CONSUMER INTENTION AND USE OF MOBILE PAYMENT SERVICES IN KENYA

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

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DECLARATION

This thesis is my original work and has not been presented for a degree award to any other University

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DEDICATION

This thesis is dedicated to my wife Roselyn Wambui for her support and encouragement during the entire duration of the course. Further dedication is to my parents Frances and Bernice Kabata for their sacrifice in educating me and showing me the value of education in my youthful years. I also dedicate it to my younger sister Dr Faith Kabata for the moral support and encouragement that she gave me during this period. Lastly, I dedicate this study to my sons Micheal Kabata and Derrick Gitau. This thesis will be a source of inspiration for hard work in their future.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

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DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Table of Contents

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

List of Figures

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

List of Tables

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

ABBREVIATIONS AND ACRONYMS

ATB: attitude behavior

ATMs: Automated Teller Machines

B2B: Business to Business

B2C: Business to Consumer

CAK: Communication Commission of Kenya

C2C: Consumer to Consumer

DIT: Diffusion of Innovation Theory

DOI: Diffusion of Innovation

E-commerce: Electronic commerce

GCI: Global competitiveness index

GDP: Gross domestic product

GCR: Global competitive Report

GITR: Global Information Technology Report

GSMA: Global specialist mobile association

I. C. T: Information communication Technology

PDAs: Personal digital assistant

PE: perceived enjoyment

PU: perceived usefulness

PEOU: perceived ease of use

NI: Networked Index

M-payment: mobile payment

M-commerce: mobile commerce

SADC: southern Africa Development Community

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

SEM: Structural equation modeling

SI: Social influence

SN: Subjective norm

SSA: Sub Saharan Africa

SPSS: Statistical package for social science

TRA: Theory of reasoned action

TPB: theory of planned behavior

TAM: Technology acceptance model

TOE: Technological Organizational Environmental Model

UTAUT: Unified theory of acceptance and use of technology

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

ABSTRACT

The problem in this study was that despite clear evidence from the literature that actual technology usage is a critical stage in the adoption process; drivers influencing mobile payment use remain under-researched in Kenya. In this study Consumer behavior intention was conceptualized as a predictor of actual use of mobile payment services in Kenya as evidenced from the literature.

The study was guided by the following specific objectives; determine the influence of extrinsic and intrinsic motivation factors on consumer intention to use mobile payment services in Kenya; determine the influence of demographic factors (gender and education level) on consumer intention to use mobile payment services. Assess the influence of consumer behavior intention to use mobile payment services and actual behavior use. Grounded on the unified theory of acceptance and usage of technology (UTAUT), eight hypotheses were tested in the study by modifying UTAUT to accommodate perceived enjoyment and test demographic factors influence in a direct relationship rather than control variables as tested in the original theory.

A descriptive cross- sectional survey was carried out and the population of the study was all the 26m subscribers of mobile payment services in Kenya as at December 2014. A sample of 680 respondents was selected using stratified random sampling. Primary data was collected using a questionnaire that was administered to the consumers visiting customer care centers of the three major mobile companies (Safaricom, Airtel and Orange) situated in Nairobi, Mombasa, Nakuru and Eldoret realizing a response rate of 77%. Data analysis was carried out using Statistical Package for Social Sciences (SPSS) where descriptive statistic, Factor analyses, reliability testing, t test, ANOVA and multiple regressions were undertaken to test the hypothesis.

P- Value statistic was used as method of testing the hypothesis where the study findings revealed that significant factors included; perceived usefulness, perceived ease of use, perceived enjoyment and education level while gender , social norms and social image were not significant. In addition a significant difference was established among the genders where perceived enjoyment was found to influence more women than men. The study also found out that consumer behavior intention significantly influenced the actual behavior to use mobile payment services. Coefficient of determination R^2 of 0.43 implied that at 95% confidence level, 43% of the variation of consumer intention to use mobile payment can be explained by the factors included in the study. Lastly, Perceived usefulness had the strongest influence on consumer behavior intention to use mobile payment services in Kenya.

This study contributes to theory by developing and empirically testing a modified unified theory of acceptance and use of technology (UTAUT) of testing consumer behavior intention drivers and actual use of mobile payment services in Kenya. The result confirms the effectiveness of UTAUT framework for conducting studies in actual mobile technology usage at individual level. The study also extends the body of knowledge by establishing that both intrinsic and extrinsic motivation factors influence consumer intention to use of mobile payment services in Kenya and intrinsic factors had the strongest influence. More over the study also establishes gender difference where perceived enjoyment had a stronger influence on women than Men. This is important information to the developers and marketer of the mobile innovations in Kenya and also at the global level where mobile payment services are still at the introductory stage.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

CHAPTER ONE

1.1 Background of the study

The emergence and use of Information &Communication Technology (ICT) applications such as the internet has not only changed the way business is carried out, but also opened up opportunities which have enhanced efficiency and effectiveness of firms and individuals globally (Victoria, Laura, & Yolanda, 2012). Today e-commerce continues to be ranked highly as an ICT applications which is a sources of new opportunities needed to promote innovation and enhance economic and social prosperity in both developed and developing economy (Benat, Crotti, & Dutta, 2014).

Driven by wireless mobile technologies advancement and continuous development of innovative devices such as smart phones and tablets, Mobile commerce has emerged as one of the fastest growing e-commerce model attracting the attention of both researchers and practitioners globally and also creating applications that are changing the way financial services are provided to consumers (Chemingui & lallouna, 2013). Studies carried out recently are in agreement that m-commerce has the potential to surpass the success of e-commerce with the adoption of cellular phones estimated to have hit a 3.6 billion by the end of 2014 worldwide (Zeng & Ma, 2015).

Unlike e-commerce where the connectivity is through internet, M-commerce is connected through wireless devices such as mobile phones which are portable and less expensive (Wei,Marthandan, & Chong, 2009). According to Chan & Chong (2013), M-commerce offers opportunities in internet access without geographical limitations as well as personalized and

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

location based services to both consumers and organizations. In addition, Chaffey (2009) illustrated five benefits that mobile or wireless connections offer to users which include; ubiquity, where information can be accessed from anywhere at any location and time. Reachability, where is available outside their normal time. Convenience, where the consumer need no fixed connection and fixed power supply for the device to operate. Security, where each user can be authenticated since each wireless device has a unique identification code enabling the commerce provider to tailor content based on the customer's location.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

According to (CAK) 2014 it is self-evident that in the last twenty years or so, many people, educated and uneducated have adopted the available technology aggressively in Kenya. The use of mobile money transfer has been rising since its inception in 2007 and in addition, money transfer from cell phones and wireless technology has accelerated to the highest level ever seen in the continent (GSMA, 2015). The number of mobile subscribers in Kenya has grown to an estimated figure of approximately 30 million with 99% of the internet access being via mobile phones (CAK, 2014). Moreover, it is estimated that money transfer subscribers have hit approximately 26m while the total money deposited via mobile phones grew to 1.5 trillion quarterly by mid of 2015.

Several aspect of research such as, the need to understand the main drivers behind high acceptance and usage of these mobile payment services emerge from this observation. Furthermore, major influence of motivational factors on the acceptance and use of mobile based innovations have not been investigated. As more people become used to the technology, there is need to know the factors that contribute to the usage of innovative IT. Such understanding can help improve production of workers because IT should be adopted prior to realizing its anticipated benefits.

The implementation and use of technology innovations depends on many factors, Chan & Chong (2013) postulates that motivation factors such as subjective norm, image, perceived ease of use and perceived usefulness as the enabler of successful implementation and use of IT. This study adds some other variables which we think are also important and not limited to what has been suggested by other researchers such as Venkatesh & Davis (2000).

In this study the researcher will add some demographic factors which argue that perceptions are likely to influence opinions, information and salient others. For example Education and gender could influence opinion and behavior of others because of pressure. As previous studies have shown that consumer behavior intention to use a given technology can be used to predict acceptance and actual use of that technology Venkatesh & Davis (2000), this study will adopt consumer behavior intentions as a predictor of actual use of mobile payment services.

The study will be divided into three major sections. First, problems in the area of motivation factors are discussed in light of knowledge Management and IT adoption. The importance of understanding the different kinds of motivations and their impact on consumer intention to use mobile payment services will be discussed as it relates to sharing both explicit and tacit knowledge as well as the impact of IT adoption. The second section will provide a model of the study and hypotheses. In this section some questions will be asked and possible answers will be given. The third section introduces research methodology, data collection and analysis while the fourth and fifth section will analyze the findings of the study and its implications and finally the recommendations.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.1.1 Mobile – payment

The growth of mobile wireless communication technology has brought with it a new dimension of doing business globally (Zeng & Ma, 2015). Being a relatively new concept, there is no universal definition of M-commerce and different authors have defined it depending on their point of view, background and specialization. For instance Chan & Chong (2013) defined m-commerce as exchange or buying and selling of goods and services through wireless handled devices such as a cellular telephones and personal digital assistant (PDAs). While others such as Ngai & Gunasekaran (2007) defined m-commerce as an extension of e-commerce, they argue that M-commerce is more than an extension of E-commerce based on the interaction style, usage patterns and value chains. Tiwari & Buse (2007) defined m-commerce as any transaction involving the transfer of ownership and or rights to use goods and services, which is initiated and completed by using mobiles access to computer mediated networks with the help of mobile devices.

Though m-commerce is a relatively wide concept, Hwang (2009) stated that without the transaction of monetary value, m-commerce cannot be achieved hence existence of three ways in which the transaction of monetary value can be achieved; First, by billing systems of mobile carriers referred to as carrier based transaction; second, the transaction being a direct monetary transaction between accounts or the bill payments; and lastly m-commerce transactions can use credit card information stored in mobile devices.

M-payment services are therefore defined as any payment made through mobile devices such as cellular phone or personal digital assistant (PDA) (Teoh, Chong, & Lin, 2014). According to Hwang (2009), what makes m-payment unique is that these payments can be carried out without

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

the intervention of the established banking systems meaning that even the mobile operators have an opportunity to extend their services to finance sector. Pousttchi & Wiedemann (2014) defined m-payment as a type of payment transactions within an electronic procedure where the user uses mobile communication methods together with mobile devices for initiation, authorization and completion of the payment.

Recent statistics from Mobile Payments Readiness Index (2015) show that mobile phones should have established itself as a successful mode of payment globally by now but this has been hindered by absence of large consumer acceptance preventing the market from breaking even. This study therefore investigates and models the consumer intention and user perception factors that influence the decision to use mobile payment services in Kenya.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.1.2 Technology usage

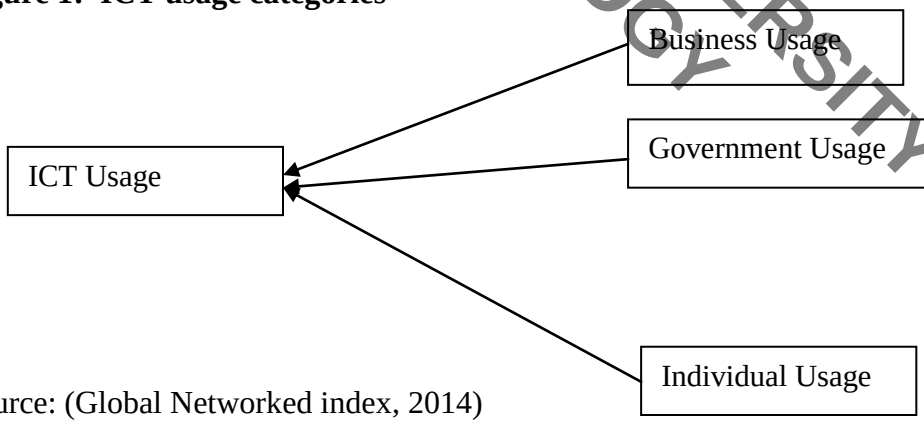
Ever since Carr (2003) authored an article suggesting that IT does not matter in firm performance, the relationship between IT usage and performance has become an area of interest to both the academia and practitioners. Researchers globally have continued undertaking studies showing what drives technology usage and why this stage in adoption process should not be ignored (Zhu & Kraemer, 2005). For instance, based on the Mobile Payments Readiness Index (2015), the capability of the market to develop mobile payment does not matter if the consumers are not willing and ready to use the technology.

There is no universal definition of technology usage and various researchers have defined it depending on their point of view, background and specialization. For instance, Salwani (2009) defined E-commerce usage as the extent to which e-commerce applications are used to conduct

business activities across the various value chain processes. Zhu & Kraemer (2005) defined e-business use as the extent to which e-business is being used to conduct activities across the value chain processes while Benat et al. (2014), first divided ICT usage into three categories which included; individual usage, business usage and government usage. Individual usage measures ICT penetration and diffusion on an individual perspective and it is measured by individual use of the internet, availability of computers by house hold and access to internet by households. Business usage measures the extent of business internet use as well as the effort of the firms to integrate ICT into its internal environment that generates output gains. Government usage provides insight in to the importance that the government places on carrying out ICT polices for competitiveness and implementation of their vision for ICT development. The study will focus on the individual usage of ICT as defined by Benat et al. (2014) world networked index . Figure (1.1) shows the categorizing of ICT usage as documented by Global Information Technology Report (GITR).

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Figure 1: ICT usage categories



Source: (Global Networked index, 2014)

1.2 Problem statement

This study sought to investigate the drivers that influence consumer intention and use of mobile payment services in Kenya. While it's clear from the literature that actual technology use is a critical stage in technology adoption process, drivers influencing consumer intention to use mobile payment services remain under-researched in Kenya, while its influence on actual mobile payment use has not been established for two main reasons. Firstly, much of existing literature has focused on adoption decisions despite clear evidence that technology adoption is a multiple stage process and not dichotomous. Secondly, theories developed and opinions given are tested and expressed with first world economies in mind despite clear evidence that technology usage is moderated by the local environment.

A review of recent statistics shows that while Kenya is ranked as the global leader in consumer readiness to use mobile payment services by the Mobile Payments Readiness Index (2015), majority of the countries in developed and emerging markets continue to struggle with mobile payment diffusion despite its documented benefits. For instance while Kenya's consumer mobile payment average use is rated at 40.1 (68%), the global average remains low at 31.3 or (51%). However, even with the high consumer readiness the overall use of mobile-commerce applications in Kenya remains low at 22% revealing a huge disparity.

With more than 3.6 billion people owning mobile phone worldwide and recent statistics revealing that 50% of all equipment spending in firms globally is in IT equipments and software, firms desperately need empirical evidence that will help them understand the drivers that influence success in mobile technology diffusion in order to bridge the digital divide gap, create value and achieve a competitive edge. In view of this gap in literature, key issues investigated in this study includes

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

demographic and motivational factors influencing consumer intention to use mobile payment service in Kenya and the influence of the consumer behavior intention on actual mobile payment usage.

1.3 Research Objective

This section outlines the objectives that the study addressed.

1.3.1 General objective

This study sought to investigate the drivers influencing consumer intention and use of mobile payment services in Kenya.

1.3.2 Specific objective

Specifically, this study addressed the following objectives:

i. Determine whether extrinsic motivation factors (social influence and perceived usefulness) influence consumer behavior intention to use m-payment service in Kenya.
ii. Determine whether intrinsic motivation factors (perceived ease of use and perceived enjoyment) influence consumer behavior intention to use m-payment services in Kenya
iii. Determine whether demographic factors (education and gender) influence consumer behavior intention to use m-payment services in Kenya.
iv. access the influence of consumer behavior intention to use m-payment on the actual usage of mobile payment services in Kenya

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.4 Research Questions

The study sought to address the following questions:

i. What drives consumer behavior intention to use mobile payment service in Kenya?

ii. Does consumer behavior intention influence actual use of mobile payment services in Kenya?

1.5 Hypothesis

Based on the above objective of the study, the following hypotheses were developed:

Hypothesis 1

H1A: social norm has a significant influence on consumer behavior intention to use Mobile payment services in Kenya.

Hypothesis 2

H2A: social image has a significant influence on consumer behavior intention to use Mobile payment services in Kenya.

Hypothesis 3

H3A: Perceived usefulness has a significant influence on consumer behavior intention to use Mobile payment in Kenya.

Hypothesis 4

H4A: Education level has a significant influence on consumer behavior intention to use Mobile payment services in Kenya.

Hypothesis 5

H5A: Gender has a significant influence on consumer behavior intention to use Mobile payment in Kenya.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Hypothesis 6

H6A: Perceived ease of use has a significant influence on consumer behavior intention to use Mobile payment services in Kenya.

Hypothesis 7

H7A: Perceived enjoyment has a significant influence on consumer behavior intention to use Mobile payment services in Kenya.

H8A: consumer behavior intention to use mobile payment services has a positive and significant influence on the actual use of mobile payment services in Kenya.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.6 Purpose of the study

The purpose of this study was to identify the drivers that influence the consumer intention and use of mobile payment services in Kenya. The consumer behavior intention to use of mobile payment services was conceptualized as the dependent variable while the independent variables included intrinsic motivation variables such as; perceived ease of use (PEOU) and perceived enjoyment (PE), extrinsic motivation factors such as, perceived usefulness (PU) and social influences (SI) and demographic factors such as education level and gender.

The instrument used to collect the quantitative data was a self administered questionnaire which examined the components of independent variables of the study. The measurement scales was adopted from the previous study while a pre-test was conducted to validate the instrument before the questionnaire was administered.

Secondly, the purpose of the study was also to analyze the influence of consumer behavior intention to use mobile payment service on the actual usage of the services. This was performed by analyzing

the significant relationship between consumer behavior intentions and actual usage of the mobile payment innovations.

Lastly the study sought to analyze the effectiveness of the adopted model in determining the factors influencing actual use of mobile payment innovations among Kenya's consumer. The original unified theory of acceptance and use of technology (UTAUT) adopted in this study was modified where direct relationship between gender and education level with the dependent variable was tested contrary to the original theory where demographic variables were conceptualized as mediating variables.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.7 Significance of the study

(a) To the Business community

Internet technology has a direct impact on customers, suppliers, distributers and new entrants to any industry and companies at large (Salwani, 2009). M-payment service being an internet application is a new phenomenon which global reports have described as the currency of digital entrepreneurship (GSMA, 2015). Therefore, by investigating the drivers that influence consumer intention to use Mobile payment services, this study provides useful insight to firms operating in Kenya and globally on how they can achieve rapid diffusion of the mobile innovations in order to improve their services and performance. In addition, the study also provides important insight to firms that are in the process of adoption and implementation of mobile commerce applications on how to develop, formulate appropriate mobile applications and marketing strategies that will attract more customers.

(b) Academicians and the student community

This study provides an empirical and theoretical framework for research on the usage of internet based applications (m-payment) by consumers in Kenya. To the best of my knowledge this is the

first study that focuses on the mobile payment use in Kenya and therefore the study contributes to the body of knowledge by providing an empirical evidence of the drivers that influence m-payment use by consumers. In addition, it lays the foundation for any researcher interested in studying any technological innovation adoption as a process as recommended by recent studies.

(c) Government and other policy makers

An understanding of the drivers influencing m-payment use is critical in designing policies and interventions that will help in successful implementation of m-payment services and other internet based innovations in the private and public sector. Mobile commerce infrastructure is increasingly being recognized as a key component in the growth of large, small and medium companies in Kenya provided consumers accept and use the innovations; hence policy formulation arising from the results of this study would guide the government, and other industry stakeholders while instituting reforms that would make investment in the new technologies more attractive and beneficial to enhance the development of a cashless society.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.8 Assumptions of the Study

The researcher made the following assumption while conducting this study. First, as the researcher collected primary data through questionnaires administered to consumers, the assumption was that the responses given in this study were genuine and portrayed the true picture of the information gathered.

Second, the researcher also assumed that the choice of the respondents in this study would help to gather relevant information needed in this study. Based on the structure of the

telecommunication industry in Kenya and the services offered by various organizations, the researcher assumed that focusing on the customer care centers alone would help to collect data that would be essential in this study.

1.9 Scope and delimitations

Firstly, the researcher limits this study to just focusing on the individual acceptance and use of technology. This is despite review of previous relevant literature and global indices revealing that technology usage is categorized in three aspects; individual usage, business usage and government usage (Benat et al., 2014).

Secondly the researcher limits this study to a sample size that was selected from a segment of the targeted population; consumers who visited the mobile operator's customer care centers in Nairobi, Nakuru, Eldoret and Mombasa. It is important to note that mobile payment services are also being used in many other towns that were not included in this study.

Thirdly, this study only focused on the motivational and demographic drivers influencing mobile payment use. A review of previous literature reveals that there are many more drivers tested and documented in the last decade that were not included in this study.

Lastly, this study focused on investigating the factors that influence intention and use of mobile payment services in three largest mobile operators in Kenya based on the size of the market share Safaricom, Airtel and Orange telcom (CAK, 2014). It is important to note that there are many other small mobile solution providers that have entered in to the market in the last two years and were not included in the study.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.10 limitations of the Study

Like any other studies, this study has its own limitations. First, getting primary data from the consumers was not an easy task basically because of their nature and how they view any data sourced from them. This was solved by assurering them that the data sourced was mainly for academic purposes and an assurance that it would not be used for any other purpose.

