers from Kisii County

Research hypothesis **H₀₄** postulated a lack of significant effect of convenience of bill payment on efficiency of payment of bills among Safaricom customers from the County. Results of the standardized coefficient for convenience revealed that service convenience is a positive and significant predictor of efficiency in payment of bills among Safaricom customers ($\beta=0.133$, $p<0.05$). The hypothesis that service convenience has no effect on efficiency in bill payment was therefore rejected. It was therefore concluded that service convenience has a direct effect on customer efficiency in bill payment where upon, an increase of 1 standard deviation in service convenience will result in an increase of 0.133 standard deviations in customer efficiency in bill payment.

4.6 Study Model

The study therefore established that customer's efficiency in payment of bills is a function of cost of transaction, accessibility of the service, security of the service and convenience of the service. The researcher therefore suggested the following multiple regression model for prediction of customer's efficiency in payment of bills.

Customer efficiency = -0.235 transaction cost + 0.199 accessibility of service + 0.181 security of service + 0.133 convenience of service focus strategy.

4.7 Discussion of the Findings

The study developed a conceptual model that investigates the relationship between Mpesa bill payment system and efficiency of Safaricom customers in paying their bills. In particular, the model examines the relationship between transaction cost and efficiency in bill payment, accessibility of payment services and efficiency in bill payment; security

of service and efficiency in bill payment; and convenience of service and efficiency in bill payment. Results of the study found statistical significant relationships between the components of Mpesa bill payment system and customers efficiency in paying their bills. In addition, the study contributes to existing knowledge by formulating a multiple regression model that shows how efficiency in bill payment among Safaricom customers is a function of transaction cost, accessibility security, and convenience of the function. These findings are discussed in detail in the following section.

4.7.1 M-pesa system transaction cost and customers bill payment efficiency

The decision to investigate the effect of M-pesa bill payment transaction cost on customers' efficiency in payment of bills in the present study was informed by the continued trend to examine transaction costs and ability to adopt the mobile platform. In one comprehensive review of low cost and remote transactions, USAID (2011), found that Mpesa had demonstrated the importance of building a low cost transactional platform that enables customers to meet a broad range of their payment needs. In line with this argument, Mas and Radcliffe (2010), contend that once a customer gets hooked to e-payment system, he/she can use this capability to pay bills and monthly insurance premiums among other uses. Consequently, the current study is consistent with the acceleration of these researches.

The study findings that customers agree with the relevance of the M-pesa bill payment system in minimizing costs that would have been spent while using other forms of financial transaction tends to support findings of other studies. Omwansa (2009), for example found that M-pesa transactions have succeeded in Kenya due to the impressive adoption of mobile phones, the need to access financial services, and more importantly,

the low cost associated with M-pesa transfers. In this regard, the author observes that using M-pesa to pay bills is much cheaper than using other modes of payment, including a bank account. In support of the notion of minimized transaction costs, Mallat (2010) adds that the cost of transaction has a direct influence on consumers if it is passed on to them. The findings that transaction costs have a significant and negative effect on customer efficiency in payment of bills tends to support findings of other studies. Jack and Suri (2010) for example found out that low cost, and the widespread unmet demand for financial services, as captured by low rates of bank access, means that mobile banking has the potential to reach remote corners of the socio-economic spectrum for which most parts of Kisii County lie. Within their study, it is significant to note that within only two years since inception, Mpesa had reached a number of the adult population. Thus the perceived lower cost of the M-pesa platform could be attributed to the large proportion of this market base.

4.7.2 Accessibility of the M-pesa system and efficiency in customer bill payment

The study postulated a lack of relationship between accessibility of the Mpesa bill payment system and customer efficiency in payment of bills. The study found out that the Mpesa service providers are spread all over the Country and even in the remotest of areas. This in essence makes the service to be easily accessible. In addition, the study found out that accessibility of Mpesa bill payment points was a positive and significant predictor of customer's efficiency in payment of bills. These findings were consistent with others. According to Kendall et al (2011), integrating with mobile money increases the density of access points and the ease to reach access points in new areas, transforming the geographic distribution of channels. Ng'ang'a and Mwachofi (2013) concur with the

need to access services. In their study on technology adoption and banking agency in rural Kenya, they found out that though a variety of mobile and agency banking services are on offer, it is only a small proportion of customers who access it and this constraints ability to adopt this particular technology.

4.7.3 Security of M-pesa system and efficiency in customer bill payment

The study hypothesized that security of the Mpesa bill payment system has no effect on customer's payment of bills. First, the descriptive results revealed that Safaricom customers drawn from the study area have confidence in the security of the Mpesa payment system. Further, the regression results revealed that security of the Mpesa bill payment was a positive and significant predictor of customer efficiency in paying bills.