Secondly, the study experienced a slow response from the respondents who complained citing the language used in the questionnaire and some information that they deemed confidential. This was mitigated through follow-ups and helping the respondents to fill the questionnaires by the researcher together with the research assistance.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.1.1 Definition of key terms

Intention: a person's motivation, willingness to exert effort or willingness to try and enact a given behavior (Ajzen, 1991).

Mobile commerce: use of mobile technology or wireless telecommunication devices to carry out business transactions.

Mobile transactions: transactions carried out through mobile technologies and devices.

Mobile payments: payment made or enabled through digital mobility technologies with or without use of mobile telecommunication networks. The payments are either digital financial transactions although not linked to financial institutions or banks

Mobile banking: a set of mobile banking services involving the use of portable devices connected to telecommunication networks which provide users with access to mobile payments with or without involvement of traditional banking setup.

Intrinsic motivation: motivation induced by the process of performing a given activity without any apparent support.

Extrinsic motivation: motivation induced by reinforcement values of the outcome to perform a certain activity.

Drivers of e-commerce usage*:* Factors that positively influence the use of e-commerce technologies which are classified as either internal or external to the firm.

E-commerce: The process of buying goods and services though the internet or any other electronic means.

Post- adoption stage: The phase of technology adoption beyond the initial adoption stage which are mainly indicated by usage and value creation.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Mobile payment usage: The extent of m-payment use as well as the effort of the firms to integrate ICT into its internal environment that generates output gains

Diffusion of technology: Diffusion refers to the process by which an innovation is communicated through certain channels over time among members of a social system.

Competitive advantage: Acquiring of internet based innovation by organizations to allow it to outperform their competitors.

Utilization: It is the extent to which an organizations actually uses m-commerce application adopted.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

1.12 Chapter summary

This section provides a snapshot of the chapters covered by this thesis. In order to achieve the research objectives, this thesis includes five chapters. The research chapters are summarized as follows.

Chapter 1 This chapter provides the introduction to the research and the problem area. The study introduces the research context by discussing relevant issues regarding the consumer intention and use mobile payment in Kenya. The research objective and hypothesis are discussed followed by the significance, scope, limitation and assumptions of the study.

Chapter 2 This chapter presents literature review of the drivers that influence mobile-payment usage. The chapter presents theories and models used in the study, review of the existing empirical studies, and conceptual framework of the research. Based on the conceptual framework, research hypothesis are derived and discussed together with research gaps.

Chapter 3 This chapter covers the research methodology and reasons for adopting it as well as the tools and instruments used for implementation of the research. The research design is then discussed including the methods used by the researcher to collect data, questionnaire structure, its design and administration. The measurement of dependent and independent variables are discussed together with the techniques used to check for reliability and validity.

Chapter 4 This chapter presents the findings of the research. The chapter first presents the descriptive statistics for the demographic data, business data, e-technology usage and factor influencing e-commerce usage. The chapter also presents inferential statistics such as factor analyses, hypotheses testing and multiple linear regressions.

Chapter 5 This chapter provides a summary, recommendations and conclusions of the major research findings based on the research hypotheses. Managers' implications, limitations together with suggested area of further studies are also discussed

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed the existing literature on mobile payment use. It discussed the key theories underlying technology usage, developed a conceptual framework and established the gaps in knowledge as gathered from the empirical studies reviewed.

2.1 Theoretical Literature

According to Saunders & Lewis (2012), a theoretical framework leads a researcher to determine what variables to measure, and the statistical relationships to look for in the framework of the problems under study. Therefore, theoretical literature helps the researcher scrutinize the variables of the study; provides a general framework for data analysis; and helps in the selection of applicable research design.

The research on information system (IS) adoption behavior is generally divided into two categories which include; pre-adoption and post adoption studies (Zhu & Kraemer, 2005). Pre-adoption studies focus on the factors influencing user to adopt a service or a system initially while post adoption studies attempt to understand what drives user to continue using and repeat the usage (Zhou, 2014).

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

In his study Zhou (2014) found out that technology adoption is driven by normative pressure while continued use of the same technology is driven by perception and attitude of the consumer behavior. Though the main goal of this study is to focus on the post- adoption behavior of consumers, the section will review key theories from both pre- adoption and post-adoption as previous research shows that both stages have applied the same set of theories and models (Teoh et al., 2014).

Existing literature reveals that there are many documented studies focusing on technology diffusion either at individual or organization perspective (Salwani, 2009). According to Alam (2009), majority of the studies are grounded on the following theoretical frameworks: Diffusion of innovation theory (DIT) (Rogers, 1983); Technology organizational and environmental model (TOE) (Tornatzky & Fleischer, 1990); Resource- based theory (RBV) (Barney, 1991), E-value model (Salwani, 2009), integrated model (Wu & Balasubramanian, 2003), Technology acceptance model (1989) (TAM), theory of planned behavior (1975) (TPB) and theory of acceptance and use of technology (UTAUT).

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

An analysis of the prior studies indicates that these models differ in their focus and are designed to examine different aspects of technology adoption (Peixin & Wei, 2012).Theoretical literature based on the individual usage of technology reveal that Technology acceptance model (TAM), unified theory of acceptance and use of technology model (UTAUT), Theory of planned behavior (TPB) and Extended TAM by Venkatesh & Davis (2000) are some of the models that have widely been used in the previous studies.

For the purpose of this study, theoretical foundation will be based on the unified theory of acceptance and use of technology (UTAUT) developed by (Venkatesh 2003). The model included other variables such as social influence and demographic profile to improve on the original TAM

model variables which included; perceive ease of use (PEOU) and perceived usefulness (PEOU). Chan & Chong (2013) argued that Technology acceptance model (TAM) as a model has its own limitations based on the fact that previous studies have clearly tested and shown without doubt that the two variables (PEOU) and (PU) will have a direct relationship on the intention to adopt any technology hence a need to extend the model.

In addition, Zhou (2014) argued that online usage of mobile devices include various activities such as transactional, entertainment and information seeking and these activities have different attributes and use among the consumers hence the original TAM would fall short in its theoretical explanation. Therefore, Venkatesh (2003) developed the unified theory of acceptance and use of technology (UTAUT) model which included the social influence variables, demographic variables to the original variables of technology acceptance model (TAM). The model has also been used in the recent researches to study the usage of mobile commerce in different economies (Issa & Mamoun, 2013; Pousttchi & Wiedemann, 2014).

2.1.1 Diffusion of Innovation Theory (DIT)

Diffusion studies have investigated the degree to which e-commerce technology is absorbed into the firm's processes or the extent of e-commerce intensity use by individuals (Al-Qirim, 2007). Though there is no universal definition of innovation Rogers' (2003) defined an innovation as an idea, practice, or object, which is perceived as new by an organization or an individual who adopts or uses it. According to Ochola (2013) diffusion is defined as a process by which an innovation is communicated through certain channel over time among members of a community hence the argument that DIT should focus mainly on interpreting how new ideas and concepts are generally adopted.

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The wide spread adoption of innovation according to this theory are influenced by certain attributes that are associated with technological innovation which according to Rogers (2003) include relative advantage, complexity, trailability, compatibility, observability, and confidentiality. Ochola (2013) stated that it is important to note that out of the four mentioned attributes, only compatibility, complexity and relative advantage that are consistently related to innovation adoption. Based on the studies which have used DIT model, the dependent variable widely used is innovation adoption (adopt or not adopt) while the key explanatory variables that are assumed to influence the decision (adopt or not adopt) include the adopters personal characteristics, innovation characteristics and social systems variables (Alam, 2009).

Rogers (2003), argued that the decision to adopt a given innovation is not instantaneous but a process that occurs overtime which consists of actions and decisions that can be summarized in five stages as follows: knowledge, which occurs when an individual or any other unit (firm) is exposed to a given innovation and learns how it functions; persuasion, which occurs when an individual or any other unit (firm) forms a negative or positive attitude towards the innovation; decision, when an individual or any other unit (firm) is involved in activities leading to a decision on whether to adopt or reject the innovation; implementation, when an individual or a firm decides to use the innovation and lastly, confirmation, when an individual or a firm seeks for a strengthening of the decision made or reverses the decision due to other factors beyond the innovation process.

Despite, the strength of the DIT model as discussed in this and previous studies, researchers have argued that its main limitation lies in determining how to measure adoption of innovation. This limitation according to Salwani (2009) can be addressed by integrating key variables from the model

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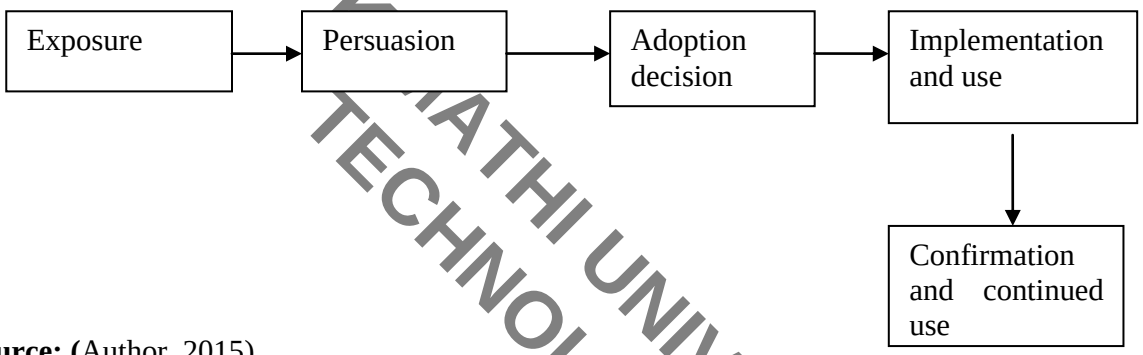
with organizational, technological, and environmental factors discussed under the TOE model in case of an organization innovation adoption study and TAM when it comes to individuals.

Previous studies have also argued that DIT is a limited model especially when it comes to studying adoption of innovation in an organization and individual perspective because, rather than the technology factors which are the main focus of the model, technology adoption in an organization and individuals is also influenced by environmental factors that are not included in the model (Wu & Balasubramanian, 2003)

Figure.2 1: Adoption process



Source: (Author, 2015)

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2.1.2 Theory of Reasoned Action

Theory of reasoned action was introduced in 1967 in an effort to understand the relationship between attitude and behavior (Ajzen & Fishbein, 1975). This theory attempts to explain the relationship between beliefs, attitudes, intentions, and behavior and is based on the assumption that human beings are rational and make systematic use of available information. In addition, they consider the implications of their actions before making the decision to perform or not perform a given behavior.

According to this theory, the immediate determinant of behavior (adoption) is behavioral intention (willingness to adopt). Figure (2.2) shows a representation of the model.

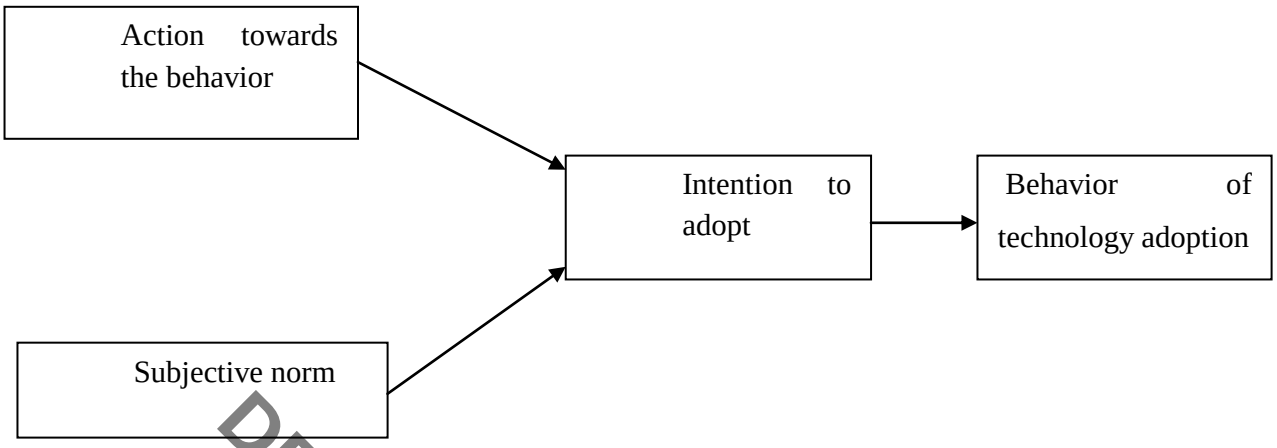

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Figure.2 2: Theory of Reasoned Action (TRA)

Source: (Ajzen & Fishbein, 1975)

The model shows that attitudinal, social influence and intention variables are important drivers that influence the intention and the behavior to adopt a given technology. The basic assumption of TRA is that the individual's behavioral intention (BI) to perform a given action (e.g., adopt m-commerce) is jointly shaped by attitude towards performing the behavior (ATB) and subjective norm (SN) denoted by perception of what others think the person should or should not do.

Researchers such as Rogers (2003) have argued that the limitation of TRA is that it does not mention the beliefs that are predictive for a particular behavior. Whilst the existing literature shows that TRA has been widely used to evaluate a range of consumer behaviors, doubts have been raised about its suitability in evaluating decisions in an organizational context because of the dynamic and intricate multiphase, multi-person, multi-departmental, and multi-objective nature of decision processes in organizations (Ochola, 2013). Prior theorists have argued that this conclusion does not exactly apply to individuals and small businesses where decision processes tend to be influenced by the owner or the user of the technology (Rogers, 2003) hence giving it an edge in studies that focuses on individuals. But though the systematic capacity that is inbuilt in this theory may have much significance in assessing decision-making by individual users as explained area , and despite the fact

that TRA's capability of predictability is clearly documented in the literature; researchers have shown that some problems arise in circumstances where the behavior being investigated is not entirely under volitional control (Ajzen & Fishbein, 1975).

Ajzen & Fishbein (1975) also identified two additional problems rooted in the theory. First, this theory does not distinguish between behaviors and intention and secondly, it does not make clear provisions for examining if the probability of failing to perform a behavior is due to one's behavior or intentions. In an effort to address these limitations, TRA was extended by adding the construct "perceived behavioral control". This construct was aimed at predicting behavioral intentions and the resulting extended model was named as the Theory of Planned Behavior (TPB).

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2.1.3 Theory of Planned behavior

Due to the limitations of the Theory of Reasoned Action, the model was extended to accommodate other component variables resulting in a modified model named the Theory of Planned Behaviour (Ajzen & Fishbein, 1975) represented by figure (2.3).

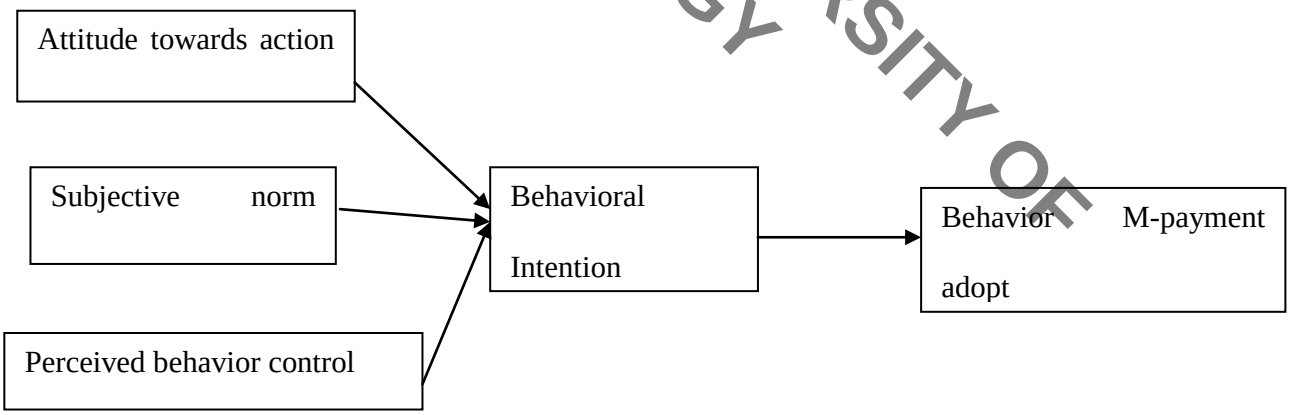

Figure.2 3: Theory of Planned Behaviour

Source: (Fishbein and Ajzen, 1975)

According to Ajzen & Fishbein (1975), the attitudinal component in TPB refers to a person's attitude towards performing the behavior under consideration; in this case adoption and use of m-payment services. They argued that the likelihood of performing a given behavior will be strong if individuals hold a favorable attitude towards performance of that behavior. Fishbein and Ajzen (1975) distinguish between attitude towards an object (for example attitude towards m-payment services) and attitude towards behavior (for example attitude towards seeking to adopt or use mobile payment services) in relation to an object.

They further indicated that attitude towards behavior (for example adoption process) is a superior predictor of that behavior than attitude towards the targeted behavior. The determinants of attitude are those behavioral beliefs that are salient in the population under examination and an individual's attitude towards behavior is determined by the evaluative implications of the total set of beliefs held and not just one belief.

The other determinant of behavioral intention, namely subjective norm, refers to a person's perception or the social pressures to perform or not perform a particular behavior. The subjective norm is determined by whether important referents approve or disapprove the performance of the behavior in question weighted by the individual motivation to comply with those referents. Those beliefs that underlie a person's subjective norm are termed normative beliefs. Thus, a person who believes that important referents approve of the performance of a particular behavior (for example mobile payment use) and is motivated to comply with those referents will hold a positive subjective norm. The Theory of Planned Behavior assumes a causal chain of behavioral

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and normative beliefs to behavioral intention and behavior via attitude (towards behavior) and subjective norm.

This means that people are likely to adopt a given behavior when they evaluate it positively and believe that significant others think they should perform it (Venkatesh, 2003). The primary difference between TRA and TPB is that TPB considers perceived behavioral control (PBC) as the determinant of behavioral intention. In spite of the fact that it may be difficult to evaluate actual control before behavior, it is clear that TPB can provide this measure. Perceived behavioral control is added as an eternal variable, which is believed to have both a direct impact on actual behavior and an indirect impact via intentions.

Based on an empirical study, Ajzen, (1991) stated that individual's behavior is largely affected by self-belief in the capability to execute the behavior. Moreover, the structural fundamental correlation from PBC to BI presents the control's motivational influence on actual behavior via intentions (Ajzen, 1991).

2.1.4 Technology Acceptance Model (TAM)

A number of theoretical models have been proposed to facilitate the understanding of factors influencing the acceptance of information technologies (Davis, 1989). The Technology Acceptance Model (TAM), which is viewed as an adaptation of the Theory of Reasoned Action (TRA), is one of the most influential and robust models in explaining Information Technology (IT)/ Information System (IS) adoption behavior (Park, Yang, & Lehto, 2007). This theory was originally designed to predict users' acceptance of IT and usage in an individual context.

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Generally, the model can be used to explain user behavior across a broad range of end-user computing technologies and user populations (Davis, 1989). Prior empirical studies strived to expound on the determinants and mechanisms of users' adoption decisions on the basis of the TAM with the conviction that the adoption process influences successful use of particular technology systems (Liao, Tsou, & Huang, 2007).

The TAM focuses on two particular viewpoints, namely, perceived usefulness (PU) and perceived ease of use (PEOU) of innovation, which play an important role from the Perception of innovation acceptance behavior. Perceived usefulness has been defined as a user's subjective perception of the ability of a computer to increase job performance when completing a task. Perceived ease of use refers to a person's subjective perception of the effortlessness of using a computer system, which affects the perceived usefulness, and thus having an indirect effect on technology acceptance by the user.

According to Venkatesh & Davis, (2000) technology acceptance model (TAM) focuses on the attitude explanations of intention to use a specific technology or service and is a widely applied model for user acceptance and usage. Previous researchers indicate that a number of investigations on the TAM have demonstrated that it is a valid, robust, and powerful model for studying user acceptance of innovation and the model was specifically aimed at building a foundation for understanding the effects of external factors on internal beliefs, attitudes, and intentions (Bouchard & Bertrand, 2008). Figure (2.4) shows the theory diagrammatically.

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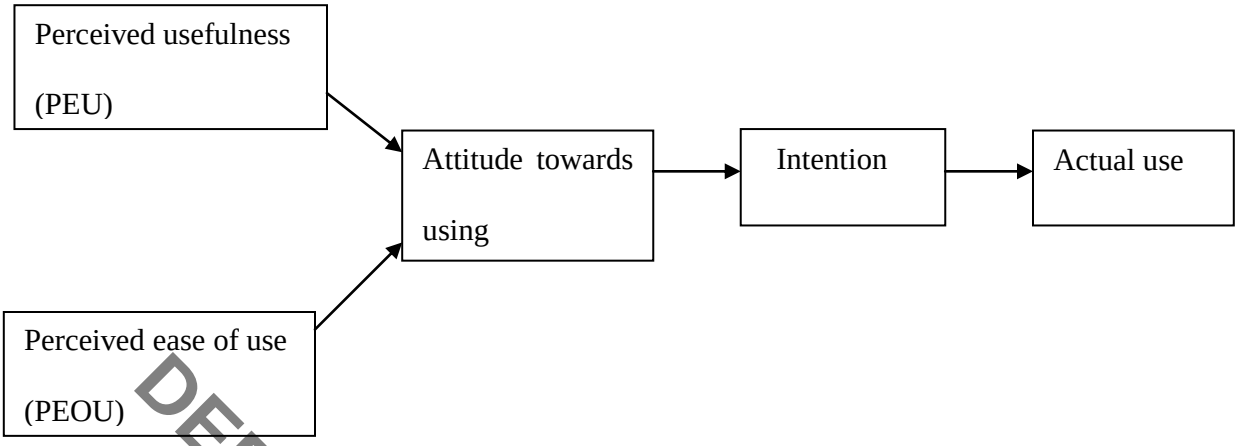

Figure.2 4: Technological Acceptance Model

Source: (Davis, 1989)

While it is self-evident that ease of use is important to stimulate the adoption of a new technology, Hwang (2009) stated that in order to design and implement an easy-to use application, the uniqueness of the systems need to be understood. Chan & Chong (2013) proposed that an easy to use interface is essential for any application, especially mobile devices. Moreover, previous studies have stated that awareness to navigation, display size, and log-in procedure regarding ease of use should be taken into consideration due to the unique characteristics of mobile devices such as screen size, input mechanisms and battery consumption (Wei et al., 2009).

System developers, therefore, have to give serious consideration to design guidance of mobile applications (Venkatesh, 2003). Nevertheless, though the screen size of mobile devices is small, Amber et al. (2004) argued that it is crucial for the display size to be acceptable to the consumer. TAM was found to have inbuilt limitations such as focusing in only two variables; PU and PEOU which many studies had already confirmed their capability. Venkatesh (2003) extended the model and developed the Unified theory of acceptance and use of technology to include other variables that were deemed important to the emerging technologies.

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2.1.5 Theory of acceptance and use of technology (UTAUT)

Unified theory of Acceptance and Use of Technology (UTAUT) model was developed by consolidating the limitations witnessed in previous studies while using technology acceptance model (TAM). According to Venkatesh (2003), the influence of perceived ease of use (PEOU) and perceived usefulness (PU) had already been established in the adoption of technology, and as TAM only use PEOU and PU as the main determinants, recent studies have indicated that they may not be sufficient to guide developers and implementers of mobile commerce applications. The UTAUT was aimed at explaining user intentions to use information systems (IS) and subsequent usage behavior. The theory holds that four key constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions) are direct determinants of usage intention and behavior while gender, age, experience, and voluntariness of use act as controlling or moderating factors that impact innovation adoption (Venkatesh, 2003).

Moreover, performance expectancy is the degree to which an individual believes that using e-commerce will help him or her attain performance gains, while effort expectancy refers to the perceived amount of effort that the user needs to put into learning and operating e-commerce. Social influence, on the other hand, is the degree to which an individual perceives that important others (such as bosses, peers, and subordinates) believe that he or she should use e-commerce. Finally, facilitating conditions refer to the provision of support for users in terms of computer hardware and software necessary to work on e-commerce (Venkatesh, 2003).

Denali (2010) also proposed a conceptual model for modification of UTAUT by incorporating management effectiveness and programme effectiveness as determinants of behavioral intention in the context of user acceptance of telecommunication call centers. The study found scarcity in the

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studies that largely address the issues of integration of efficiency into the UTAUT model. The study was, therefore, limited to proposing a UTAUT model based on literature review and recommended that successive researchers should focus on the empirical justification of the conceptual model.

. Figure (2.5) presents the model of the theory.

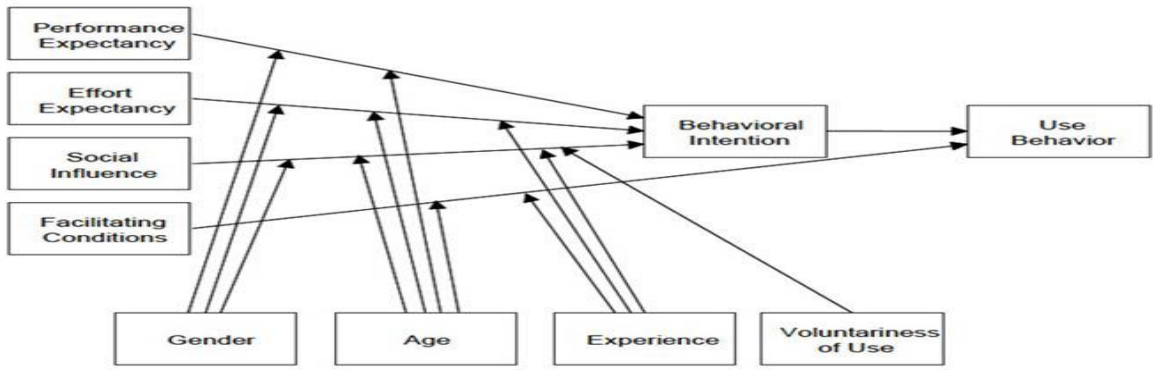

Figure.2.5: Unified theory of acceptance and use of technology

Source: (Venkatesh, 2003)

Table: 2 1: Summary of constructs of UTAUT framework

Constructs	**Definition**
Performance expectancy	The degree to which an individual believes that using a system will help attain gains in job performance (Venkatesh,2003).
Effort expectancy	The degree of ease associated with the use of the system (Venkatesh, 2003).
Social influence	The degree to which an individual perceives that important group of people believe he or she should use a system (Venkatesh,2003).
Facilitating condition	The degree to which an individual believes that an organizational and technical infrastructure exists to support system use (Venkatesh,2003).

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2.1.6 Justification of the theory

The study justifies the use of this theory based on various studies that have adopted in studying mobile commerce use in the previous literature (Issa & Mamoun, 2013; Venkatesh & Davis, 2000). This theory is a modification of Technology acceptance (TAM) which has widely been used in the previous studies and found to have some limitations especially when studying mobile applications. The theory is supplemented with predictions from Technology acceptance model (TAM) and Theory of planned behavior (TPB).

2.2 Global Mobile innovation adoption and usage

Mobile internet has grown rapidly around the world and according to Mobile Payments Readiness Index (2015), mobile industry continue to grow rapidly across the globe with an estimated 3.6 billion subscribers by the end of 2014 and 50% of the global population having subscribed to a mobile service compared to just 20% ten years ago. With the adoption of smart phones reaching a critical mass accounting for 60% of device connections in the developed market, researchers are predicting that the global mobile penetration rate will be at 60% with an additional one billion subscribers and 2.9 billion smart phones driven by increased affordability of the devices by the year 2020.

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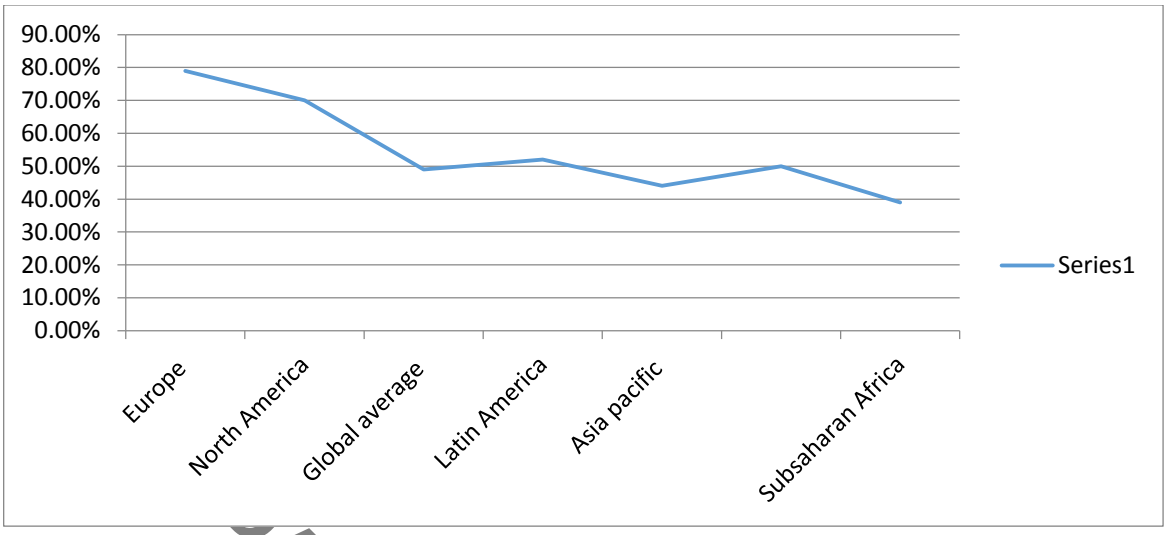

Figure.2.6: Global Mobile Subscriber penetration by region

Adopted from: (Mobile economy 2015)

Faced with a wide market and growing competition, mobile operators have released a variety of mobile services such as mobile money, mobile games, mobile instant messaging and mobile payment services which have received a lot of attention from the business market (Zhou, 2014). Firms have recognized the opportunities created in the mobile payment market and are trying to gain a competitive advantage in the competitive market and also retain the consumers they have acquired while also targeting the ones available with research reports showing that the cost of acquiring a new consumer is five times higher than that of retaining the existing one (Teoh et al., 2014).

Previous studies have also stated that consumer switching cost is lower giving consumers a freeway of switching from a service provider to the other with much ease (Zhou, 2014). There is now universal definition of mobile payment services and different researchers have defined mobile payments services based on their own understanding. For instance, Zhou (2014) defined mobile payment as a service that enables users to use their mobile devices to conduct payment, check balance and transfer money.

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Chan & Chong (2013) defined mobile payment as a form of electronic payment made through mobile device to initiate and confirm electronic payment while Teoh et al. (2014) defined mobile payment as an exchange of funds initiated via an electronic communication channel. This study adopts Zhou (2014) definition and refers to mobile payment to the transfer of an electronic value of payment through an electronic payment mechanism which allows customers to remotely access and manage their banks accounts , transactions and also transfer money through an electronic network.

This mobile penetration will see the number of mobile innovations increasing rapidly together with the industry revenue which was reported to have generated 3.8% of the global gross domestic product (GDP) which amounts to approximately $3 trillion US dollars of economic value across the surveyed 246 countries by 2014. Global statistics indicate that the revenue generated is bound to grow faster than the global economy with mobile services estimated to contribute about 4.2% of global GDP by the year 2020.

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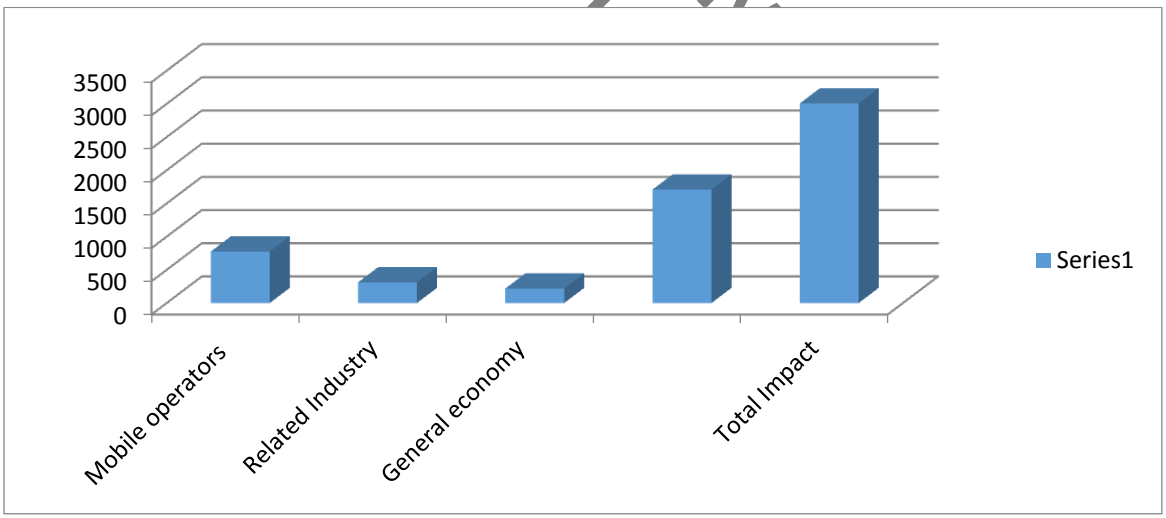

Figure.2.7: Direct and indirect contribution of mobile ecosystem to global GDP

Adopted from: (Global mobile economy, 2015)

More over the mobile ecosystem through the services offered directly employed approximately 12 million people and supported about 12 million people indirectly globally. These statistics are bound to change fast with an estimated 15 million direct jobs and 12 million indirect jobs hoped to be created by the year 2020 as shown by figure (2.8)

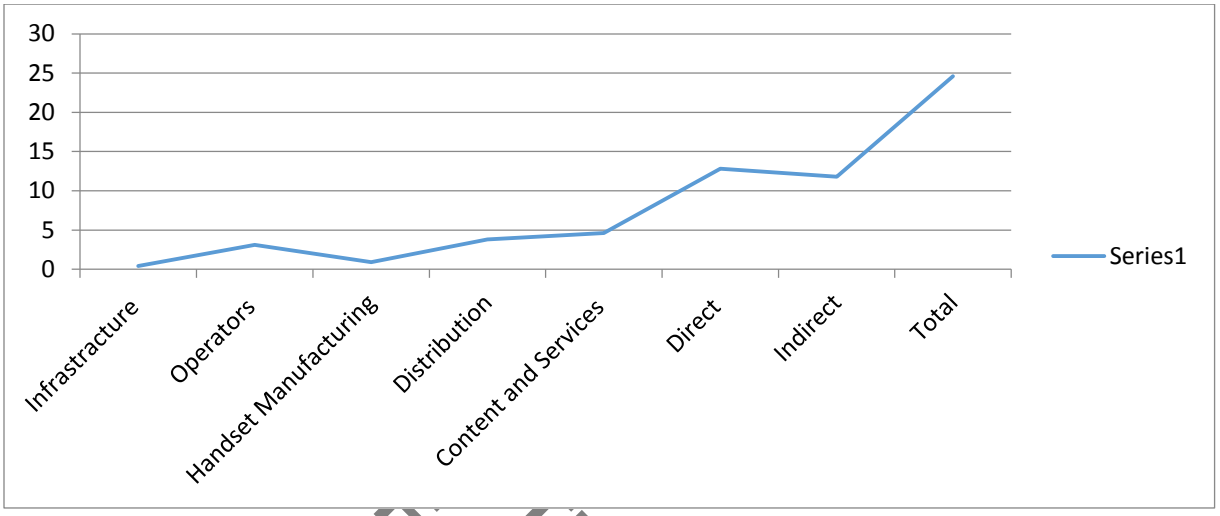

Figure.2.8: Global mobile ecosystem employment impact

Adopted from: (Mobile economy, 2015)

These statistics show that mobile phones is at the epicenter of the new digital ecosystem where it is driving innovations and development of new unique services in areas which include; mobile commerce, social networking and digital content among others. According to Teoh et al., (2014), mobile devices have redefined consumer experiences in their day to day life and in addition created a range of new business opportunities together with the services that are helping to link the digital and the physical world. For instance, the high adoption of smart phones have enabled developers to design new products and services either based on applications (apps) or wearable's and smart homes services.

Previous studies have shown that the mobile ecosystem change is not just a preserve of developed economies as innovative mobile solutions such as MPESA are helping to provide the developing economies with opportunities to overcome social economic challenges particularly in areas such as

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financial inclusion, education, health and other government service delivery channels (Mobile Payments Readness Index, 2015).

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2.3 Mobile innovation in Sub-Saharan Africa

Over the last five years, Sub-Saharan Africa has experienced the highest growth in both mobile subscription and connection globally. According to the latest statistics report, there were 329 million mobile subscribers which is about 38% of the entire population. With the adoption of smart phones rapidly increasing driven by increasing affordability and spread of high speed networks, forecasts indicate that approximately 50% of all mobile connections in sub-Saharan Africa will be on Smartphone by the year 2020. The region has also experienced a mobile revenue growth of 7% in the last five years making it the fastest growth in any region and contributing 5.4% of the total GDP by year 2014. The impact include the overall direct contribution from mobile operators of 1.9% of the total GDP and from direct related industries such as service providers, retailers handset manufacturer and mobile content creators contributing about 0.6% of the total GDP. Moreover the effect on the rest of the economy is estimated to be approximately 0.5% of the total GDP while increased productivity induced an estimated 2.4% of the total GDP in the region.

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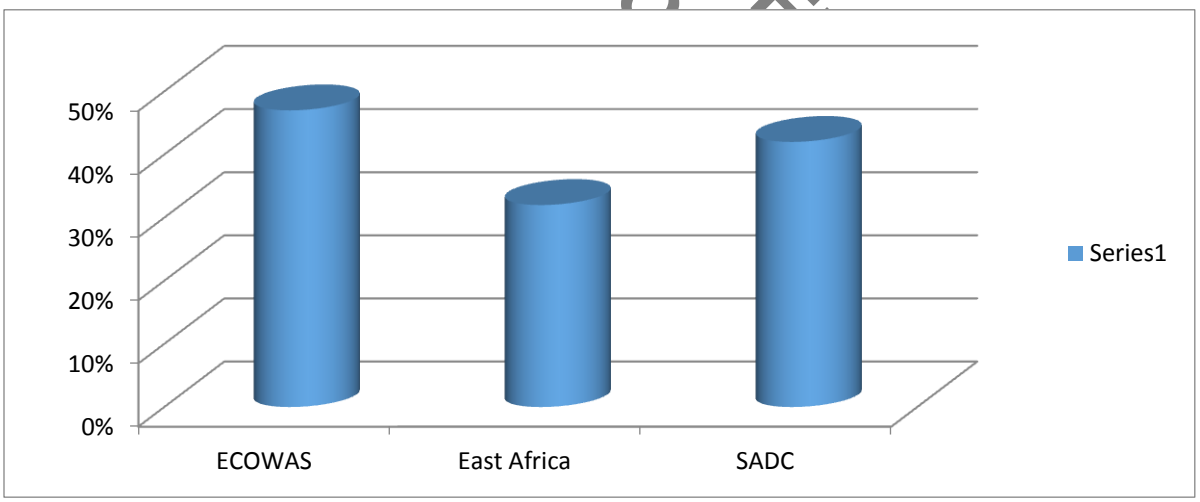

Figure.2.9: Total (direct and indirect) contribution to GDP in SSA

Adopted from: (mobile economy, 2015)

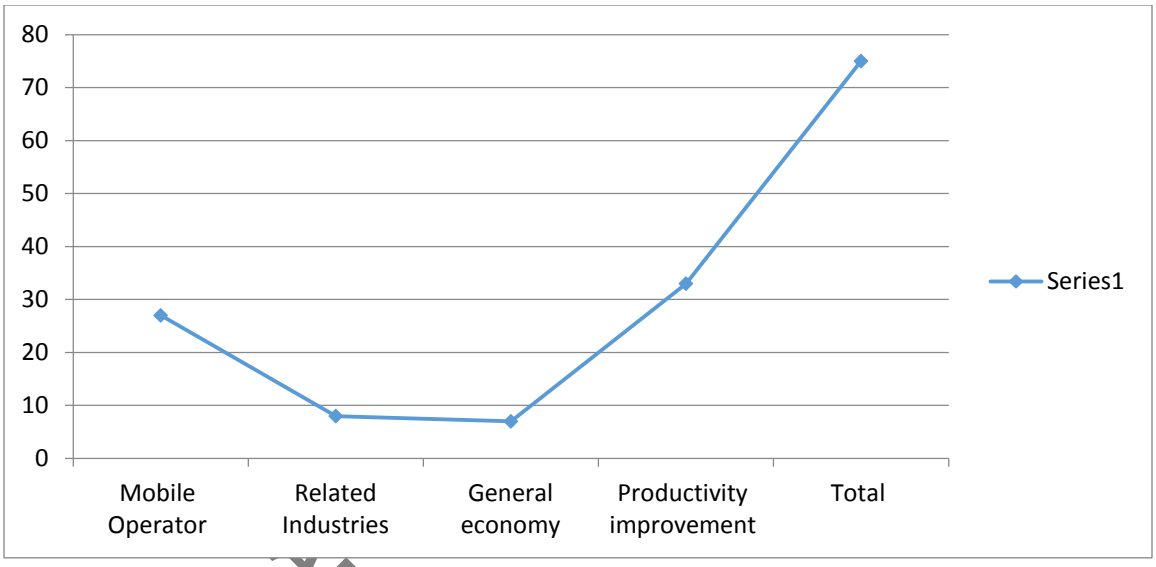

Figure.2.10: Global mobile ecosystem employment impact

Adopted from: (Global economy, 2015)

According to report by global economy (2014), the mobile industry provided direct employment to approximately 2.4 million people in the region in areas such as distribution and retail services while the sector also created approximately 4 million indirect jobs having a total impact of approximately 6 million jobs.