The finding that security of the Mpesa bill payment was a positive and significant predictor of customer efficiency in paying bills reflects several other studies (Kayna& Harcar, 2005; Liao & Wong, 2007; Altintas & Gürsakal, 2007; Laforet & Li, 2005; Liao and Cheung, 2002; Sathye, 1999). According to these studies, security plays an important role in customers decion to adopt electronic banking services. In this regard, the more secure the customers perceive electronic banking to be, the more likely it is that they will adopt it. In support of these views, Liu and Arnett (1999) note that the need for secure transactions is critical to the success of not only Internet banking but that of any e-commerce related website.

These findings further support the findings by Polatoglu and Ekin, (2001). In observing that reliability, safety, and privacy are key components of security, these authors content that portrayal of these crucial factors goes a long way in encouraging customer adoption of the technology. In related studies, consumers' concerns about security, which arise

from the use of an open public network, have been emphasized as being the most important factor inhibiting the adoption and use of internet banking (Sathye, 1999; Daniel, 1999; Hamlet and Strube, 2000; Tan and Teo, 2000; Cox and Dale, 2001, Polatoglu and Ekin, 2001, Black et al., 2002, Giglio, 2002; Howcroft et al., 2002 Howcroft et al., 2002).

The findings in the current study in relation to the need for secure Mpesa payment system contributes to a plethora of existing studies on the same and underscores the importance of this factor to safari com customers in Kisii County. Besides the three factors of reliability, safety and privacy, several other security components are reported in extant literature. According to Shon & Swatman (1998), key requirements for secure financial transactions in electronic environment include confidentiality, data integrity, authentication, and non-repudiation. In addition, other security factors important for consumer adoption are anonymity and privacy, which relate to use policies of customers' personal information and purchase records (Jayawardhena & Foley, 1998; Shon & Swatman, 1998). Consequently, as noted by BCG (2011) a strong system must also be in place to manage liquidity and to guarantee security and the flow of cash.

4.7.4 Convenience of M-pesa system and efficiency in customer bill payment

The study posited that convenience of Mpesa bill payment has no significant effect on customer efficiency in payment of bills. Results of the descriptive analysis revealed that customers in Kisii County perceive the Mpesa system as a very convenient way of paying their bills. Besides, the regression analysis results revealed that service convenience is a positive and significant predictor of efficiency in payment of bills among Safaricom customers. These findings supported findings by others. According to Al-Adwan et al

(2013), convenience is the most important factor that attracts business customers to use M-payments. In line with this school of thought, the mobile payment system eliminates the inconvenience of carrying multiple cards in a physical Wallet (Hayashi Funuko, 2012) observes that conveniences of the money transfer technology plus its accessibility, cost and security factors are related to behavioural intention to use the mobile services. This tends credence to the acceptability of the Mpesa service by customers in Kisii County.

CHAPTER FIVE

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section presents conclusions drawn from the findings and the final section provides implications and recommendations of the study.

5.2 Summary of Findings

It was found that transaction costs have an effect on customer efficiency in payment of bills. It's evident that the M-pesa bill payment system has reduced transaction costs for customers. This is the case where a customer was to use another mode of paying a bill such as cheques and standing orders. It was also established that because the M-Pesa platform is easily accessible, it has determined customer's efficiency in payment of bills. Regarding the security of M-Pesa bill payment system, it was found that that security of the system was paramount to the customer more customers are likely to adopt the M-Pesa bill payment system if they perceive it to be secure. Concerning the convenience of M-pesa bill payment, the study established that the system is a convenient method of paying bills and is an important factor in determining the use of M-Pesa bill payment in settling various bills.

5.3 Conclusions

The most important finding of the study is the empirical evidence about existence of statistically significant relationship between M-pesa bill payment system and customers efficiency in payment of bills. Consequently, the study reveals that M-pesa bill payment system has the potential to boost customers' efficiency in paying their bills. From the

findings of this study, it was concluded that M-Pesa bill payment cost is central to the proportion of people using the Safaricom platform in paying their bills and accessibility of the M-pesa bill payment system acts as a motivator for customers to pay their bills using this platform. Also, perceived security of the M-pesa system with its unique pin codes acts as an incentive to use the system and the convenience of the system allows payment of bills thus playing a great role in the determination of bill payment efficiency .

5.4 Recommendations

In view of the conclusion made above, the following recommendations are made

5.4.1 Recommendations for theory and practice

- i. Transaction costs should regularly be revised with a view to maintaining them at affordable levels so that customers can continue enjoying the Mpesa payment system which is affordable for them.
- ii. Financial incentives are used by the service provider so as to encourage more people to provide the service and hence continue making the service accessible to as many customers as is possible.
- iii. That security of the service is made paramount so as to lock out con men that tend to target illiterate and old customers.
- iv. That several service providers adopt the Mpesa bill payment system so that customers can have the convenience of paying all their bills using this system.

5.4.2 Recommendations for future research

- a) The current study did not put into consideration the several extraneous variables that could contribute to efficiency of customers in payment of bills. It is recommended that a similar study be conducted to check for the moderating influence of customers

socio-economic characteristics on the relationship between the bill payment system and efficiency in payment of bills.

- b) The context of the current study is such that the findings could be low on external validity. In order to improve on external validity in terms of generalization of the study findings, it is recommended that similar studies be replicated in other Counties across the Country.

REFERENCES

- AL-Adwan, M.M, AL-Zyood, M and Ishfaq, M. (2013). The Impact of Electronic Payment on Saudi Banks Profitability: Case Study Of Sadad Payment System. *Ijrras 14 (1): 100- 113*
- Altintas, M. H., and Gürsakal, N. (2007), Phishing Attacks and perceptions of Service Quality: A Content Analysis of Internet Banking in Turkey. *Journal of Internet Banking and Commerce*, 12 (2).
- Arnett, P (1999) .Exploring the factors associated with Web site success in the context of electronic commerce. *Information & Management*, 38, 23- 33.
- Aven, F., Parker, B., & McEvoy, G. (1993). Gender and attitudinal commitment to organizations: a metaanalysis. *Journal of Business Research* , 26, 49-61
- Bångens L and Söderberg, B. (2008), Mobile Banking –Financial Services for the Unbanked? ISBN: 978 - 91-85991-01-3, http://www.spidercenter.org/files/m-banking_study.pdf. Downloaded on 15th June 2014
- Begonha, D. B., Hoffman, A., & Melin, P. (2002). M-payments; hang up, try again. *Credit Card Management*, 15 (10), 40-44.
- Birch, D. & Young, M.A. (1997). Financial Services and the Internet- What Does Cyberspace Mean for Financial Services Industry? *Internet Research: Electronic Networking Applications and Policy*, 7(2), 120-128.
- Black, N.J., Lockett, A., Winklhofer, H., and McKechnie, S. (2002). Modelling consumer choice of distribution channels: an illustration from financial services. *The International Journal of Bank Marketing*, Vol. 20 No. 4, pp. 161-73.
- Board's Division of Consumer and Community Affairs (DCCA). Available at www.federalreserve.gov/publications/default.htm.
- Booz, Allen and Hamilton (1997). Internet banking: a global study of potential. Booz, Allen & Hamilton Inc., New York, NY
- Boston Consulting Group (2011). Winning after the storm. Global Payments 2011. Available at <http://www.bcg.com/documents/file71194.pdf>.
- Central Bank of Kenya (2000). Annual Report. Available at https://www.google.co.ke/?gws_rd=ssl#q=CBK+%282008%29+Report+on+Mobile+Banking. Downloaded on 2nd July 2014
- Central Bank of Kenya (CBK, 2011). Central Bank of Kenya 2010-2011 Annual Report channel. Chuttur M.Y. (2009). "Overview of the Technology Acceptance Model: Origins, Developments and Future Directions ," Indiana University, USA .Sprouts: *Working Papers on Information Systems* , 9(37). Available at <http://sprouts.aisnet.org/9-37>
- Committee on Payments and Settlements Systems (2012). Payment, clearing and settlement systems in the CPSS countries -Volume 2. Available on <http://www.bis.org/cpmi/publ/d105.pdf>.