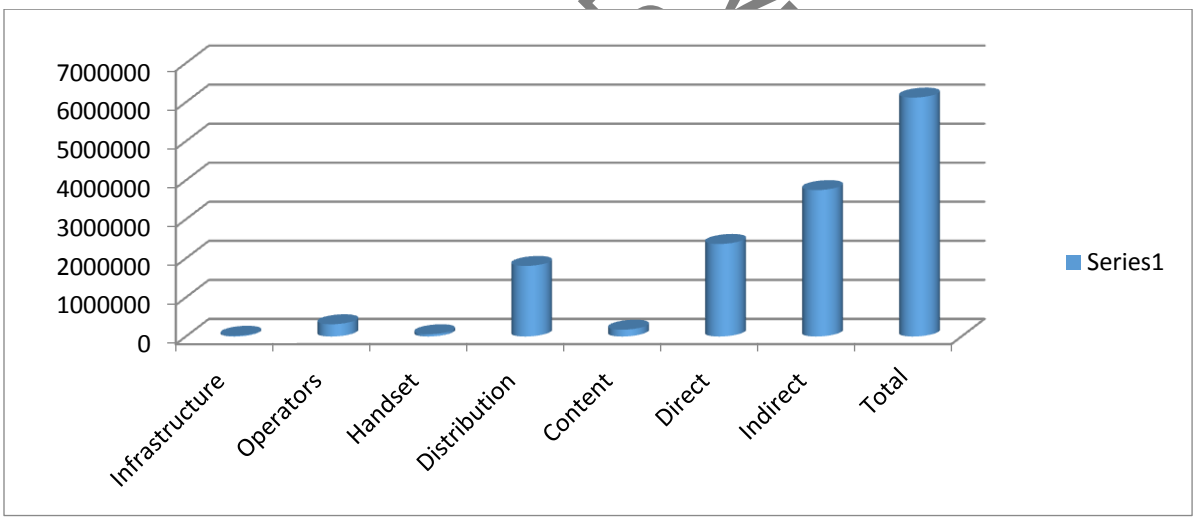

Figure.2.11: Direct and indirect employment from the mobile ecosystem in SSA

Source: (mobile economy, 2015)

2.4 Development of Mobile Innovation in Kenya

According to Isaiah, Omwansa, & Waema (2012),until 1998 Kenya posts and telecommunication corporation (KPTC) which was established in 1977 was a monopoly providing all the telecommunication services in Kenya. This monopoly was broken in 1998 when the parliament enacted the communication act in order to regulate the communication sector leading to creation of five companies; the post cooperation of Kenya, Telcom limited, and communication commission of Kenya and the national secretariat tribunal and appeal tribunal for dispute resolution. In 1999 the government granted Telkom Kenya an exclusive five year license that would allow it to adjust to a competitive business environment. The company was responsible for all local access, national telephone services, and internet backbone network. As these changes were happening two companies Safaricom and Celtel were developing their mobile phone services as an avenue of liberalizing the telecommunication market.

The growth of mobile services has been tremendous in the last fifteen years from a mobile subscriber base of 17000 in 1999 to 11.3 million in 2007 and 32million subscribers by the end of 2014. This tremendous growth led to the increase in the number of operators with the addition of orange brand and econet (yu brand) in to the market.

The first mobile money payment service dubbed MPESA was launched in 2007 by Safaricom as a mobile phone based product to help improve access to financial services for people in Kenya. Celtal also launched their own product referred to as Sokotele but it is MPESA that was able to penetrate the market easily as according to the available data, within the first eight months, it had attracted a subscription of 900,000 users, 1200 agents and had already transacted 4billion Kenya shillings. A year after its launch it was reported that it had already hit 2 million active subscribers, transacting 100 million Kshs daily. Today the mobile money transfer has grown huge and wide in Kenya with

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other new mobile money services such as Airtel money, orange money and Tangaza joining the market. Despite this competition, MPESA still controls 77% of the market share making it well visible globally. This growth has also led to development of new innovations based on the mobile money transfer and also led to the evolution of electronic payment system dubbed cashless transactions, mobile banking and pay bill systems. Figure (2.11) represents the market share of the mobile payment operators in Kenya.

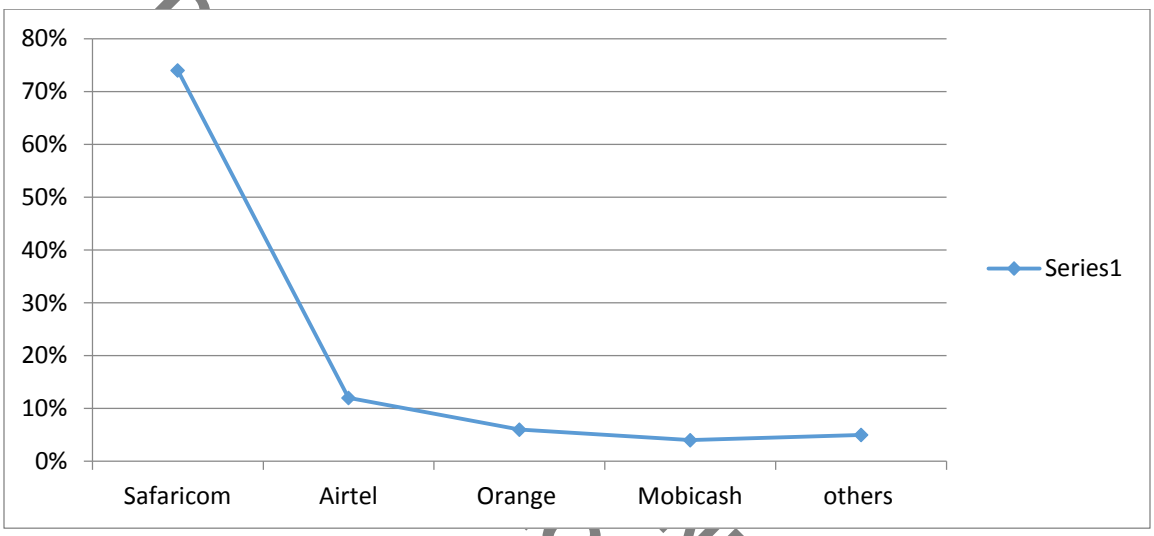

Figure 2.11: Overview of the mobile payment adoption and use in Kenya

Source: (Communication Authority of Kenya, 2014)

The rapid growth of mobile payment innovations in Kenya have proven that there is high demand of such services and a willingness especially by the low income earners to adopt, use and also pay for these technologies. Ever since Kenya launched the MPESA, a money transfer service in 2007, a tremendous growth has been witnessed not only in developing nations but also developed markets. Kenya has witnessed high growth of mobile payment innovations with an estimated 26 million subscribers using these services as at December 2014.

The banking industry has also realized that extending financial services to some of the unbanked clients using mobile technology can significantly lower the cost of delivery as well as ease the

capability of the customers to access their services. Seven years after the launch of the first mobile money transfer service there are approximately 16 million users conducting over 2 million transactions daily worthy US$ 4.68 billion annually and transiting to 17% of the total GDP. The country has 4 major mobile money payment subscribers with Safaricom accounting for 68% of the total market share while Airtel control 22% while the rest control 10% of the market share as at December 2014.

The lucrative mobile market has continued to attract more firms and in 2014 the communication authority of Kenya (CAK) issued licenses on mobile virtual network operators (MVNO) to three firms with an aim of taking charge of the mobile money market and also enable them to better reach their customers with financial services. According to the GSMA report (2014) the emergence of mobile money has also led to the development and growth of digital entrepreneurship in Kenya. For instance the study shows that mobile money was the most popular payment method accepted by the Kenyan startups while the Fin Access report (2013) showed that banking penetration grew by 19% driven by mobile payment innovations. Figure (2.12) shows accepted payment methods in Kenya.

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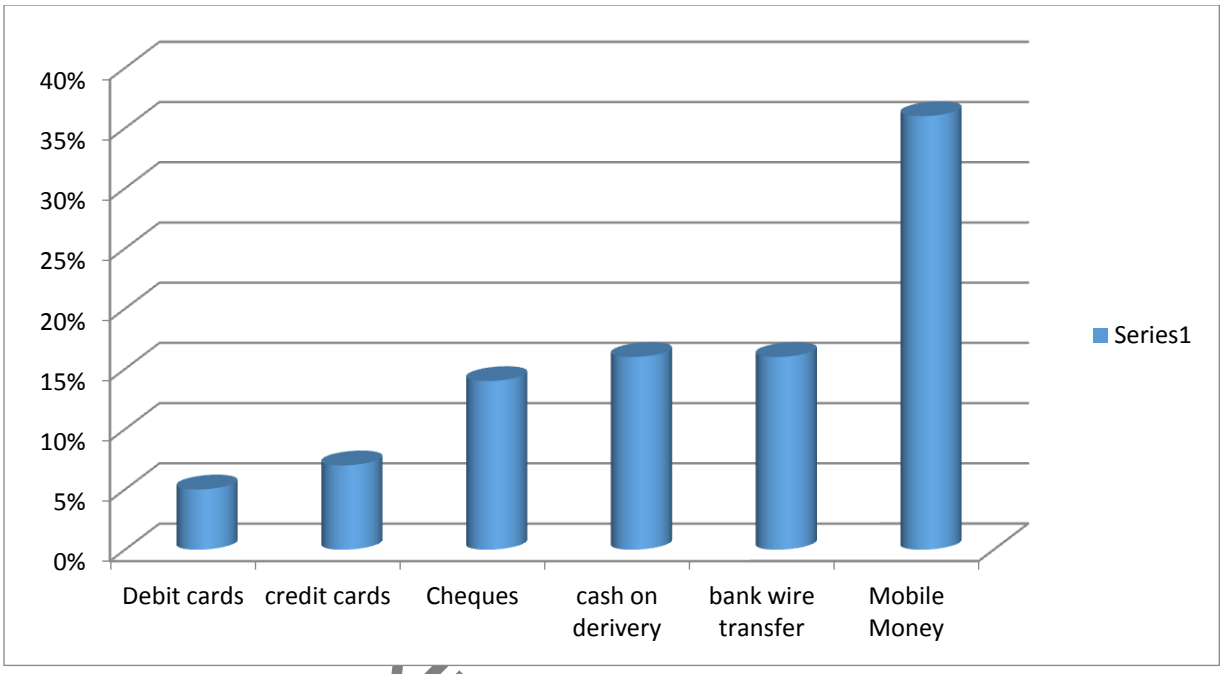

Figure.2.12: Payment methods accepted by startups in Kenya

Source: (GSMA, 2015)

According to Mobile Payments Readness Index (2015) mobile innovations have enhanced access of financial services through technology leveraging by mobile network operators (MNOs) and partnerships with the banks to deliver the services to the unbanked and underserved consumers. They have also enabled everyone in Kenya to perform basic transactions without having to use a bank account or any other less efficient method.

With approximately 26 million mobile money users and roughly 12.5 million active mobile money innovations consumers, Kenya boast of highest level of mobile money penetration globally. According to mobile payment readiness index (2015) Kenya is ranked among the top five (5) nations in the overall mobile payment readiness which is measured by; consumer readiness, financial service penetration, regulations, environment, infrastructure and mobile commerce cluster.

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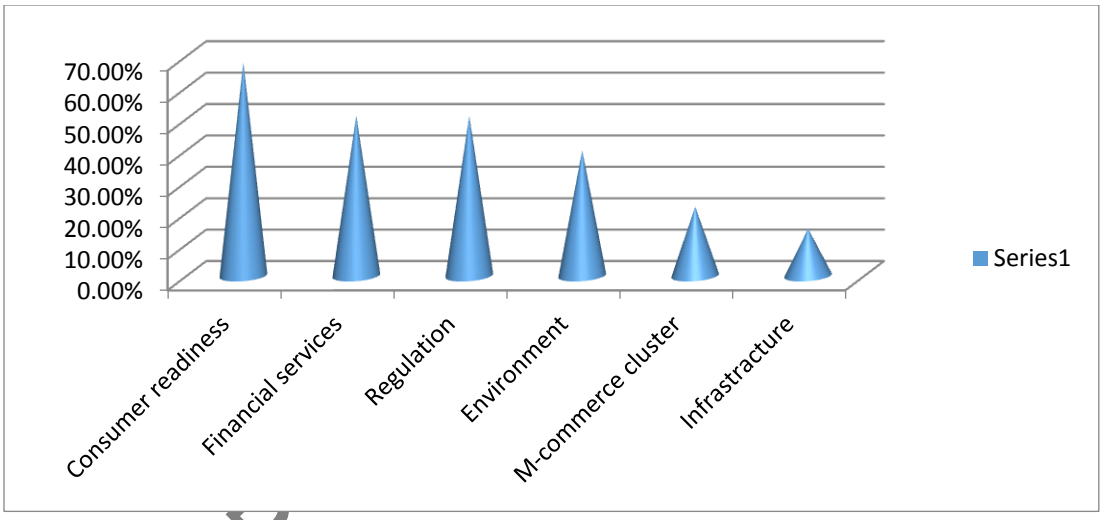

Figure.2.13: Kenya Mobile payment Readiness index

Source: (Mobile payment Readiness index, 2015)

In consumer readiness segment, Kenya is ranked first (1) and this indicator is measured by observing the familiarity with using mobile device to send money to families, frequency of using mobile devices to pay bills at stores and willingness to use a mobile device to browse internet in order to shop and buy items. Although these are not the only important indicators of consumer willingness to use mobile payment services GSMA (2015) report indicate that technological capability of a given market will only matter if consumers are willing to use the technology.

Based on the figures, Kenya is ranked as the global leader in consumer mobile payment usage index with an average of 68% in mobile familiarity and frequent usage of mobile payment making it the highest ranking country globally. Despite this high rank, there is low usage in POS and also m-commerce applications as revealed by the figure (2.14)

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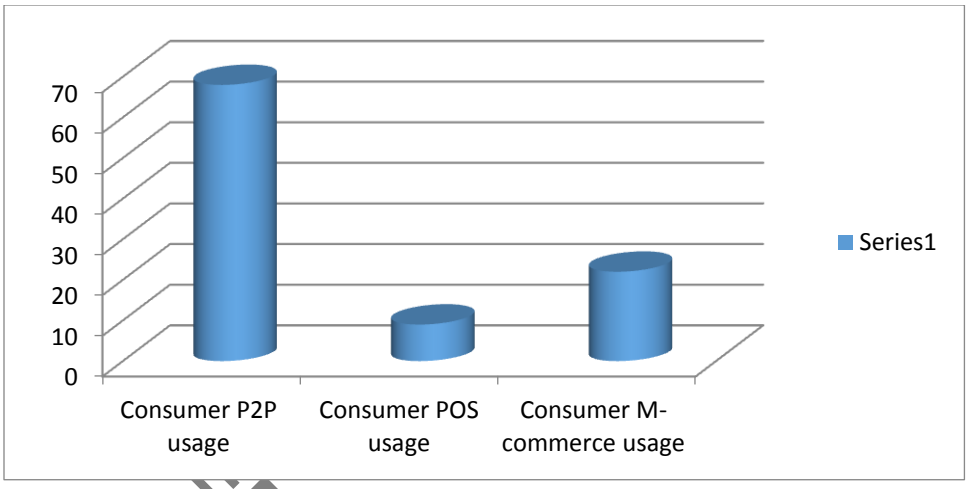

Figure.2.14: Kenya consumer mobile payment index data

Source: (Mobile payment Readiness index, 2015)

EDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.5 Review of Empirical Studies

According to Saunders & Lewis (2012), review of empirical literature is a directed search of published works, including periodicals and books, that discusses theory and presents empirical results that are relevant to the topic being studied. Although it can often be wide in scope, covering decades, perhaps even centuries of material, it should also be narrowly tailored, addressing only the scholarly materials that are directly related to the research question (Cooper & Schindler, 2008). Moreover by using a systematic approach to previous scholarly materials, the researcher is able to place his or her research into an intellectual and historical context. Previous literatures have documented various factors that influence adoption and usage of mobile payments systems globally. These studies are summarized in this chapter.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.1 Dependent variable

2.6.1.1 Consumer behavior intention to use mobile payments

Technological innovations have had a significant impact on human and professional life globally (Teoh et al., 2014). Rapid evolution of technology has led to major changes in the worldwide economy and business environment making some researchers such as Wei *et al*. (2009) to refer 21st century as an era of technology revolution. Previous studies on consumer attitude have showed that several factors influence consumers attitude towards mobile application acceptance and usage such as demography, motivation and individual factors (Chan & Chong, 2013; Teoh et al., 2014; Zhou, 2014). In addition consumer attitude towards mobile application use is also influenced by prior experience of computer and new technologies such as mobile and internet driven technologies. Venkatesh & Davis (2000) found out that consumers over all attitude towards a specific technology innovation and its application had a strong influence towards actual usage of the technology by users.

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According to Ajzen (1991), behavior intention is defined as the degree which technology users through motivations intend to use a system. Developed from theory of planned behavior by Ajzen (1991), TPB have been used to explain and predict human behaviors towards the adoption or use of IT applications by individuals. The model assumed that significant amount of human behavior can be predicted by understanding an individual intention to perform a certain behavior. Intention , according to Ajzen (1991), is a person's motivation, willingness to exert effort or willingness to try and enact a given behavior. Intention then serves as a behavioral plan that mediate between an individual attitude and the enactment of the behavior which in most cases is rare, hard to observe or involve predictable time lag Ajzen (1991).

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Previous studies have reported a positive and significant influence between consumer behavior intention to use m-commerce services and actual behavior. For instance, Venkatesh (2003) in his study stated that behavior intention will have a positive influence on technology usage while Issa & Mamoun (2013) in their study found out that there was a direct effect between behavior intention and ultimate use of m-commerce services in Jordan. Trivedi & Sunil (2014) found out that behavior intentions are important determinants of the actual behavior while Armitage & Conner (2001) examined 185 empirical studies that had been published before 1997 and found out the variance in behavior and intention accounted for 27% and 39% of the actual behavior studied.

Jeong & Yoon (2013) undertook a study on the consumer acceptance of mobile banking services in USA and adopted extended TAM as the theoretical model. A survey was carried out and 165 respondents were sampled using a questionnaire. Regression analyses was used to analyze the

relationships and five hypothesis which included; perceived usefulness (PU), perceived ease of use (PEOU), perceived credibility, perceived self efficacy and perceived financial cost were tested. The research found out that all hypotheses tested except perceived financial cost had a significant influence on the behavioral intention towards mobile banking usage where perceived usefulness was the most influential factor. The study also revealed that perceived self efficacy influenced non-users adoption intention.

Teo & Lee (2010) while carrying out a study on intention to use technology among teachers found out that attitude towards behavior and subjective norm had a positive influence on the behavioral intention to use technology while perceived behavior control had no significant influence on the behavior intention. The study also revealed that the three variables contributed about 40% of the variance in behavioral intention. This section presents an in-depth empirical review of demographic and motivation factors influencing acceptance and usage of mobile payment innovations.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.2 Independent variables

2.6.2.1 Motivation factors and consumer behavior intention.

Research in psychology has reported a correlation between motivation and behavior intention to engage in a certain activity and one such activity is the consumer intention to adopt or use information technology application such as m-commerce (Chan & Chong, 2013; Issa & Mamoun, 2013; Marumbwa & Munyaradzi, 2013). Deci & Ryan (1985), defined motivation as a state which influences peoples actions by factors that are either externally or internally driven while Chan & Chong (2013) revealed that these factors can either be extrinsic motivation or

intrinsic motivation where consumers can either be extrinsically motivated or intrinsically motivated to carry out a given action such as accepting and using mobile innovations.

Extrinsic motivation refers to an activity performed due to the reinforcement value of the outcome while intrinsic motivation occurs when a person performs an activity without apparent reinforcement other than the process of performing the process (Teoh et al., 2014). Texiria (2012) defined extrinsic motivation as external coercion to act while intrinsic motivation as an internal value of an activity attached to carrying out a given act. According to Wei et al. (2009) and Chan & Chong (2013) such intrinsic motivation factors include perceived enjoyment and perceived ease of use (PEOU) while extrinsic motivation factors include social influence (SI) and perceived usefulness (PU). These motivation variables have been studied in the previous studies including (Chan & Chong, 2013; Ngai & Gunasekaran, 2007; Teoh et al., 2014; Wei et al., 2009) and found to influence the adoption and use of information technology applications by the individual users. This section defines and explains the relationship between these motivation variables to the consumer intention to use m-payment applications as evidenced on the previous studies.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.2.2 Social influence

The concept of social influence has been included in various theoretical models that have been used to predict IT related behaviors such as extended TAM by Venkatesh & Davis (2000) and theory of planned behavior (TPB) by Ajzen (1991).According to Chan & Chong (2013), social influence ranges from concepts of more overt form of influence where some individuals actively exert pressure on others, to a more indirect form of normative pressure where some individual act as silent influence to others.