- Communications Commission of Kenya (CCK, 2014). Quarterly Sector Statistics Report. Third Quarter of the Financial Year 2013/2014. Available on <http://www.ca.go.ke/images/downloads/STATISTICS/Sector%20Statistics%20Report%20Q3%202013-2014.pdf>.
- Coursaris, C., & Hassanein, K. (2002). Understanding m-commerce - a Consumer Centric Model. *Quarterly Journal of Electronic Commerce*, 3(3), 247-271.
- Coursaris, C., K. Hassanein, and M. Head (2003). "M-Commerce in Canada: An Interaction Framework for Wireless Privacy," *Canadian Journal of Administrative Sciences*, Vol. 20, No. 1: 54-73
- Cox, J., and Dale, B.C. (2001). Service quality and e-commerce: an exploratory analysis. *Managing Service Quality*, Vol. 11 No. 2, pp. 121-31.
- Dahlberg, T., Mallat, N., & Penttinen, E. (2002). Value of Electronic and Mobile Payment Solutions to Consumers - Results of a Focus Group Research (Working papers): Helsinki School of Economics
- Daniel, E. (1999). Provision of Electronic Banking in the UK and the Republic of Ireland. *The International Journal of Bank Marketing*, 17(2).
- Deakin, J., Aitken, M., Robbins, T., & Sahakian, B. (2004). Risk taking during decision-making in normal volunteers changes with age. *Journal of the International Neuropsychological Society*, 10 (04), 590-598
- Degu G, Tessema F. (2005). Biostatistics for Health Science Students: lecture note series.
The Carter Center 9EPHTI), Addis Ababa
- Deloitte (2013) Can you carry your money in your mobile? M-Banking & M-Payments: The Next Frontier. Available on http://www.deloitte.com/assets/Dcom-China/Local%20Assets/Documents/Industries/Financial%20services/cn_gfsi_canucarryyourmoneyinurmobile_040114.pdf.
- Dineshwar, R. and Steven, M. (2013). An Investigation on Mobile Banking Adoption and sage: A Case Study of Mauritius. *Proceedings of 3rd Asia-Pacific Business Research Conference 25 - 26 February 2013, Kuala Lumpur, Malaysia, ISBN: 978-1-922069-19-1*
- Donovan, K. (2011). Mobile Money in the Developing World: The Impact of M-PESA on Development, Freedom, and Domination. A Thesis Submitted in Partial Fulfillment of the Requirements for the Award of Honors in Science, Technology and International Affairs Edmund A. Walsh School of Foreign Service Georgetown University
- Eastin, M., 2002. Diffusion of e-commerce: an analysis of the adoption of four e-commerce activities. *Telematics and Informatics* 19 (3), 251–267.
- Federal Reserve Board (FRB, 2013). Consumers and Mobile Financial Services.
- Federal Reserve Survey (2012). Consumers and Mobile Financial Services. Available at <http://www.federalreserve.gov/econresdata/mobile-device-report-201203.pdf>.
Downloaded on 16th June 2014
- Fenech, T. (2002). Exploratory study into WAP (Wireless Application Protocol)

- Financial Sector Deepening (2009) Supporting the development of inclusive financial markets in Kenya. Available at http://www.fsdkenya.org/pdf_documents/10-07-12_Annual_Report_2009.pdf.
- Fowler, F.J (2002) Survey Research Methods. Sage Publications
- Freedman, C. (2000), Monetary Policy Implementation: Past, Present and Future. "Will Electronic Money Lead to the Eventual Demise of Central Banking?" *International Finance* , Vol.3, No.2, pp. 211-227
- Gazelle Aggarwal 7 Harminderkaur (2012). Mobile banking: A new paradigm shift in buying
- Gencer, M. (2011). "The Mobile Money Movement: Catalyst to Jumpstart Emerging Markets." *Innovations: Technology, Governance, Globalization*
- Gerrard, P., & Cunningham, J. B. (2003). The diffusion of Internet banking among Singapore consumers. *International Journal of Bank Marketing*, 21 (1), 16-28.
- Ghotbabadi, A.R., Baharun, R and Feiz, S. (2012). A Review Of Service Quality Models. 2nd International Conference On Management(2nd ICM 2012) Proceeding 11th - 12th June 2012. Holiday Villa Beach Resort & Spa, Langkawi Kedah, Malaysiaisbr: Available at [ww.intemationalconference.com](http://www.intemationalconference.com)
- Giglio, V. (2002). Privacy in the world of cyberbanking: emerging legal issues and how you are protected. *The Secured Lender*, March/April, pp. 48-60.
- Goyal, V., Pandey, U.S., Batra, S (2012). Mobile Banking in India: Practices, Challenges and Security Issues. *International Journal of Advanced Trends in Computer Science and Engineering. Volume 1, No.2, pp. 56-66*
- Gu, J.G., Lee, S.C. and Suh, Y.H. (2009). Determinants of behavioural intention to mobile banking. *Expert Systems with Applications: An International Journal*, 36, 11605-11616.
- Gupta, S. (2013). The Mobile Banking and Payment Revolution. The European Financial Review. Available at www.europeanfinancialreview.com.
- Haas, S., Plyler, M.P and Nagarajan, G (2010). Community-Level Economic Effects of M-PESA in Kenya: Initial Findings. Financial Services Assesment. Available on <http://www.fsassessment.umd.edu/publications/effects-mpesa-kenya.html>.
- Hair, J.F., Black, C. W., Babin, B. J., and Anderson, R. E. (2005). Multivariate Data Analysis. Sixth Edition. Pearson, Prentice Hall.
- Hamlet, C. and Strube, M. (2000), "Community banks go online", *ABA Banking Journal's 2000 White Paper/Banking on the Internet*, March, pp. 61-5.
- Hayashi Fumiko (2012). Mobile Payments: What's in It for Consumers? Federal Reserve Bank of Kansas City. Available on <http://testing.kansascityfed.org/publicat/econrev/pdf/12q1Hayashi.pdf>.
- Ibrahim, E., Joseph, M and Ibeh, K (2006). "Customers' perception of electronic service delivery in the UK retail banking sector," *International Journal of Bank Marketing*, vol. 24, pp.475-493, 2006.

- Iddris, F. (2013). Barriers to Adoption of Mobile banking: Evidence from Ghana. *International Journal of Academic Research in Business and Social Sciences*, Vol.3 No.7, pp. 356-370
- Inam, T And Islam, B (2012). Possibilities And Challenges Of Mobile Banking: A Case Study In Bangladesh. *International Journal of Advanced Computational Engineering and Networking*, Volume- 1, Issue- 3, pp. 20-24
- International telecommunication Union, (ITU, 2011). Downloaded from www.itu.int/ITUUD/
- Ivatury, G. (2006). *Using Technology to Build Inclusive Financial Systems*. Focus Note No. 3 Washington, D.C.:CGAP
- Jack, W. and Suri, T (2010). The economics of M-Pesa. Available at <http://www.fsassessment.umd.edu/publications/effects-mpesa-kenya.html>.
- Jayawardhena, C. and P. Foley (1998). "Overcoming constraints on electronic commerce: Internet payment systems." *Journal of General Management* 24 (2): 19-35.
- Jeong, B.-K., & Yoon, T. E. (2013). An Empirical Investigation on Consumer Acceptance of Mobile Banking Services. *Business and Management Research*, 2(1), 31-40.
- Joppe, M. (2000). The Research Process. Available on <http://www.ryerson.ca/~mjoppe/rp.htm>.
- Karjaluoto, H., Koivumaki, T., and Salo, J. (2003), Individual differences in private banking: empirical evidence from Finland. Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS), Big Island, Hawaii. Available at <http://www.mcser.org/journal/index.php/jesr/article/viewFile/3536/3477>.
- Kaynak, E. and Harcar, T. D. (2005). Consumer attitudes towards online banking: a new strategic marketing medium for commercial banks. *Int. J. Technology Marketing* 1 (1), 62-78.
- Kendall, J., Machoka P., Veniard C., & Maurer B. (2011) An Emerging Platform: From Money Transfer System to Mobile Money Ecosystem. Available at: <http://ssrn.com/abstract=1830704>.
- Kleijnen, M., Wetzels, M., & de Ruyter, K.(2004). Consumer acceptance of wireless finance. *Journal of Financial Services Marketing*, 8 (3), 206-217
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques* (2nd Ed.). New Delhi: New Age International limited.
- Kuisma, T., Laukkanen, T., Hiltunen, M., 2007. Mapping the reasons for resistance to Internet banking: A means-end approach. *International Journal of Information Management* 27 (2), 75–85.
- Laukkanen, T., & Lauronen, J. (2005). Consumer value creation in mobile banking services. *International Journal of Mobile Communications*, 3 (4), 325 - 338.