Though there is no universal definition of social influence, previous researchers have defined the concept based on the way (SI) is conceptualized in different fields. Venkatesh & Davis (2000), defined social influence as the degree which individual perceive that important others belief may influence whether he should adopt or use a certain IT system. According to Wei et al. (2009) social influence is defined as an individual belief that significant others play a role in influencing consumers to engage in a given activity. Other studies such as (Dickinger, Arami, & Meyer (2007) have equated social norm to be equivalent to subjective norm and defined it as a belief that a given behavior is influenced by a person's social context. Venkatesh & Davis, (2000) intimated that this behavior social context can be represented by the behaviors of individual peers or family members with whom he or she relates with frequently, or a behavior that is observed in a larger social environment such as neighborhood in which this individual lives.

Despite previous literature revealing that the concept of social influence (SI) has been conceptualized in various way in IT studies, the most widely acknowledged concepts include the social norm and social perception concepts (Alkhunaizan & Love, 2013; Issa & Mamoun, 2013; Ngai & Gunasekaran, 2007).

Social norm concept was derived from theory of planned behavior Ajzen (1991) and focused on individual perceptions of the influence of social norms towards predicting a certain behavior. Based on Ajzen (1991), this perception whether accurate or not can serves as a form of social influence if individuals adopt a certain behavior that they perceive to be approved by other reference groups. Social perception concepts take a different approach by assuming that an

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

individual perception to engage in a certain behavior can have a motivating effect to their own behavior. It posits that individuals will be influenced to adopt and use a certain IT application to conform to a given social image of the prototype users, act as a status symbol, become more popular or look prestigious (Hwang, 2009).

Previous studies have found a significant influence between social influence (SI) and behavior intention towards the use of mobile based applications. For instance Chan & Chong (2013) carried out a study on the determinants of consumers m-commerce usage activities and found out that social influence had a significant influence on the usage of m-commerce activities such as entertainment and content delivery but did not influence transaction and location based activities.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Hamza & Shah (2014) carried out a survey study on gender and mobile payment adoption in Nigeria with a sample size of 400 respondents and found out that social norm influenced female students to adopt mobile payment systems more than male counterparts. Zeng & Ma (2015) used a sample of 300 respondents and adopted the unified theory of acceptance and use of technology (UTAUT) to carry out a survey study of understanding the role of individual perception on mobile payment in China and found out that social influence had a positive effect on the individual innovativeness indicating that social networks positively affects intrinsic innovativeness behavior.

Using unified theory of acceptance and use of technology (UTAUT) and a sample of 447 respondents, Issa & Mamoun (2013) carried out a survey study on the factors that influence acceptance of mobile commerce in Jordan and found out that social influence had the strongest influence on the behavior to use m-commerce in Jordan meaning that the consumers in Jordan were affected by thoughts of others in order to use m-commerce applications.

Mazman & Usluel (2009) undertook a survey study with a sample of 300 teachers both female and males to investigate the social influence in the adoption process and usage of innovation and found out that though teachers were being informed about innovations most frequently by mass media they rarely relied on the expert advice. The results also reveled that social influence on females was significantly higher than male in usage process of technology innovation. Based on technology acceptance model (TAM) and a sample of 53 students, Safeeni & Kamani (2011) carried out a study to investigate the factors influencing customers adoption of m-commerce in the emerging economy and found out that subjective norm influenced customers intention to use mobile banking applications as customers think that using mobile banking applications will improve their image and status in the society.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.2.3 Perceived usefulness (PU)

Perceived usefulness is the other extrinsic motivation factor that has been widely studied in m-commerce applications as evidenced by; (Chan & Chong, 2013; Teoh et al., 2014; Zeng & Ma, 2015; Zhou, 2014). According to Issa & Mamoun (2013) perceived usefulness is defined as the degree to which an individual believes that using a system will help him or her attain gains in a job performance or extent to which an individual believe that he / she would benefit from using a certain

IT based application (Jeong & Yoon, 2013). Past studies including Chan & Chong (2013) have shown that an individual will often evaluate the consequences of their behavior and make a choice based on the attractiveness of perceived usefulness of a certain technology.

Researchers have often found a strong relationship between consumer behavior intention to use m-payment and perceived usefulness. For instance in his study Chan & Chong (2013) found out that perceived usefulness had a significant influence in m-commerce activities such as content delivery, transactions and entertainment but no influence in location based activities as they are just promotional and advertisement activities that may not be useful to the user.

Faziharudean & Li-Ly (2011) undertook a survey study with a sample of 404 respondents of working population and graduate students in Malaysia and found out that perceived usefulness had the strongest influence on consumer behavior to use mobile data services and concluded that mobile data services were perceived by consumers as useful and productive tool in accomplishing their day to day activities. Other researchers have also found out that when consumers adopt a certain application they may be looking for a long term engagement with the service.

For instance, Zhou (2014) undertook a survey study on the determinants of mobile payment continuance usage in China using a sample of 226 respondents and found out that performance expectancy denoted by perceived usefulness affected continuous usage of mobile payment services and also concluded that consumers were not just concerned with acquiring an application but also obtaining a long term engagement with the application acquired.

In other m-commerce services such as mobile banking, previous studies have also found out that perceived usefulness contributes towards consumer intention to adopt and use these applications. For

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

example, Jeong & Yoon (2013) while investigating consumer acceptance of mobile banking services using 165 respondents using a survey design found out that perceived usefulness was the most influential factor explaining the adoption intention.

Trivedi & Sunil (2014) undertook a survey study on determinants of mobile commerce acceptance amongst generation Y in India and found out that perceived usefulness had a significant influence on attitude towards behavior intention. Hamza & Shah (2014) undertook a study on gender and mobile payment adoption among students in tertiary institutions in Nigeria and a sample of 400 respondents was targeted. The results showed that perceived usefulness was found to significantly influence behavior intention to adopt mobile payment services amongst students.

Zeng & Ma (2015) found out that individual innovativeness had an effect on the user intention through perceived usefulness while this perception did not influence user intention directly. Others studies such as Wei et al. (2009) also found out that perceived usefulness is the most critical influencer of consumer intention to use mobile commerce and therefore concluded that the service providers should develop applications and content which users will find valuable and usable. Kenny & Daim (2011) carried out a study on the technology acceptance of mobile services by studying the factors that influence the acceptance of mobile services. TAM was adopted as the theoretical foundation and a quantitative method was used as the methodology. The respondents in the study were university graduate students and professional workers aged between 20 and 60 and a total of 1500 people were interviewed. The researchers found out that perceived ease of use and perceived usefulness were important variables that influenced mobile services use. Perceived usefulness (PU) was the most influential factor. Mobile users also want a technology that is easy to use, simple, efficient and of high service quality.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.3 Intrinsic motivation

2.6.3.1 Perceived ease of use (PEOU)

Perceived ease of use (PEOU) was first included as a determinant of consumer behavior intention to use IT application in the original technology acceptance model (TAM) developed by Davis (1989) ,extended (TAM Venkatesh & Davis (2000) and unified theory of acceptance and use of technology (UTAUT) developed (Venkatesh, 2003). Based on these models PEOU was defined as the degree which the prospective user expects the target system to be free of effort. Jeong & Yoon (2013), defined perceived ease of use (PEOU) as the extent which an individual believes that using a certain mobile technology will be easy or free of effort. Prior studies show that perceived ease of use has a significant influence on the consumer intention either directly or indirectly through its effect on perceived usefulness (Venkatesh & Davis, 2000). A system perceived by the consumers to be easier to use will facilitate more system use and is more likely to be accepted by the user and for m-payment services customers may find the services uneasy if the system is not easy to use (Venkatesh & Davis, 2000).

Rahmath & Kamani (2011) undertook a study on customer's adoption of mobile commerce in the emerging markets. A convenience sampling method was used and the respondents were students located in the various campuses. Technology acceptance model (TAM) was used as theoretical Model in the study while 780 students were the respondents. The researchers found out that perceived usefulness (PU), perceived ease of use (PEOU), awareness and subjective norm had a positive effect on the mobile banking adoption and usage while perceived risk had a negative effect on the mobile banking adoption intention and usage. In this study, perceived ease of use (PEOU) was found to be the most influential factor.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Other researchers have also intimated that perceived ease of use helps to build trust with the mobile payment developers as it shows that they have put thought on the end users (Jeong & Yoon, 2013). Previous studies have found a positive relationship between perceived ease of use (PEOU) and consumer behavior intention to use IT applications. some researchers even concluding that PEOU is useful in just about all the activities that are related to m-commerce usage Chan & Chong (2013). This means that developers should pay attention on how user friendly their application is to the end user.

For instance (Chan & Chong (2013) found out that perceived ease of use (PEOU) influenced all the m-commerce activities (transaction, content delivery, location based and entertainment) included in their study. In addition, perceived ease of use shows a strong influence in technology use in approximately all M-commerce applications that have been tested using the three models mentioned in this study. For instance, Safeeni & Kamani (2011) found out that perceived ease of use was an important determinant that influenced mobile banking use among customers in Saudi Arabia while Teoh et al. (2014) found out that PEOU had a strong influence on consumer perception of e-payment in Malaysia.

Pousttchi & Wiedemann (2014) carried out a study on influence of consumer intentions to use mobile payments application in Germany where Technology Acceptance Model (TAM) was adopted as the theoretical model. An online survey was conducted with 1104 consumers being the targeted respondents. The study revealed that perceived usefulness (PU) and perceived ease of use (PEOU) had a positive influence on the intention to use mobile payment. The researcher also found significant influence between (PU) and (PEOU) meaning that consumers who perceived mobile payment to be easy to use also perceived it to be more useful. It was also found out that perceived

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

confidentiality and perceived trustworthiness were correlated while perceived confidentiality and perceived usefulness was not correlated.

Marumbwa & Munyaradzi (2013) carried out a study on the factors influencing consumer's adoption of mobile money transfer services in Zimbabwe. Technological acceptance model (TAM) was adopted as the theoretical foundation on the study and a descriptive research design was also used. A sample of 300 respondents who were customers was sampled while regression analysis was used as the bases of data analysis. The researchers found out that perceived ease of use (PEOU), perceived usefulness (PU), perceived trust and perceived relative advantage had a positive influence on adoption of mobile money transfer services. This means that mobile money transfer providers operating in Zimbabwe should consider PEOU as an important factor if their products are to receive high market acceptance by the consumers.

Trivedi & Sunil (2014) undertook a study on determinants of mobile commerce acceptance by generation (Y). A descriptive research design was used while convenience sampling was used and a sample of 150 students in the age group of 18-24 were the respondents. The results showed that perceived ease of use (PEOU), perceived usefulness (PU), perceived trust were found to have a positive influence on intention towards using M-commerce but only perceived usefulness (PU) and perceived ease of use (PEOU) influenced attitude towards use of m-commerce.

2.6.3.2 Perceived enjoyment

Perceived enjoyment is defined as the extent which the activity of using a technology is perceived as enjoyable, fun and exciting to the user despite any performance consequences that may be anticipated (Venkatesh & Davis, 2000). Presented as a form of intrinsic motivation in the previous studies

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Chan & Chong (2013), TAM was extended with a construct of perceived enjoyment conceptualized by Van der Heijden (2002) in a survey investigating the usage of websites. In the study, a research project analyzing the drivers of perceived playfulness revealed that speed; content and focused attention were the most important factors that influenced the use of websites. These constructs were adopted in the mobile medium with the previous studies revealing that perceived enjoyment has a positive and significant influence on the consumer's intention to use mobile applications (Dickinger et al., 2007; Chan & Chong, 2013).

According to Wei et al. (2009) users who find experience of using a form of technology exciting and enjoyable will tend to use it more widely. Chan & Chong (2013) while investigating the determinants that influence m-commerce usage in various activities found out that perceived enjoyment influenced all the four mobile usage activities such as (transactions, entertainment, location based and content delivery) that were included in the study.

Dickinger et al. (2007) in the study of perceived enjoyment and social norm role in the adoption of technology with network externalities found out that perceived enjoyment was an important driver of consumer intention to use network externalities. The study also revealed that the influence of perceived enjoyment was twice as strong as the influence of usefulness.

Chin & Ahmad (2015) conducted a study on perceived enjoyment and Malaysian consumers' intention to use e-payment services. Sample size of 389 was used as respondents and structural equation modeling (SEM) was used as the data analyses method. The researchers found out that there was a significant and a direct relationship between perceived enjoyment, perceived usefulness and perceived ease of use. The study results also showed that there was a significant

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

influence of perceived enjoyment and consumer intention to use mobile payment platform. These result meant that when the consumer think that the mobile service is enjoyable, easy to use and useful, they will be more ready to use the services.

Other studies have also reported significant influence between perceived enjoyment and the consumer intention to continue using mobile commerce platforms. For instance Chong (2014) undertook a study on the m-commerce continuance usage intentions amongst Chinese consumers. A sample of 410 consumers with prior experience in m-commerce was used as the respondents in the study and structural equation modeling (SEM) was used in data analyses. The results showed that perceived enjoyment had a significant influence on the continuance usage of m-commerce by Chinese consumers. This was clear evidence that perceived enjoyment was an important driver for the consumer to continue using m-commerce applications such as m-payment services.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

2.6.4 Demographic variables

According to Chan & Chong (2013) one way of understanding how different users interact with the various m-commerce application is to segment the users based on their demographic profiles. Although demographic variables such as (age, gender, experience) are some of the profiles widely tested in the previous studies, researchers such as Venkatesh (2003) used them as moderating variables of other variables such as perceived ease of use (PEOU) and perceived usefulness (PU) in the unified theory of acceptance and use of technology (UTAUT) and technology acceptance model (TAM) rather than testing them as direct relationship. Age is one of the demographic variables that has widely been examined in the computer adoption studies

and previous study have indicated that technology use was biased to the younger users than the older ones (Teoh et al., 2014).

Chan & Chong (2013) in their study on the determinants of consumers m-commerce usage activities found out that age had a negative and a significant relationship with activities such as content delivery and entertainment but no significant influence on transaction and location based activities. The results implied that younger users engage in these m-commerce activities such as entertainment and content delivery than the older users. Teoh et al. (2014) undertook a study on internet study among Singaporean internet users and found out that users in different age group tended to use the internet for different activities. For instance younger users tend to use the internet for entertainment and messaging more frequently than the older ones but no different in usage in purchasing and browsing was reported.

Issa & Mamoun (2013) included age as a moderating variable in their study while analyzing the influence of mobile commerce acceptance in Saudi Arabia and found out that age was not supported. Trivedi & Sunil (2014) undertook a similar study by investigating the determinants of m-commerce acceptance amongst generation Y and found out that perceived trust and self efficacy directly influenced behavior intention to use m-commerce while subjective norm was found to be insignificant.

Gender

Gender, a demographic variable has also elicited a lot of interest in the innovation adoption and use literature (Chong, 2014; Hamza & Shah, 2014; Venkatesh & Davis, 2000). Despite majority of the study including gender as a moderating variable in the study, the researchers have mostly

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

found no significant influence especially in mobile technology (Issa & Mamoun, 2013; Venkatesh & Davis, 2000). However evidence from the previous studies especially in other technology adoption indicates that men are likely to adopt a new technology than their female counterpart and moreover, women who adopted it use it at a lower level than men. For instance (Laiw, 2002) in his study found out that positive perception towards use of web technologies and computer was higher in male students than female.

While these studies show gender difference in technology adoption, recent studies show no difference between gender and consumer behavior intention to use mobile commerce technologies. For instance Chan & Chong (2013) found out that gender did not significantly influence any four m-commerce activities which included; content delivery, entertainment, transaction and location based even when a direct relationship was used in the study.

A similar study undertaken by Hamza & Shah (2014) found out that though there was a difference in the level of influence of factors such as PEOU and social influence on consumer intention to adopt mobile payment services in Nigeria, there was no significant difference reported in general adoption among gender.

A comprehensive study was carried out by Cabanillas (2014) on the role of gender on acceptance of mobile payment and the results showed that the intention to use mobile payment services was influenced by the usefulness only in men while attitude established a significant influence to the intention to use m-payment services in women alone. The results also showed that perceived trust impact on the payment system had a greater influence in women attitude to

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

use mobile payment system than male counterparts. The conclusion from these studies reveals that there is no universal agreement on the influence of gender on mobile payment use.

Education

Education level is also a demographic variable that has elicited less attention in the prior innovation studies. Among those that have focused on education level, some studies have tended to report contradictory results. For instance Issa & Mamoun (2013) included education level as a moderating variable in their study and found out that education level had no significant effect on behavioral intention to use m-commerce.

A similar study carried out by Chan & Chong (2013) where education level was included and direct relationship was tested found out that education level influenced m-commerce activities such as transaction and location based but no influence on entertainment and content delivery. Chinn & Fairlie (2006) found out that people with higher education level were more likely to use internet as they have more ending power to purchase using mobile services.

2.6.5 Other studies summarized

Zeng & Ma (2015) undertook a study on the role of individual perception on mobile payment by testing the effect of both moderating and mediating factors. The study investigated the relationship between individual innovativeness and user intention and found out that perceived usefulness and perceived ease of use are mediators while perceived risk was a moderator. The results also found out that individual innovativeness was influenced by social influences.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Omwansa, Lule, & Waema (2015) carried out a study on the influence of trust and risk on behavioral intention to adopt mobile financial services among the poor in Kenya. Quantitative data was collected using a questionnaire and a sample of 283 respondents was sampled from seven poor divisions in Nairobi. Structural equation modeling was in data analyses. The study revealed that risk and trust were significant determinants of mobile money transfer in Kenya and risk moderates trust in mobile money adoption. This confirmed the need for the consumers to have confidence on mobile payment applications and in addition revealing the need of mobile providers to invest in building trust amongst consumers.

Abadi, Ranjbarian, & Zade (2012) carried out a study on customer intention behavior to use mobile banking where a sample of 165 respondents participated in the study. The researchers combined both theory of planned behavior (TPB) and technology acceptance model (TAM) as the theoretical foundation and structural equation modeling was used as the data analyses technique. The study results provided support of TPB and TAM as appropriate models to carry out such studies and also found out that behavior intention to use mobile banking was influenced by both perceived behavior control and subjective norm. Perceived risk was found to have a negative influence on the intention to use mobile banking and was the most important inhibitor towards mobile banking use.

Chong (2013) undertook a study on the determinants of mobile payment continuance usage in China where expectation confirmation model (ECM) was used as theoretical foundation of the study. A survey questionnaire was used as the data collection tool and methodology and 410 mobile payment users were the respondents. Eight hypotheses were tested and Structural equation modeling was used for data analyses. The results showed that trust in online payments affects trust in mobile payments

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

and the flow while system quality strongly affects performance expectancy and flow. Information quality affected trust on mobile payments which in turn affects performance expectancy and flow. This means that mobile users may build their trust in mobile payments if they trust online payment systems. Users have a negative attitude towards service quality that is difficult to use or have poor interfaces while information quality acts as a trust indicator.

Thakur & Srivastava (2013) conducted an empirical study in India on the customer usage intention of m-commerce. A research model was developed based on the TAM and resistance theory while 450 questionnaires were administered and response of 292 questionnaires collected from professionals were used in the study. Structural equation modeling (SEM) was used for data analyses. The study found out that perceived usefulness, perceived ease of use and social influence were significant determinants of mobile technology readiness while facilitating condition was not significant. The study also found out that security risk and privacy risk had a negative significance indicating that risk deterred consumer from using mobile commerce.

Arvidsson (2014) carried out a study on the consumer's attitude on mobile payment services in Sweden where diffusion of innovation theory and TAM was adopted as theoretical foundation. A survey research design was adopted while a sample size of 169 consumers was included in the study. The study found out that relative advantage, compatibility, ease of use, network externalities, trust and income were significant factors while cost and age were not significant. The conclusion from this study was innovation studies needed to include other models to enhance full understanding of the mobile payment change process.

Alsheikh & Bojei (2014) carried out a study on the determinants affecting customer's intention to adopt mobile banking in Saudi Arabia. A sample of 403 respondents who were users of mobile

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

banking services was selected. Unified theory of acceptance and use of technology (UTAUT) was used as theoretical foundation, while structural equation modeling was used as data analyses technique. The study results revealed that mobile phone experiences and service awareness were important in understanding of technology while lack of knowledge increased perception risk. The study also revealed that performance expectancy, effort expectancy and perceived risk were important predictors of mobile banking adoption at early stages.

Jayshree & Mohd (2010) carried out a study on m-commerce acceptance and usage amongst Malaysian consumers. Theoretical foundation was based on the Unified theory of use and acceptance technology (UTUAT) while the respondents comprised of 400 students from various post graduate and undergraduate students from Malaysian Universities. The researcher found out that privacy and trust in m-commerce were important drivers of m-commerce acceptance by consumers and also the technology use behavior.