- Liao, Z. and Cheung, M.T. (2002). Internet - based E - Banking and Consumer Attitudes: An Empirical Study. *Information and Management* , Vol. 39, pp. 283 –295.
- Liao, Z., and Wong, W.K. (2007). The determinants of customer interactions with internet-enabled e-banking services, National University of Singapore. Department of Economics, Working paper, No. 0701, Available: <http://nt2.fas.nus.edu.sg/ecs/pub/wp/wp0701.pdf> (14th June 2014)
- Liu, C. and Arnett, K. (2000). Exploring the factors associated with Web site success in the context of electronic commerce. *Information & Management*, vol. 38, pp. 23-34.
- Luarn, P. and H. H. Lin, (2005). Toward an understanding of the behavioral intention to use mobile banking, *Computers I Human Behavior* , Vol. 21 :873-891
- M. Alafeef, D. Singh and K. Ahmad, “Influence of Demographic Factors on the Adoption Level of Mobile Banking Application in Jordan,” *Journal of Applied Sciences*, Vol. 6, No. 6, 2011, pp. 373-377
- Mallat, N. (2006). Exploring Consumer Adoption of Mobile Payments -A Qualitative Study.
- Mallat, N. (2007). “Exploring Consumer adoption of Mobile Payments- A Qualitative Study” *The Journal of Strategic Information Systems*, 16 (4), 413-432.
- Mallat, N., Dahlberg, T., Saarinen, T., & Tuunainen, V. K. (2001). Efficient Service Production And Consumer Choice Of Delivery Channels. Paper presented at the 14th Bled Electronic Commerce Conference, Bled, Slovenia
- Mas and Radcliffe (2010), Mobile Payments go Viral:M-Pesa in Kenya. Available at worldbank.org/AFRICAEXT/Resources/258643-1271798012256/M-PESA_Kenya.
- Mazhar, N. (2006, May 21). Technology Acceptance Model. Retrieved November 30, 2013, from [http://ezinearticles.com/?Technology Acceptance Model&id=202354](http://ezinearticles.com/?Technology+Acceptance+Model&id=202354)
- Mbiti and I. and Weil, D.N (2011). Mobile Banking: The Impact Of M-Pesa In Kenya. *National Bureau Of Economic Research Working Paper 17129*.
- Mbogo, M. (2010). The Impact of Mobile Payments on the Success and Growth of Micro-Business: The Case of M-Pesa in Kenya. *The Journal of Language, Technology & Entrepreneurship in Africa*, 2(1): 182-203
- Mols, Niels. (1998). The Behavioural Consequences of PC Banking. *International Journal of Bank Marketing*, 16, 5, pp. 195-201.
- Morawczynski, Olga and Mark Pickens. (2009). “Poor People Using Mobile Financial Services:
- Mulupi, D. (2011). Kenya: Taking Mobile Money a Step Further. Nairobi. Retrieved from www.audiencespace.org field blog. Retrieved: 7th May 2014.
- Munyange, M.M (2012). The Influence of The Provision of Mobile Money Transfer Service on The Socio-Economic Status of The Service Providers: Case of Nairobi Central Business District, Kenya. Unpublished Master of Arts Report, University of Nairobi, Kenya
- Nandhi, M. A. (2012). Effects of Mobile Banking on the Savings Practices of Low Income Users- The Indian Experience. IMTFI Working Paper. Institute for Money, Technology and Financial Inclusion
- Nganga, S.I. and Mwachofi, M.M. (2013). Technology Adoption and the Banking Agency in Rural Kenya. *Journal of Sociological Research* 4(1): 249-266

- Njenga, A.D.K. (2009). Mobile phone banking: Usage experiences in Kenya. Available at <http://www.bankablefrontier.com/assets/ee.mobil.banking.report.v3.1.pdf>.
- Nyangosi, R., Arora, J.S., and Singh, S. (2009). The evolution of e-banking: a study of India and Kenyan technology awareness. *International Journal of Electronic Finance* 3(2):149-165
- Observations on Customer Usage and Impact from M-PESA” CGAP Brief Online
- Okiro, K and Ndungu, J (2013). The Impact of Mobile and Internet Banking on Performance of Financial Institutions in Kenya. *European Scientific Journal* 9(13): 146-161
- Omwansa, T. (2009). “M-Pesa progress and prospects”: Innovations case discussion. <<http://www.strathmore.edu/pdf/innov-gsma-omwansa.pdf>.
- Oyal V., Pandey, U.S. and Batra, S (2012). Mobile Banking in India: Practices, Challenges and Security Issues. *International Journal of Advanced Trends in Computer Science and Engineering*. 1(2): 55-66
- Paper presented at the Helsinki Mobility Roundtable, Helsinki, Finland.
- Pegueros, V (2012). Security of Mobile Banking and Payments. SANS Institute InfoSec Reading Room. Available at http://news.cnet.com/8301-1009_3-57370650-83/google-now-scanning-androidapps-for-malware.
- Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of internet banking services. *International Journal of Bank Marketing*, 19 (4), 156
- Poon, W. C., “Users’ adoption of e-banking services: the Malaysian perspective,” *Journal of Business and Industrial Marketing*, Vol. 23, No. 1: 59-69, 2008.
- Porteous, D. (2006). The Enabling Environment For Mobile Banking In Africa. Report Commissioned By Department for International Development (DFID) USA
- Ramsay, J. and Smith, M., (1999) Managing Customer Channel Usage in the Australian Banking Sector. *Managerial Auditing Journal*, 14(7).
- Ruane, M.J. (2005) Essentials of Research Methods: A guide to social science research, Malden, MA. Blackwell Publishers
- Safaricom Annual Report and Group Accounts (2012). Available at http://www.safaricom.co.ke/safaricom_annual_report/pdfs/Safaricom_Annual_Report.pdf.
- Sathye, M. (1999). Adoption of Internet banking by Australian consumers: an empirical investigation. *International Journal of Bank Marketing*, Vol. 17 No. 7, pp. 324-34.
- Sayid, O., Echchabi, A. and Aziz, H. A. (2012). Investigating Mobile Money Acceptance in Somalia: *An Empirical Study*, *Pak. J. Commer. Soc. Sci.* 6 (2): 269-281
- Seth, N., Deshmukh, S. G., & Vrat, P. (2005). Service quality models: a review. *International Journal of Quality & Reliability Management*, 22(9):913-94
- Shevlin, R., Bezar, G and Fishman, J (2011). The Impact of Mobile Banking: A Case for Mobile Marketing. Aite Group LLC. Available at http://news.cnet.com/8301-1009_357370650-83/google-now-scanning-androidapps-for-malware.
- Shon, T.-H., & Swatman, P. M. C. (1998). Identifying effectiveness criteria for Internet payment systems. *Internet Research*, 8 (3), 202-218.