Mardikyan, Beşiroğlu, & Uzmaya (2012) undertook a study on behavior intention towards the use of 3G technology in Turkey. A sample of 180 respondents was selected and unified theory of acceptance and use of technology (UTAUT) was used as theoretical framework of the study. External variables such as perceived usefulness, perceived ease of use price variety of 3G technology and control variables such as age, gender, education level, occupation and experience were also included. The results indicated that perceived usefulness, variety of 3G services, service quality and social influences are important influencing factors of behavior intention to use 3G technology.

Issa & Mamoun (2013) undertook a study on the Key factors that influence acceptance of mobile commerce in Jordan where theoretical foundation was based on UTAUT model. A survey questionnaire was used to collect data from 447 undergraduate university students and data analyses

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

were done using structural equation modeling. The results showed that user acceptance and use of mobile commerce services can be predicted from user behavioral intentions which are significantly affected by performance expectancy. Social influence is the most significant factors that directly influence behavioral intention to use m-commerce services followed by effort expectancy and performance expectancy. Moderating variables such as age, gender, experience and monthly expenses did not significantly influence behavioral intentions.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Balasubramanian & Drake (2015) undertook a study on the effect of service quality and competition on mobile money demand in Kenya and Uganda by sampling 4400 mobile money agents. Three hypotheses were tested and the results showed that agents experienced reduced demand for service failure due to stock outs but not due to network down town. Pricing transparency was also found to influence the demand of mobile money but not competition intensity.

Beng & Eze (2010) undertook a study on determinants of mobile payments usage in Malaysia where Technology Acceptance Model was adopted as the theoretical model. A survey questionnaire was used to collect data and 1000 mobile payment users were the target respondents. Convenient sampling was used as the sampling method while regression analyses were used as the data analyses technique. The results found out that the entire eight hypotheses tested had a positive influence on the usage of mobile payment in Malaysia with security having the strongest influence.

Chemingui & lallouna (2013) conducted a study in Tunisia on the resistance, motivation, trust and intention to use mobile financial services with a sample of 300 non users of mobile financial services. Structural equation modeling was used in data analyses while resistance theory and diffusion of innovation theory was adopted as theoretical foundation. The study found out that traditional barriers

inhibited the usage of the services while compatibility, trialability, perceived enjoyment and system quality were the most important motivation factors.

2.6.6 Research gap

After a thorough review of the M-payment, literature the following gaps have been identified and they were addressed by this research; Mobile technology literature revealed that mobile payment has mainly been studied as a dichotomy (adopt and not adopt) with few studies focusing on the post-adoption stage. As m-payment adoption is a continuous process consisting of several stages as the literature shows, it is important to determine the drivers that affect different stages of m-payment adoption by consumers.

The mobile payment literature has identified many variables that possibly influence their use by consumers. This large number of variables suggests that more research is needed to identify the important ones. Additionally, it is important to determine the significant factors affecting the different stages of technological adoption particularly in different parts of the world.

A vast majority of m-payment literature has been carried out in the developed countries particularly in Asia. It is important to extend this research to developing countries in order to access whether factors and theories tested can be generalized. As developing countries represent a significant part of the world where mobile devices has widely been adopted, understanding the challenges and drivers of m-payment use in these countries, would help provide a more comprehensive view of how to manage these different factors with the ultimate aim to raise the competitiveness of such industry worldwide.

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2.7 Conceptual Framework, operational framework and hypothesis development

According to Kombo & Tromp (2009), a concept is defined as a general idea derived from specific instances. A conceptual framework is a set of broad ideas taken from significant field of enquiry and used to formulate a successive presentation. Saunders & Lewis (2012), stated that when clearly articulated, conceptual framework has potential to assist a researcher to make meaning of subsequent findings. The conceptual framework in this study shows the relationship between independent variables (intrinsic motivation factors, extrinsic motivation factors and demographic variables) and their influence on the independent variable (consumer intention to use mobile payment system amongst Kenya's consumers). The researcher also assesses the relationship between consumer intention and the actual use of mobile payment services. Figure (2.16) summarizes the conceptual framework.

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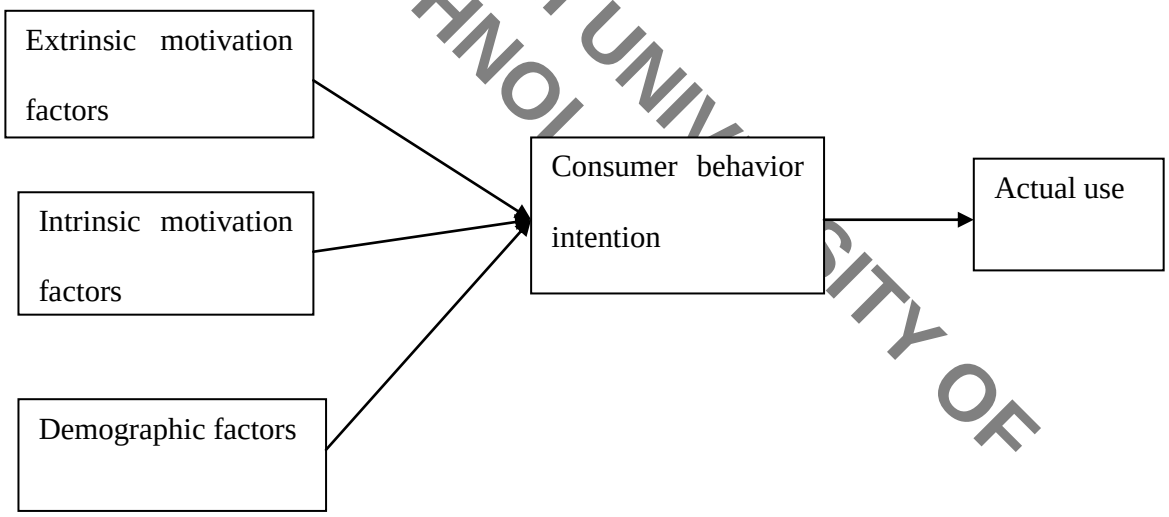

Figure.2.15: Conceptual framework

Source: (Author 2015)

Operational definition of variables

This section operationalizes the independent and dependent variables that were used in the current study. The independent variables in this study consisted of the extrinsic motivation factors whose indicators were perceived usefulness and social influence (social image and social norm). Intrinsic motivation indicators were perceived ease of use and perceived enjoyment while demographic factors consisted of gender and education level. Figure (2.17) shows the operational framework used on the study.

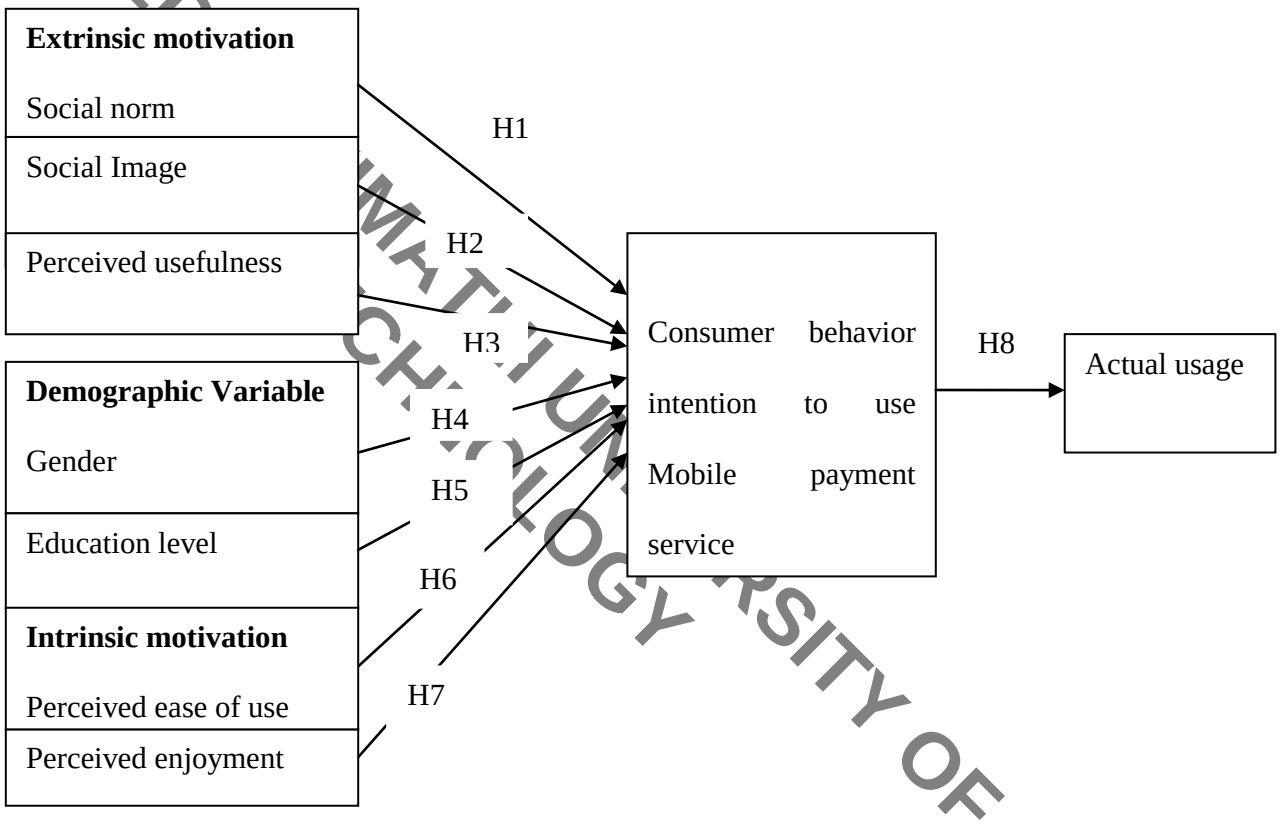

Figure.2.16: Operational framework

Source: (Author 2015)

2.7.1 Hypothesis development

A critical review of the previous literature reveals that about twenty factors influencing the usage of either mobile commerce have been studied in the last decade particularly in developed countries (Alsheikh & Bojei, 2014; Chan & Chong, 2013; Issa & Mamoun, 2013; Omwansa et al., 2015). Moreover reviewed literature also indicate that while some of the factors reported no significant influence others reported mixed results. The antecedents and their measurement were developed on the bases of comprehensive review of existing literature as well as a pilot study with sampled mobile payment users. Seven factors that reported significant results in the previous studies and adversely mentioned in our pilot study were adopted with some of those that reported mixed results also being included in the study.

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2.7.1.1 Extrinsic motivation and consumer intention

Previous literature have defined extrinsic motivation as those factors which reinforce an activity to be performed driven by the outcome of the activity (Chan & Chong, 2013). Previous studies have included both social influence and perceived usefulness in this category as evidenced by (Chan & Chong, 2013; Chin & Ahmad, 2015; Zhou, 2014). According to Venkatesh (2003) social influence is defined as the perceived pressures from social networks to make or not to make a certain behavioral decision. These social influences include image, culture, social networking, social pressure and social media.

In many e-commerce applications, social influence has been analyzed as one of the reason behind users engaging in m-commerce or e-commerce (Lu, Yao, & Yu, 2005). In their study (Lu et al., 2005) found out that there existed a significant relationship between social influence and intention to

adopt wireless internet service. Zhou et al. (2010) found out that a TAM model which was extended to include social influence had a positive influence on consumers' decisions in adopting mobile technologies such as mobile banking while Chang (2013) found out that social influences influenced the usage of M-commerce in activities such as content delivery and entertainment but not transaction based activities. In this study mobile payment services include mobile banking, money transfer, transaction payments and mobile loans. Based on the inconsistency on the previous findings, the following hypothesis is formulated:

H1: *There is a significant relationship between social norms and consumer intention to use Mobile payment services in Kenya.*

H2: *There is a significant relationship between social image and consumer intention to use Mobile payment services in Kenya.*

Perceived usefulness (PU) is defined as the "degree to which an individual believes that using the system will help him or her attain gains in job performance" (Venkatesh, 2003). Majority of the prior studies have found PU to be the strongest predictor of consumer intention to use mobile applications (Alsheikh & Bojei, 2014; Issa & Mamoun, 2013; Mardikyan et al., 2012; Venkatesh, 2003). Previous studies reveal that researchers assumed that the relationship between PU and BI will be moderated by both gender and age in favor of the younger men than women (Venkatesh & Davis, 2000). They claimed that new information systems such as M-commerce are difficult to use unless useful for the older end-users. Thus this research proposes the following hypotheses:

H3: *There is a significant relationship between perceived usefulness and consumer intention to use Mobile payment services in Kenya.*

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2.7.1.2 Demographic variables and mobile payment usage

To understand how different users interact with different m-commerce activities, Chan & Chong (2013) stated that one way is to segment them based on the demographic profiles. Though demographic variables have been studied in previous studies, majority of these studies have tested them as moderating variables of both perceived usefulness (PU) and perceived ease of use (PEOU)(Beng & Eze, 2010; Issa & Mamoun, 2013). Limited studies have tested the direct relationship between demographic variables and technology adoption or usage which is crucial as this knowledge may provide insight into whether there is a relationship between these variables and technology adoption or use (Chan & Chong, 2013). In their study Chan & Chong (2013) found out that there is a direct relationship between demographic variables and m-commerce usage in Malaysia. Other studies found out that web users tend to possess certain demographic characteristics such as they are more likely to be male, and have higher levels of education. For instance, Teo & Lee (2010) found out that males and females have different internet usage patterns, where females tend to use the internet for communication such as messaging while males tend to use the internet for downloading and purchasing. In view of this discusion the following hypothsis is formulated:

H4: *There is a significant relationship between education level and consumer intention to use Mobile payment services in Kenya.*

H5: *There is a significant relationship between gender and consumer intention to use Mobile payment services in Kenya.*

2.7.1.3 Intrinsic Motivation variables and consumer behavior intention.

According to Chan & Chong (2013) motivation variables can be divided into intrinsic and extrinsic motivation. Intrinsic motiavtion occurs when a person performs a given activity without any support rather than performing that activity. Perceived ease of use and perceived enjoyment are the most

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widely studied intrinsic motivation factors that influence the using of mobile technology and it is important to know whether users are influenced by how easy and enjoyable the technology is to use the mobile payment services in Kenya. Perceived ease of use is defined as the perception by the consumer that a given mobile technology is effortless to use while perceived enjoyment is defined as the extent of using mobile innovations activities is perceived to be enjoyable besides any performance results achieved from the system (Chemingui & lallouna,2013). According to Chang (2013), application developers need to understand the relationships between the motivation variables and m-payment usage. In view of this discussion the following hypothesis is developed:

H6: *There is a significant relationship between perceived ease of use and consumer intention to use Mobile payment services in Kenya.*

H7: *There is a significant relationship between perceived enjoyment and consumer intention to use Mobile payment services in Kenya.*

2.7.1.4 Behaviour intention and actual usage

Behavioral Intention (BI) is defined by Fishbein and Ajzen, (1975) as the degree to which consumers are motivated to accept and use the system. Previous studies such as Venkatesh (2003), found out that behavior intention will have a significant positive influence on actual technology usage. Issa & Mamoun (2013) found a positive relationship between behavior intention and actual use of mobile banking in Jordan. Based on the literature, this study defines BI as a degree of cognizant effort that a consumer will exert to conduct monetary transaction using mobile payment services. This relationship has not been tested in Kenya and therefore this research proposes the following hypothesis:

H8: *consumer behavior intention has a positive and significant influence on actual usage of mobile payment services in Kenya.*

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2.8 Summary of the chapter

This chapter contributed to the objectives of the study by developing a conceptual framework based on unified theory of acceptance and use of technology (UTAUT) which acted as theoretical foundation for this study. A critical review of Literature on the factors influencing consumers' intention to use m-payment was undertaken, while the emergence of M-commerce applications globally, in Africa and in Kenya together with practical use of m- commerce applications was reviewed. Finally a thorough Empirical review was undertaken together with the development of the hypothesis.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focused on the research design, data collection, data processing and data analyses methods. Data collection procedures and instruments were also discussed together with the target population and the study sample. According to Cooper & Schindler (2008), a research methodology explains the technical procedures by addressing the research and sample designs used in the study, data collection and fieldwork conducted for the study and the analyses done to the collected data in a mode appropriate to the recipients .

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3.1 Research methods and design

3.1.1 Research Design

The purpose of this section was to describe and justify the reason of choosing a given research methodology and methods. Research design is defined as the overall plan of obtaining the answers to the questions being studied and also handling the difficulties encountered during the research process (Cooper & Schindler, 2008). The researcher adopted cross-sectional, descriptive and quantitative survey design to undertake this study. A descriptive study according to Kothari (2004) is a design that seeks to represent precisely the characteristics of a particular state, individual or groups. A descriptive survey according to Cooper & Schindler (2008) seeks to portray accurately the characteristics of a particular individual, situation or a group and also analyses frequency with which a given phenomenon occur. In addition, it is also described as a systemic research method that

helps in collection of data from a representative sample of individuals using instruments composed of close- ended or open-ended questions, interviews or observations. A cross- sectional research carries out a study at a specified point.

3.1.2 Rationale for choosing the method

This research method and design is suitable for this study based on the definition, description and previous application as evidenced by previous empirical research such as ; (Chaffey, 2009; Chan & Chong, 2013).

3.1.3 Measurements of items

Wu & Balasubramanian (2003) stated that there are very few reliable scales to measure many of the e-business use aspects. Therefore, in case of any deficiency of objective measures, researchers should use subjective measurement such as (perception from managers or users). As mobile payment is an e-business application the variables used to measure each construct of this study were derived from previous published studies carried out between 2003 and 2015. Multi-items scales adopted from the previous studies were employed to measure most of the variables in order to adequately capture the domains of the constructs. To measure consumer behavior intentions to use mobile payment services, the study's dependent variables, four constructs were adopted from (Alsheikh & Bojei, 2014; Chan & Chong, 2013).

Social influence was operationazed using two indicators; social norm and social image. The indicator social norm was measured using three items adopted from Chan & Chong (2013) and (Teo & Lee, 2010) study and the responses recorded in a five-point likert scale ranging from (1) strongly disagree to (5) strongly agree.

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Social image was measured using three items adopted from (Hwang, 2009) studies and the responses recorded in a five-point likert scale ranging from (1) strongly disagree to (5) strongly agree.

Perceived usefulness was measured using four items adopted from Chan & Chong (2013) and Zhou (2014) studies and the responses recorded in a five-point likert scale ranging from (1) strongly disagree to (5) strongly agree.

Intrinsic motivation was operationazed using two indicators; perceived ease of use (PEOU) and perceived enjoyment (PE). Perceived ease of use (PEOU) was measured using four items adopted from Chan & Chong (2013) and Zhou (2014) studies and the responses recorded in a five-point likert scale ranging from (1) strongly disagree to (5) strongly agree. Perceived enjoyment was measured using four items adopted from Chan & Chong (2013) study and the responses recorded in a five-point likert scale ranging from (1) strongly disagree to (5) strongly agree.

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3.2 Population of study

The population was defined based on the similar studies as including mobile services subscribers who visited the selected mobile operators customer care centers (Chan & Chong, 2013). The population in this study will therefore be of all mobile payment services subscribers in Kenya.

3.2.1 Target population

According to Saunders & Lewis (2012) a population refers to all items in a given field of enquiry which a researcher is interested in. The target population in this study was consumers who had subscribed to mobile payment services as at 31st December 2014 in Kenya. According to

Communication Authority (CAK) as at December 2014 mobile payment services subscribers stood at 26 million users. Safaricom controlled 77% of the market while the rest of the operators controlled 23% of the market. Mobile payment subscribers are appropriate for testing our proposed model of mobile payment use due to the growing number of users of these services in Kenya.

3.4 Sample size

A sample is defined as a subset of elements drawn from a large population (Kothari 2004). According to Cooper & Schindler (2008) a sample is needed because a study that is not precise lacks the capability of rejecting the null hypothesis hence it becomes a waste of resources and time. A common goal of a survey research is to collect data that is representative of a population which the researcher uses to generalize the information gathered from the survey sample within a given random error (Saunders & Lewis, 2012). For this to happen, the researcher must determine the sample size of the targeted population. Based on the above discussion the study had a sample size (N) of 680 users who were subscribers of mobile payment services in Kenya. The sample size was calculated based on sample size formula for determining the sample size of infinite population adopted from Krejcie & Morgan (1970). The t value of (2.575) was used based on the population size for selected alpha level a= 0.05 and a degree of accuracy of a=0.05.

The computation of the study sample was as shown below

$$Ss = \frac{Z^2 \times P(1-P)}{M^2} = \frac{2.575 \times 5 (1-0.5)}{0.0025} = 663$$

Where ss = sample size for infinite population (more than 50000)

Z = Z value (2.575 for 99% confidence interval)

P = population proportion assumed to be 0.5 (50%)

M = margin error at 1% (0.01)

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According to Krejcie & Morgan (1970) when estimating the variance of social science studies, the researcher should use a 0.5 estimate of population proportion as it will result in maximization of the variance and also produce maximum sample size. Krejcie & Morgan (1970) also stated that a 5% margin of error was acceptable for the categorical data.

3.5 Sampling Design

In order to test the hypothesis, data was collected from a segment of mobile payment services users who had subscribed to the three major mobile operators in Kenya namely Safaricom, Airtel and Orange. The data was collected from urban town situated in Kenya namely; Nairobi, Mombasa, Nakuru and Eldoret. The cities were selected because of the availability of these services from all the subscribers based on the number of customer care centers available compared to the other towns and the cosmopolitan nature of the population residing in these towns and the number of the customer care centers available in the cities. The four cities were also selected to reduce the possible bias occasioned by geographical factors and to have a sample that reflects a cross-sectional of mobile payment services users. The sample was selected based on the market share enjoyed by the mobile operator nationally based on the Communication Authority (CAK, 2014) statistic. The table below shows the selection proportion.

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Table : 3.1: Selection proportion

Mobile operator	**Market share**	**Total sample selection proportion per operator**
MPESA	77%	523
Airtel Money	14%	95
Orange money	9%	62
Total	100%	680

3.5.1 Sampling frame

According to Saunders & Lewis (2012) a sampling frame is a complete list of all the case in the population from which the researchers sample will be drawn. In this study, the sampling frame consisted of all the subscribers of mobile payment system in Kenya as at 31st December, 2014. According to the communication Authority report (2014), as at 31st December 2014 there were 26 million Kenyans who had subscribed to mobile payment systems. Due to the diversity of the mobile users, the sampling frame was categorized into the following groups of users. The respondents were required to be at least 18 years old. Above the age of 40 were considered as the second group basically because at this age one is assumed to be independent in decision making and have responsibilities.

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3.5.2 Sampling techniques (systematic sampling)

According to Saunders & Lewis (2012) sampling is carried out in order to increase the speed of data collection, lower the cost of the research and improve accuracy and availability of the population elements. Systematic random sampling was used to select the respondents in this study. In this study sampling interval was defined based on the number of questionnaires issued as per the respective market share controlled. Systematic sampling according to Saunders & Lewis, (2012) involves selection of the sample at a regular intervals. Cooper & Schindler (2008) defined systematic sampling techniques (procedures) as one where every K^{th} case in the population frame is selected for inclusion in the sample. In this study systematic sampling was used as a sampling technique where every fifth customer who entered the customer service center was included in the sample. The rationale of choosing this technique is due to its use in the previous studies of this nature. For instance Chan & Chong (2013) carried out a study on the determinants of mobile commerce activities

usage in Malaysia used systematic sampling where every fifth customer was sampled from the population.

3.6 Data collection instruments

A five-point likert scale self administered questionnaire was used as a data collection instrument for the primary data in this study. The questionnaire was developed based on the specific study's hypothesis to ensure they were relevant with the research problem. According to Cooper & Schindler (2008) a questionnaire is a document that consists of printed questions in a definite order on a form or set of forms. Saunders & Lewis (2012) stated that there are three types of questionnaires; open ended, closed-ended or a combination of the two. Open-ended questionnaires are used in qualitative research while close- ended questionnaires are used to carry out statistics in quantitative research. Majority of the researchers tend to use a combination of both to enable them tap all the necessary information needed in their studies.

Some of the documented benefits of using a questionnaire as a data collection instrument based on Saunders & Lewis, (2012) include; the cost of data collection is low even when the target population is large or spread widely geographically; respondents have ample time to fill the questionnaires, they are deemed to be convenient especially when the respondents are not approachable, and they can be used to collect data from a large sample. Some of the demerits attributed to the use of questionnaires include; low return rate; can only be used when dealing with educated and cooperative respondents and ambiguous replies and omissions to some questions.

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The data collection tool was divided into three sections of questions adopted from the previous measurement scales that have been applied in the previous studies to measure the dependent and independent variables. Consumers were asked whether they had subscribed to any of the mobile payment services offered in Kenya. In the second section, a five- point likert scale ranging from strongly disagree to strongly agree were formulated based on the study's variables under investigation. The third sections contained questions regarding the demographic variables of the respondents.

3.6.1 Data collection procedures

The sampling process was based on the customer care outlets located in the four towns. The process involved setting up a desk inside the customer care center and administering the questionnaire. The research assistants invited the respondents to fill the questionnaire and to ensure that there was no duplication. The research assistants enquired whether they had participated in other customer service centers. The research assistants were recruited based on their familiarity with the town they were supposed to administer the instruments and the received thorough training carried out before the commencement of the exercise. Data was collected for one month at the selected customer service centers between 28th June and 30th July 2015 from mobile payment services users who were willing to respond and met the sampling frame criteria.

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3.6 Pilot test

A pilot test was carried out to test the reliability and validity of the questionnaires to be used in data gathering required for this study. According to Kothari (2004) a pilot test is defined as rehearsal of the main survey. Cooper & Schindler (2008) stated that the purpose of a pilot test is to test protocols, data collection instruments, and sample recruitment strategies in preparation for the larger study. The

questionnaires were first discussed with three randomly selected customer care managers of Safaricom, Orange and Airtel based in Nairobi for validation purposes. The customer care centers targeted in this case were those that didn't participate in the final study. Safaricom service center situated in Thika road Mall together with Airtel customer service in Koinange Street both in Nairobi were selected for pilot test using sixty (60) questionnaires distributed to mobile payment users and two (2) researchers whose main area of interest is e-commerce.

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The aim of the pilot test was first; to test the instrument face validity, determine whether the questions were clear, accurate and understandable. Secondly; carry out content validity where the respondents critiqued the questionnaire. Thirdly; construct validity was tested using appropriate statistical technique to determine the structure of the questionnaire while the importance of the questions was scrutinized based on the variables. Lastly, reliability test of the questionnaire was carried out to test where there was duplication of the questions referred to as the internal consistency. Reliability dwells on the consistency of variable measurements. The intensity of an instrument's reliability depends on its ability to produce the similar results when used repeatedly (Cooper & Schindler, 2008).

This study used the Cronbachs Alpha coefficient as a reliability test measure. Cronbach's Alpha also tested the survey's internal consistency. It is a measure of how well each item on a scale correlates with the remaining items. To measure the reliability for a set of two or more constructs, Cronbach's Alpha is a commonly used method where the alpha coefficient value ranges between 0 and 1 with higher values indicating higher reliability amongst indicators. Saunders & Lewis (2012) indicated 0.7 to be the accepted reliability coefficient, but lower thresholds are sometimes used in literature. In similar studies the cut-off point has generally been 0.6 as evidenced by (Chan & Chong, 2013). Thus, this study used 0.7 as the minimum coefficient.

3.6.2 Validity of the research constructs

Validity refers to whether an instrument really measures what it is supposed to measure, given the perspective in which it is applied. Validity can be defined as the degree to which variations in the observed scale scores mirrors the true differences between objects on the characteristics being measured, rather than systematic or random errors (Saunders & Lewis, 2012). Validity assessment was carried out in this study in an attempt to reduce systematic random errors that occur in many surveys. Three major procedures used according to Saunders & Lewis (2012) are content validity, criterion validity and construct validity. Of the three procedures the researcher used content and construct validity as explained in the

Table : 3.2: Type of validity

Types of validity	**Definition**	**Assessment**
Content validity	The extent to which the instrument investigates the planned concept (Saunders & Lewis 2012)	Feedback from the experts Pre-testing the questionnaire Literature review
Construct validity	The degree to which a construct achieves empirical and theoretical meaning (Saunders & Lewis, 2012)	Pre-testing the questionnaire Among the field experts.

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3.8 Data analyses Procedures

The Statistical Package for Social Sciences (SPSS), version 14, was used to analyse data because of its ability to analyze quantitative data and moreover, it incorporates the use of a number of statistical data analysis formulas. The main objective of the study was to investigate the drivers that influence consumer intention to use mobile payment services in Kenya. Specifically, the researcher investigated both intrinsic (perceived enjoyment and perceived ease of use) and extrinsic (social influence and perceived usefulness) motivation factors together with demographic factors (education level and gender).

3.8.1 Data analyses procedure

According to Saunders & Lewis (2012) data analyses is a process that applies statistical techniques to evaluate, condense and illustrate data. All the responses were entered in the SPSS version (14) data sheet using coded values. The data was then interpreted into information that is understandable to other people. Based on the research design, descriptive statistics was used to analyze primary data. Respondents profile and the background were analyzed using quantitative data methods such as mean and standard deviation. The respondent's responses were then presented using frequency and distribution tables.

To analyze the relationship between the dependent and independent variables, various test statistics such as Cronbach's Alpha, (α) to measure reliability test, KMO to test adequacy measuring the variation between dependent and independent variables, ANOVA to test the null hypothesis, F-statistics to test the significance and P-value to test the study hypothesis were carried out.

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Inferential statistics was used to measure the significance of the relationship while the multiple regressions was used to analyze the data. Statistical Package for Social Sciences (SPSS) version 14 was used for data computation.

3.8.2 Regression Model

A regression analysis was used to obtain estimates of the unknown parameters showing how the change in a given independent variable affects the dependent variable.

Consumer intention to use Mobile Payment = β0 + β1Sn + β2Si + β3Ge +β4Ed + β5PU +β6PEOU+ β8PE…….. + ε

Actual mobile payment use = β0 + β1Bi

β0 = standard coefficient

β1Sn = social norm

β2Si = social image

β3Ge = Gender

β4Ed = Education

β5PU = perceived usefulness

β6PEOU = perceived ease of use

β7PE = perceived enjoyment

ε = error term

Actual mobile payment use = β0 + β1Bi

β0 = standard coefficient

β1Bi = behavior intention

The regression model was used to find the relationship between the variables and future outcomes predicted at 95% confidence level of interval (α = 0.05)

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3.9 Expected Results

The expected result of this study was first; to address the study research problem and to answer the research questions and objectives. Second, develop a model that would be used as a foundation of future studies. Thirdly, establish the relationship between the variables being studied and lastly, to create new knowledge in the area of new innovation.

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3.10 Ethical consideration

To protect the right of the participants, the researcher recognized some key ethical issues. Firstly, the principle of voluntary participation where the participants had the prerogative to participate at their own volition was adhered to. Secondly, the principle of confidentiality and identification was also adhered to where any data that would reveal the participants identity was ignored. Thirdly, the principle of right to information was adhered to where the participants who were interested with the findings were requested to provide their contacts. Lastly, the principle of anonymity where the participants were to remain anonymous while filling the questionnaire was adhered to.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

Introduction

This chapter describes the actual findings as per the feedback from the respondents and links them to the objectives of the study. First, descriptive statistics were used to describe the main features of the data collected. The tables and figure showing the demographic characteristics of the study was outlined. Second, descriptive analyses were then done to report on the respondents including the results of the variables to be measured. Third, reliability and sampling Adequacy test which included KMO, Cronbach Alpha and factor analyses was then carried out. Lastly, regression analyses to test the hypothesis significance was carried out and a summary of the results revealed.

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Reliability test results

The reliability test results for the pilot study indicated a Cronbach alpha of 0.8563 with 60 items as shown in table below. This test has been used to test reliability of the constructs measurement in similar studies as evidenced by; (Chan & Chong, 2013; Teoh et al., 2014). According to Hair (1998) a cronbach (α) value of 0.7 is considered acceptable hence satisfying the requirement.

Table: 4.1: Reliability test

Cronbach's Alpha	Alpha based on standardized items	Number of items
	0.8563	60

Test for sampling Adequacy

The study also tested for sampling adequacy using the KMO and Barnett's Test of Sphericity by considering all the constructs that were used in the study. Table presents the results where the value of KMO measure of sampling Adequacy was 0.827 and a Chi Square that is significant (0.00) at 1%.

KMO and Bartlett's Test

Table: 4.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
	Approx. Chi-Square	Df	Sig.
.827	5880.418	210	.000

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4.1 Demographic information

Descriptive statistics of the demographic characteristic describing the sample size of the respondents selected are presented by Table (4.3).

Table: 4.3: Study's response rate

Study sample	**Targeted sample**	**Returned**	**Rejected**	**Accepted**
680	663	527	43	484

Questionnaires were used to seek the respondents' perception on consumer intention to use mobile payment services in Kenya. The total numbers of 680 questionnaires were distributed to the mobile users located in Nairobi, Nakuru, Eldoret and Mombasa who had subscribed to any of the mobile payment services operated by Safaricom, Orange and Airtel. Moreover, these consumers visited the

customer care service center where data was collected during this time. Out of the total, 527 questionnaires forms were filled up and returned indicating a response rate of approximately 77%. This response rate was considered adequate based on Saunders & Lewis (2012) recommendations that a response rate of 60% was adequate. Forty three (43) questionnaires that were found to be incomplete were discarded and over all 484 questionnaires were dimmed fit for analyses. Various tables that were formed while processing the information and the results obtained from the calculations undertaken are included in this chapter.

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4.2.1 Age of the respondents

Table: 4.4: Distribution by Age in Years

		Frequency	Percent
Valid	20 and below	115	23.8
	21-30	204	42.1
	31-40	113	23.3
	41-50	42	8.7
	51 and above	10	2.1
	Total	484	100.0

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Table 4.4 shows that majority of the respondents were aged below 40 years with (90%) of the respondents being in the age bracket of between 20 and 40 years. The rest of respondents (9%) fell within the age bracket of between 41 and 50 years. This shows that majority of the respondents were in the youth brackets (64%) which is mainly between the age of 18 to 30 years and these are the mobile users who frequented the mobile customer service outlets. This conforms to the common belief that Kenya has a youthful generation with an average age below 30 years. It also reveals that it

is these youthful generation that is pioneering the mobile revolution being experienced in the country today. On the other hand only few respondents visiting the outlets were above the age of fifty (2%) meaning that mobile phone users frequenting the customer service outlet were mainly the youthful generation. This finding is consistent with Trivedi & Sunil (2014) conclusion which stated that organizations promoting m-commerce applications should focus on the Y generation.

Table: 4.5: Gender of the Respondents

		Frequency	Percent
Valid	male	228	47.1
	female	256	52.9
	Total	484	100.0

According to the table (4.5) above, 47% of the respondents were males while 53% were female. This means that the ratio of female and males who frequented the customer care service was nearly equal and also the researcher was not biased while collecting the data. The results also reveal that both women and men were using mobile innovations in approximately equal terms. This is consistent with Venkatesh (2003) findings which stated that technology is no longer perceived as a male domain alone. The study also resonate with Chong (2013) which showed that mobile technologies have become relatively common and the gender barrier is no longer an issue mostly when it comes to the internet based technologies.

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Table: 4.6: Level of Education

		Frequency	Percent
Valid	Secondary	151	31.2
	College	230	47.5
	Primary	32	6.6
	University	71	14.7
	Total	484	100.0

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The table (4.6) shows that 31% of the respondents had a secondary level of education while 48% had attained a college level of education. Only 15% of the respondents had a university level of education and 7% had attained primary level qualifications in education. It can be assumed that the level of human capital that frequented the customer care service was made up of people who had either attained a college and a secondary education qualification. This finding resonate with Chan & Chong (2013) which stated that people with higher education were more likely to use internet than those with low level of education.

Table: 4.7: Marital status

		Frequency	Percent
Valid	Married	174	36.0
	Single	310	64.0
	Total	484	100.0

Table (4.7) shows that 36% of the respondents were married and had families while 64% of the respondents were still single. This means that mobile phones customer care centers were mainly frequented by people who were single supporting the earlier finding that majority of the respondents

were in the youth bracket. This is inconsistent with Isaiah, Omwansa, & Waema (2012) findings in their study which revealed that majority of the respondents were married participants.

Table: 4.8: Consumer Income response

		Frequency	Percent
Valid	0-50000 Ksh	376	77.7
	51000- 100000	74	15.3
	101,000 and above	34	7.0
	Total	484	100.0

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Table (4.8) shows that 78% of the respondent's salaries ranged between a salary bracket of 0 to 50,000 while 15% of the respondents salaries were in a salary bracket of between Ksh51, 000 to Ksh 100,000. Only 7% of the respondent's salaries were in a salary bracket of above Ksh101,000. This means that mobile phones customer care centers were mainly frequented by people in the lower and middle salary bracket. This is inconsistent with central bank of Kenya (CBK 2014) analyses that stated that majority of Kenyan earned salaries below Ksh 50,000. The results are also consistent with Alsheikh & Bojei, (2014) findings in their study which revealed that majority of the respondents were in the middle class group.

4.2 Patterns of Mobile payment services actual usage in Kenya

The respondents were asked to indicate the whether they agreed with the statements on use of the following mobile payment services by ticking the appropriate option. The findings are presented in table

Table: 4.9: Mobile loan services

	I use mobile loan application service to borrow and pay money using wireless mobile payment services					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Frequency	240	66	96	34	48	484
Percent	49.6	13.6	19.8	7.0	9.9	100.0

According to the table (4.9) above, 50% of the respondents stated that they strongly disagreed that they used mobile loan application services, 14% stated that they disagreed with the statement, 20% were neutral and only 17% agreed that they were using the service. This is consistent with Isaiah et al. (2012) which stated that mobile banking applications such as mobile loan were still at the infancy stage in usage.

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Table: 4.10: Mobile money transfer

	I use Mobile money transfer services to transfer money from one account to another using wireless mobile payment services.					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Frequency	14	44	56	187	183	484
Percent	2.9	9.1	11.6	38.6	37.8	100.0

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According to the table (4.10), 3% of the respondents stated that they disagreed with the statement that they had used mobile money transfer services to transfer money from one account to another using wireless mobile payment services, 9% stated that they disagreed with the statement, 12% were neutral while 76% of the respondents agreed that they had used the service. These following results collaborate with previous statistics results indicating that mobile money transfer especially MPESA has become the most widely used mobile payment method (CAK, 2014).

Table: 4.11: Mobile banking

	I use Mobile banking services to carry out banking transaction using mobile payment services.					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Frequency	135	79	112	82	76	484
Percent	27.9	16.3	23.1	16.9	15.7	100.0

According to table (4.11) above, 44 % of the respondents disagreed that they used mobile banking service to carry out banking transaction using wireless payment services. 23% were neutral while only 32% of the respondents agreed with the statement. These following findings collaborate

previous literature and recent statistics which shows that that mobile banking is still at its infancy stage of adoption and usage in Kenya (Isaiah et al., 2012; Njuguna, Ritho, & Olweny, 2012).

Table: 4.12: Mobile pay bill Services

	I use mobile payment services to pay bills in physical and online shops.					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Frequency	80	56	119	118	111	484
Percent	16.5	11.6	24.6	24.4	22.9	100.0

According to table (4.12) above, 28% % of the respondents disagreed that they had used mobile pay bill services to pay their bills in a physical or online shops. 25% were neutral while 47% agreed that they used mobile bill services. The following findings collaborate previous statistics results indicating that mobile money pay bill services especially MPESA has become the most widely used methods for paying bills in Kenya (CAK,2014). The results are also consistent with the finding by the GSMA (2015) which stated that there was an upward growth of mobile payment services as alternative payment mode especially by startup businesses.

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Table: 4.13: Descriptive statistic of social norm on consumer behavior intention to use mobile payment services

	N		Mean	Std. Deviation	Sum
	Valid	Missing			
Mobile Loan	484	0	2.14	1.361	1036
Mobile money	484	0	3.99	1.058	1933
Mobile banking	484	0	2.76	1.423	1337
Mobile pay bill	484	0	3.26	1.370	1576

The table (4.13) above reveals that mobile money transfer service had the highest mean (3.99) and a sum of (1933) followed by mobile pay bill services (3.26) and a sum of (1576) while mobile banking services had a mean of (2.76) and a sum of (1337). Mobile loan services had the lowest mean of (2.14) and a sum of (1036). This means that the most widely used mobile payment service by the consumers in Kenya was mobile money transfer services followed by mobile pay bill services while mobile loan application services and the mobile banking services were still at the infancy stage in usage (Njuguna et al., 2012). This is consistent with Mobile Payments Readness Index (2015) findings which stated that mobile money transfer systems such as MPESA had become one of the most relied upon mode of transferring cash in Kenya.

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4.3 Extrinsic motivation factors.

4.3.1 Social influences Factors

The constructs of measuring social norm were adopted from (Chan & Chong, 2013) and three attributes were used to measure social norm. the response were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.12) summarizes the results

Table: 4.14: Social Norm 1

	Friends suggestions and recommendations will affect my decision to use mobile payment services					
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	114	140	85	114	31	484
Percent	23.6	28.9	17.6	23.6	6.4	100.0

The finding on table (4.14) indicates that, 24% of the respondents strongly disagreed that friend's suggestions influenced their decision to use mobile payment services. 29% disagreed with the statement while 18% were neutral. Only 22% and 8% agreed and strongly agreed with this statement. This shows that majority of the respondents (52%) disagreed or were neutral about the role of friends towards making decision whether to use or not to use mobile payment services. The results also reveal that there were also 30% of the respondents who agreed that they relied on friends to make the decision whether to use or not to use mobile payment service.