- Siau, K., Sheng, H., and Nah, F. (2004) The value of mobile commerce to customers, Proceedings of the Third Annual Workshop on HCI Research in MIS, Washington, DC, 65-69.
- Smartcard Alliance (2011). The Mobile Payments and NFC Landscape: A U.S. Perspective. A Smart Card Alliance Payments Council White Paper. Available on http://www.smartcardalliance.org/resources/pdf/Mobile_Payments_White_Paper_091611.pdf.
- Sohel Ahmed, S.M., Rayhan, S.J., Ariful Islam, M.D. and Mahjabin, S (2011). Problems and prospects of mobile banking in Bangladesh. *Journal of Information Engineering and Applications* 1(6):54-69
- Stevens, J. P. (2002). Outliers and influential data points in regression analysis. *Psychological Bulletin*
- Synergistics Research Corporation (2011), Mobile Payments Consumer Viewpoint. Available on [tps://www.bostonfed.org/bankinfo/payment-strategies/publications/2012/opportunities-and-challenges-to-broad-acceptance-of-mobile-payments.pdf](https://www.bostonfed.org/bankinfo/payment-strategies/publications/2012/opportunities-and-challenges-to-broad-acceptance-of-mobile-payments.pdf). Downloaded on 19th August 2014
- Tan, M., and Teo, T.S.H. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for information Systems*, 1 (5) : 1-42.
- Tavilla E., (2012) Opportunities and Challenges to Broad Acceptance of Mobile Payments in the United States. Federal Reserve Bank of Boston. Available at <https://www.bostonfed.org/bankinfo/payment-strategies/publications/2012/opportunities-and-challenges-to-broad-acceptance-of-mobile-payments.pdf>.
- Technology Acceptance. (2005), *Information Systems Research*, 16 (1), 85-102
- Thornton, J., & White, L. (2001). Customer orientations and usage of financial distribution channels. *Journal of Services Marketing* ,15 (3), 168–185
- Thorton Consulting (1996). Internet Banking: A Success. *Australian Banking and Finance*, (July), 5(13), 2.
- United States Agency for International Development (2011). Better Than Cash: Kenya Mobile Money Market Assessment: Available at <http://nethope.org/assets/uploads/Kenya-Mobile-Money-Assessment.pdf>.
- United States Agency for International Development (2013). Forward Progress Report 2013. Available on <http://www.usaid.gov/sites/default/files/documents/1868/2013-usaid-forward-report.pdf>.
- Venkatesh, V. Morris; M,D Davis; G., and Davis, F. (2003). User Acceptance of Information Technology: towards a unified view. *MIS Quarterly*, 27 (3) 479-501
- Walls Report (1997). The Financial System Inquiry Final Report, AGPS, Canberra.
- Wang, Y. S., Y. M. Wang, H. H. Lin, and T. I. Tang (2003) ,“Determinants of user acceptance of Internet banking: an empirical study ,” *International Journal of Service Industry Management* , Vol. 14, No.5 :501 -519
- Wixom Barbara H. and Todd A. Peter (2005). A Theoretical Integration of User Satisfaction
- Zimbabwe Independent (2011). “Econet’s EcoCash versus Kenya’s M-Pesa,” October 20, 2011.

APPENDICES**Appendix I: Introduction Letter**

Lucy Nyakeyo O,
Rongo University College,
Box 103-40404, Rongo
30th June 2014

Dear Respondent,

I am a student of Master of Business Management at Rongo University College and is currently undertaking a study on “Effectes of M-Pesa Bill Payment System on Bill Payment Efficiency”. The aim of the study is to gain deeper understanding on this mode of bill payment. This questionnaire is the basis of the data that I require to complete the study. I request you to honestly answer the questions in order to have accurate and more representing results.

Kindly note that all the answers will be treated with confidence and will be used only for the purpose of this study, without any reference of your identity to other respondents

Thank You,

Lucy O. Nyakeyo,
MBM/1007/12

Appendix II: Questionnaire**EFFECTS OF SAFARICOM M-PESA SYSTEM ON EFFICIENCY OF
CUSTOMER BILL PAYMENT IN KISII COUNTY****Instructions:**

Thank you for accepting to participate in this research. Please tick only a single response for each question. The information will only be used for this research only and will be treated with utmost confidence.

1. Please indicate your gender:
Male [] Female []
2. Please indicate your age:
Less than 30 yrs []
31-50 yrs []
Over 50 yrs []
3. Please indicate your level of education:
4. Please indicate your level of education:
Upto Secondary []
Certificate/Diploma []
Undergraduate []
Postgraduate []
5. What form of employment are you engaged in?
Formal [] Informal []

6. By placing a tick in the appropriate box, please indicate the extent to which you use your M-Pesa to pay the following bills

	Very high Extent 5	High Extent 4	Moderate Extent 3	Low Extent 2	Very Low Extent 1
Paying insurance premiums					
Paying water bills					
Paying electricity bills					
Paying bus fare					
Sending NSSF contributions					
Receiving salary from employer					
Paying company bills					
Paying for goods in retail outlets					
Paying school fees					
Paying satellite TV subscriptions					
Buying airtime to mobile phone					
Paying loans					

7. By placing a tick in the appropriate box, please indicate the extent to which you agree with the following statements concerning M-Pesa Bill Payment

	Very high Extent5	High Extent 4	Moderate Extent 3	Low Extent 2	Very Low Extent1
Has reduced travelling costs					
Saves time of travelling					
Saves time of queuing					
Can be sent any time of day					
Has led to creation of jobs for M-Pesa agents					
Has led to additional income to M-Pesa agents					
Has reduced the risk of money being stolen					
Provides evident of payment to another person					
Has provided a platform for saving for rural unbanked people					
Reduces paperwork involved when sending money through other modes					

8. By placing a tick in the appropriate box, please indicate the extent to which you encounter the following problems when paying bills by M-Pesa

	Very high Extent 5	High Extent 4	Moderate Extent 3	Low Extent 2	Very Low Extent 1
No network					
High cost of transaction					
Remittances lost/undetected					
Remittances delay					

9. Please indicate whether you undertake the following activities using your mobile

Activity	Yes	No
Checked an Account Balance or Checked Recent Transactions		
Transferred money between two accounts		
Downloaded your bank's mobile bank application		
Received a text message alert from your bank		
Made a bill payment using your bank's website or application		
Receive salary alerts		
Receive withdrawal/deposit alerts		

OBJECTIVE 1: Effect of M-Pesa system transaction cost on bill payment efficiency

10. By placing a tick in the most appropriate box, please indicate the extent to which you agree with the following statements concerning bill payment through M-Pesa

	Strongly Agree 5	Agree 4	Not sure 3	Disagree 2	Strongly Disagree 1
It is cheaper to send money through M-Pesa than other modes of payment					
Sending money by M-Pesa saves transportation costs to banks					
M-Pesa promotes my savings habits					
Saving by M-Pesa saves					

OBJECTIVE 2: Effect of accessibility of M-Pesa system on customer bill Payment efficiency

11. By placing a tick in the most appropriate box, please indicate the extent to which you agree with the following statements concerning bill payment through M-Pesa

	Strongly Agree 5	Agree 4	Not sure 3	Disagree 2	Strongly Disagree 1
I can pay my bills from any place of the country					
I can make bill payment without going to the pay-point offices					
I pay my bills at any time of the day					
I can access M-Pesa agents even in remote areas to credit my account					

OBJECTIVE 3: Effect of Security of M-Pesa system on customer bill payment efficiency

Do you share your phone with someone else?

Yes []

No []

12. Have you ever disclosed you M-Pesa PIN to someone else?

Yes []

No []

13. By placing a tick in the most appropriate box, please indicate the extent to which you agree with the following statements concerning bill payment through M-Pesa

	Strongly Agree 5	Agree 4	Not sure 3	Disagree 2	Strongly Disagree 1
It is easy for someone to know my M-Pesa PIN without my consent					
I can safely pay my bills for my accounts without losing the money					
Paying bills by M-Pesa is saver than carrying money to go and pay at offices					
My money cannot be stolen from my money even if I lose my					

phone					
Sometimes my bill payment is erroneously credited in a different account by the M-Pesa service provider					

OBJECTIVE 4: Effect of Convenience of M-Pesa system on customer bill payment efficiency

12. By placing a tick in the most appropriate box, please indicate the extent to which you agree with the following statements concerning bill payment through M-Pesa

	Strongly Agree 5	Agree 4	Not sure 3	Disagree 2	Strongly Disagree 1
I can pay bills through M-Pesa at any time of the day					
I can pay bills through M-Pesa even after offices have closed					
I can pay bills by M-Pesa even during holidays and weekends					
I do not have to walk long distances to pay my bills through M-pesa					