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Table: 4.15: Social norm 2

	Family members /relatives have an influence on my decision to use mobile payment services					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	96	130	68	144	46	484
Percent	19.8	26.9	14.0	29.8	9.5	100.0

The finding on the table (4.15) indicates that, 20% of the respondents strongly disagreed that family members had an influence on their decision to use mobile payment services while 27% disagreed with the statement and 13% were neutral. Only 30% and 10% agreed and strongly agreed with this statement. This shows that majority of the respondents (47%) did not recognize the role of the family members or relatives towards making decision whether to use or not to use mobile payment services in Kenya. The study also reveals that 40% of the respondents acknowledged the role of family members while making the decision.

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Table: 4.16: Social norm 3

	I will use mobile payment if the service is widely used by people in my community					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	88	101	40	142	113	484
Percent	18.2	20.9	8.3	29.3	23.3	100.0

The finding on the table (4.16) indicates that, 22% of the respondents strongly disagreed that they would use mobile payment if the service is widely used by people in their community while 20% disagreed with the statement and 10% were neutral. 48% of the respondent either agreed or strongly agreed with this statement. This reveals that the community in which people belong also influence the decision whether to use mobile innovations such as mobile payment services in Kenya.

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Table: 4.17: Descriptive statistic of social norm on consumer behavior intention to use mobile payment services

	N		Mean	Std. Deviation	Sum
	Valid	Missing			
Social norm 1	484	0	2.60	1.253	1260
Social norm 2	484	0	2.82	1.308	1366
Social norm 3	484	0	3.19	1.460	1543

The statistic table (4.17) summary of the findings shows that statement 1(norm1) had a mean of (2.60) and a sum of (1260) while statement 2 (norm 2) had a mean of (2.82) and a sum of (1366). Statement three had a mean of (3.19) and a sum of (1543) meaning that majority of the respondents agreed that their usage of mobile payment service would be influenced by the number of people using the service in their community. The results resonate with Chan & Chong (2013) argument that though transaction based activities may not be influenced by social norms, perceived pressure from social networks such as the community and the peers may influence mobile application users to make a decision on whether to adopt or not. The results are also consistent with Zeng & Ma (2015) that social pressures from friends, neighborhood and relatives had a strong influence on the individual innovativeness which had also a positive effect on the user intention.

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4.3.1.1 Social image

The constructs of measuring social image were adopted from Hwang (2009) and Venkatesh & Davis (2000) where three constructs were used to measure social norm. the response were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.18) summarizes the results

Table: 4.18: Social image 1

	People who use mobile payment services look more prestigious than those who don't					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
Frequency	140	117	61	105	61	484
Percent	28.9	24.2	12.6	21.7	12.6	100.0

The finding on the table (4.18) indicates that, 29% of the respondents strongly disagreed that people who use mobile payment services look more prestigious than those who don't while 24% disagreed with the statement and 13% were neutral. Only 34% of the respondents either agreed or strongly agreed with this statement. This shows that majority of the respondents were of the opinion that using mobile payment services in Kenya was not a source of prestige.

Table: 4.19: Social image 2

	People who use mobile payment services has a superior profile					
	strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	135	150	76	89	34	484
Percent	27.9	31.0	15.7	18.4	7.0	100.0

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The finding on the table (4.19) indicates that, 28% of the respondents strongly disagreed that people who use mobile payment services have a superior profile while 31% disagreed with the statement and 16% were neutral. Only 26% of the respondents either agreed or strongly agreed with this statement. This shows that majority of the respondents were of the opinion that people who used mobile payment services exhibited no superior profile in Kenya.

Table: 4.20: Social Image 3

	Using mobile payment services is a status symbol in my locality					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	134	156	97	79	18	484
Percent	27.7	32.2	20.0	16.3	3.7	100.0

The finding on the table (4.20) indicates that, 60% of the respondents either strongly disagreed or disagreed that using mobile payment services is a status symbol for the people in their locality while 20% were neutral. Only 20% of the respondents either agreed or strongly agreed with this statement.

This means that majority of the respondents disagreed that people who used mobile payment services exhibited any status symbol in their locality.

Table: 4.21: Descriptive statistic of social image on consumer behavior intention to use mobile payment services

	N		Mean	Std. Deviation	Sum
	Valid	Missing			
Social image 1	484	0	2.65	1.414	1282
Social image 2	484	0	2.46	1.264	1189
Social image 3	484	0	2.36	1.156	1143

The statistic table (4.21) summary findings shows that statement 1(image1) had a mean of (2.65) and a sum of (1282) while statement 2 (image 2) had a mean of (2.46) and a sum of (1189). Statement three had a mean of (2.36) and a sum of (1143) meaning that majority of the respondents disagreed that people who use mobile payment services look more prestigious than those who don't. These results are inconsistent with Hwang (2009) findings which stated that social image is a crucial aspect of social influence which is important in the distribution of new products in the market. The results are also inconsistent with Lu et al. (2005) assertion that during acceptance of new payment systems, consumers may experience a feeling of uncertainty about the consequences of using the system and therefore may consult the opinion of other users or copy their behavior.

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4.3.1.2 Perceived usefulness

The measurement of perceived usefulness were adopted from Chan & Chong (2013) where four constructs were used to measure the variable. the responses were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.22) summarizes the results

Table: 4.22: Perceived usefulness 1

	Using mobile payment services enables me to pay more quickly for my services					
	Strongly disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	14	5	44	221	200	484
Percent	2.9	1.0	9.1	45.7	41.3	100.0

The finding on the table (4.22) indicates that, only 4% of the respondents either strongly disagreed or disagreed that using mobile payment services enables them to pay more quickly while 9% were neutral. 87% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents were of the opinion that mobile payment services enabled them to pay more quickly for their services.

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Table: 4.23: Perceived usefulness 2

	Using mobile payment services make it easier for me to conduct transactions					
	Strongly Disagree	Disagree	neutral	Agree	Strongly agree	Total
Frequency	10	4	36	236	198	484
Percent	2.1	.8	7.4	48.8	40.9	100.0

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The finding on the table (4.23) indicates that, only 3% of the respondents either strongly disagreed or disagreed that using mobile payment services makes it easier for them to conduct transactions while 8% were neutral. 89% of the respondents either agreed or strongly agreed with this statement. This indicates that majority of the respondents were in agreement mobile payment services had made it easier for them to conduct transactions in Kenya.

Table: 4.24: Perceived usefulness 3

	I find that mobile payment services are more convenient than using other payment methods					
	Strongly disagree	Disagree	neutral	Agree	Strongly agree	Total
Frequency	24	8	57	193	202	484
Percent	5.0	1.7	11.8	39.9	41.7	100.0

The finding on the table (4.24) indicates that, only 7% of the respondents either strongly disagreed or disagreed that mobile payment services were more convenient than using other payment methods while 12% were neutral. 81% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents agreed that it was more convenient to use mobile payment services than other traditional methods of payment.

4.25: Perceived usefulness 4

	Using mobile payment services enhances my effectiveness in my work					
	Strongly disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	38	28	85	189	144	484
Percent	7.9	5.8	17.6	39.0	29.8	100.0

The finding on the table (4.25) indicates that, only 14% of the respondents either strongly disagreed or disagreed that using mobile payment services enhanced their effectiveness in their work while 18% were neutral. 68% of the respondents either agreed or strongly agreed with this statement. This shows that majority of the respondents were of the opinion that mobile payment use enhanced their effectiveness in their work.

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Table: 4.26: Descriptive statistic of perceived usefulness on consumer behavior intention to use mobile payment services

	N				
	Valid	**Missing**	**Mean**	**Std. Deviation**	**Sum**
PU1	484	0	4.21	.872	2040
PU2	484	0	4.26	.799	2060
PU3	484	0	4.12	1.018	1993
PU4	484	0	3.77	1.167	1825

The statistic table (4.26) summary findings shows that statement 1(PU1) had a mean of (4.21) and a sum of (2040) while statement 2 (PU 2) had a mean of (4.26) and a sum of (2060). Statement three (PU3) had a mean of (4.12) and a sum of (1993) while statement 4 (PU4) had a mean of (3.77) and a sum of (1825) meaning that majority of the respondents agreed that using mobile payment services made it easier for them to conduct transactions and also made it possible for them to pay for the services more quickly. This is consistent with previous studies findings which reported that consumers found mobile payment services to be convenient, quick, effective and easier to conduct transactions than the traditional methods (Chan & Chong, 2013; Issa & Mamoun, 2013; Mardikyan et al., 2012; Wei et al., 2009).

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4.4 Intrinsic motivation factors

4.4.1 Perceived ease of use

The measurement of perceived ease of use were adopted from Chan & Chong (2013) where four constructs were used to measure the variable. the response were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.27) summarizes the results

Table: 4.27: Perceived ease of use 1

	Learning mobile payment services is easy for me					
	strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	12	18	28	212	214	484
Percent	2.5	3.7	5.8	43.8	44.2	100.0

The finding on the table (4.27) indicates that, only 6% of the respondents either strongly disagreed or disagreed that learning mobile payment services would be easy to me while 7% were neutral. 88% of the respondent either agreed or strongly agreed with this statement. This means that majority of the respondents agreed that learning how to use mobile payment services would be easy for them.

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Table: 4.28: Perceived ease of use 2

	I would find it easy to use mobile payment services to do what I wanted to do					
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Frequency	8	18	12	258	188	484
Percent	1.7	3.7	2.5	53.3	38.8	100.0

The finding on the table (4.28) indicates that, only 4% of the respondents either strongly disagreed or disagreed that they would find it easy to use mobile payment services to do what they wanted to do while 3% were neutral. 93% of the respondents either agreed or strongly agreed with this statement meaning that majority of the respondent agreed that they would find it easy to use mobile payment services to do what they want to do.

Table: 4.29: Perceived ease of use 3

	It would be easy for me to become skilful at using mobile payment services					
	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	12	24	35	249	164	484
Percent	2.5	5.0	7.2	51.4	33.9	100.0

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The finding on the table (4.29) indicates that, only 8% of the respondents either strongly disagreed or disagreed that it would be easy for them to become skilful at using mobile payment services while 7% were neutral. 85% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents agreed that it was easy to gain skills on how to use mobile payment services in Kenya.

Table: 4.30:PEOU4

	I find mobile payment services easy to use					
	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	8	16	21	209	230	484
Percent	1.7	3.3	4.3	43.2	47.5	100.0

The finding on the table (4.30) indicates that, only 5% of the respondents either strongly disagreed or disagreed that they find mobile payment services easy to use while 4% were neutral. 92% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents acknowledged that mobile payment services in Kenya were easy to use.

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Table: 4.31: Descriptive statistic of perceived ease of use on consumer behavior intention to use mobile payment services

	N				
	Valid	**Missing**	**Mean**	**Std. Deviation**	**Sum**
PEOU1	484	0	4.24	.904	2050
PEOU2	484	0	4.24	.809	2052
PEOU3	484	0	4.09	.909	1981
PEOU4	484	0	4.32	.837	2089

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The statistic table (4.31) summary findings shows that statement 1(PEOU1) had a mean of (4.24) and a sum of (2050) while statement 2 (PEOU 2) had a mean of (4.24) and a sum of (2052). Statement three had a mean of (4.09) and a sum of (1981) while statement 4 had a mean of (4.32) and a sum of (2089). This means that majority of the respondents agreed that mobile payment services are easy to use and easy to learn. These results are consistent with Chan & Chong (2013) findings which revealed that transaction based activities were influenced by the degree of effort that consumers were ready to apply while using m-commerce applications.

The study results also resonate with Zhou (2014) findings which revealed that when consumers perceive that mobile payment systems are difficult to use or have poor interface, they will not expect a positive utility. The results are also consistent with Teoh et al. (2014) results which stated that when consumers perceive that e-payment systems are easy to use and consumer friendly, it allows them to think that they are in control of the transaction process.

4.4.1.2 Perceived enjoyment.

The measurement of perceived enjoyment were adopted from Chan & Chong (2013) where four constructs were used to measure the variable. The response were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.32) summarizes the resul**ts**

Table: 4.32: PE1

	Using mobile payment services is fun					
	Strongly disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	31	56	118	177	102	484
Percent	6.4	11.6	24.4	36.6	21.1	100.0

The finding on the table (4.32) indicates that, only 18% of the respondents either strongly disagreed or disagreed that using mobile payment services is fun while 24% were neutral. 58% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents agreed that using mobile payment services was fun.

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Table: 4.33:PE2

	Using mobile payment services is pleasant					
	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	18	34	99	213	120	484
Percent	3.7	7.0	20.5	44.0	24.8	100.0

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The finding on the table (4.33) indicates that, only 11% of the respondents either strongly disagreed or disagreed that using mobile payment services is pleasant while 23% were neutral. 67% of the respondents either agreed or strongly agreed with this statement. It means that majority of the respondents were of the opinion that using mobile payment services was pleasant.

Table: 4.34:PE3

	Using mobile payment services is enjoyable					
	Strongly Disagree	Disagree	neutral	Agree	Strongly agree	Total
Frequency	16	30	122	201	115	484
Percent	3.3	6.2	25.2	41.5	23.8	100.0

The finding on the table (4.34) indicates that, only 10% of the respondents either strongly disagreed or disagreed that using mobile payment services is enjoyable while 25% were neutral. 65% of the respondents either agreed or strongly agreed. Majority of the respondents agreed that it was enjoyable to use mobile payment services available in Kenya.

Table: 4 .35: PE4

	Using mobile payment services is exciting					
	Strongly Disagree	Disagree	neutral	Agree	Strongly Agree	Total
Frequency	12	40	126	172	134	484
Percent	2.5	8.3	26.0	35.5	27.7	100.0

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The finding on the table (4.35) indicates that, only 11% of the respondents either strongly disagreed or disagreed that using mobile payment services is exciting while 26% were neutral. 63% of the respondents either agreed or strongly agreed with this statement. Majority of the respondents therefore agreed that using mobile payment services available in Kenya was fun.

Table: 4.36: Descriptive statistic of perceived ease of use on consumer behavior intention to use mobile payment services

	N				
	Valid	**Missing**	**Mean**	**Std. Deviation**	**Sum**
PE1	484	0	3.54	1.135	1715
PE2	484	0	3.79	1.013	1835
PE3	484	0	3.76	.990	1821
PE4	484	0	3.78	1.021	1828

The statistic table (4.36) summary findings shows that statement 1(PE1) had a mean of (3.54) and a sum of (1715) while statement 2 (PE 2) had a mean of (3.79) and a sum of (1835).

Statement three had a mean of (3.76) and a sum of (1821) while statement 4 had a mean of (3.78) and a sum of (1828). This means that majority of the respondents agreed that mobile payment services in Kenya were pleasant, exciting, enjoyable and fun to use. The results correspond with Chan & Chong (2013) results which stated that transaction based activities were influenced by how exciting and fun the services were to the consumer. The study results are also consistent with Chin & Ahmad (2015) which stated that perceived enjoyment contributed 58% towards consumer intention to use mobile payment systems meaning that when the consumers think that the system is enjoyable and fun to use they will be more ready to use the system.

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4.5 Consumer Behavior Intention towards mobile payment use

The measurement of consumer behavior intention were adopted from Zhou (2014) where three constructs were used to measure the variable. The responses were recorded on a five –point likert scale ranging from 1- strongly disagree to 5- strongly agree. Table (4.37) summarizes the results

Table: 4.37: Behaviour Intention 1

	I intend to continue using mobile payment service in future					
	Strongly disagree	Disagree	neutral	Agree	Strongly agree	Total
Frequency	8	10	56	255	155	484
Percent	1.7	2.1	11.6	52.7	32.0	100.0

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The finding on the table (4.37) indicates that, only 3% of the respondents either strongly disagreed or disagreed that they intended to continue using mobile payment services in future while 14% were neutral. 83% of the respondents either agreed or strongly agreed with this statement. This means that majority of the respondents agreed that they intended to continue using mobile payment services in future. This is an important finding which corresponds with Zhou (2014) assertion that due to high cost of acquisition and low customer switching costs, mobile operators should work to retain users and also facilitate their continuance usage of the adopted technology.

Table: 4.38: Behavior Intention 2

	My intention is to continue using mobile payment services than use any alternative means				
	Strongly Disagree	neutral	Agree	Strongly Agree	Total
Frequency	14	14	260	196	484
Percent	2.9	2.9	53.7	40.5	100.0

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The finding on the table (4.38) indicates that, only 6% of the respondents either strongly disagreed or were uncertain about whether they intended to continue using mobile payment services rather than use alternative means. 94% of the respondents agreed or strongly agreed with this statement. This reveals that majority of the respondents acknowledged that they would continue using mobile payment services over other means.

Table: 4.39: Behavior Intention 3

	Using mobile payment services is beneficial to me					
	Strongly disagree	Disagree	neutral	Agree	Strongly agree	Total
Frequency	12	6	45	232	189	484
Percent	2.5	1.2	9.3	47.9	39.0	100.0

The finding on the table (4.39) indicates that, only 4% of the respondents either strongly disagreed or disagreed that using mobile payment services is a pleasant experience while 9% were neutral. 87% of

the respondents either agreed or strongly agreed with this statement. This indicates that majority of the respondents agreed that using mobile payment services was beneficial to them.

Table: 4.40: Descriptive statistic of consumer behavior intention to use mobile payment services

	N		Mean	Std. Deviation	Sum
	Valid	Missing			
BI1	484	0	4.29	.782	2076
BI2	484	0	4.11	.810	1991
BI3	484	0	4.20	.848	2032

The statistic table summary findings shows that statement 1(BI1) had a mean of (4.29) and a sum of (2076) while statement 2 (BI2) had a mean of (4.11) and a sum of (1991). Statement three (BI3) had a mean of (4.20) and a sum of (2032). This means that majority of the respondents acknowledged that using mobile payment services was beneficial to them, they had intention to continue using mobile payment services in future and even over the other alternative means. These results are consistent with Hwang (2009) and Zhou (2014) which stated that retaining users and facilitating their continued usage of the payment systems was important for the survival of mobile service providers.

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4.6 Analysis of data using inferential statistics

This section presents the research findings from numerous statistical techniques which were conducted to achieve reliable conclusion on the information gathered. Factor analyses, Reliability, correlations and hypotheses testing through multiple linear regressions were applied.

4.6.1 Results of Factor analyses tests

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Factor analysis was carried out to select questionnaire items with high factor loading of the research constructs. Kaiser-Meyer-Olkin measure of sampling adequacy which represents the ratio of the squared correlation between variables to the squared partial correlation between variable was carried out. Principal component analyses (CFA) and latent roots (Eigen values) were carried out in this study. The main use of principal component analyses (CFA) includes; compare the ability of two models to account for the same set of data; establishing the strength of a single factor model; testing the significance of a specific factor loading; testing the correlation or non correlation of a set of factors, assess the convergent and discriminate validity of set of measure and lastly testing the relationship between two or more factor loadings. In this study the following criteria were used; Factor loadings > 0.5; Eigen value > 1; communalities > 0.5 and cronbach's alpha > 0.7 and KMO> 0.5 on the findings presented on the next page

The figure (4.1) below shows the procedure of factor analyses and PCA followed

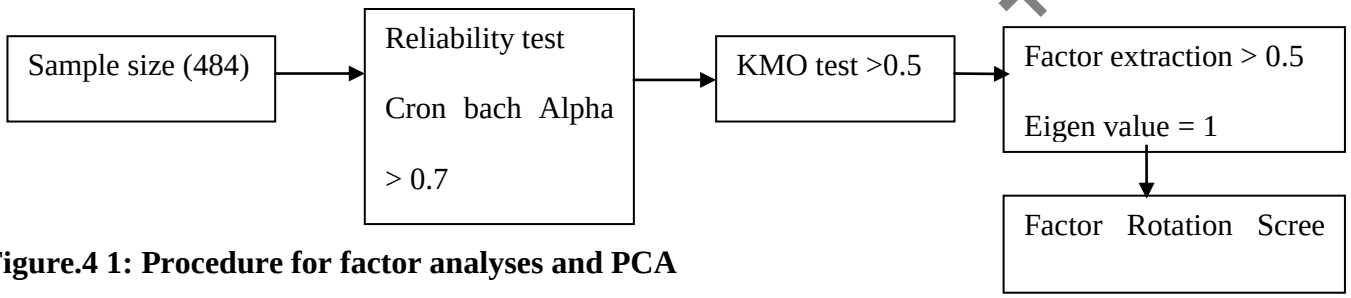

Figure.4 1: Procedure for factor analyses and PCA

Source: (Field, 2013)

4.6.3 Reliability test and sampling Adequacy Testing

In order to ensure that the study measurements are reliable and valid, reliability test using Cronbach (α) test and KMO and Bartlett's test were conducted. These two tests have been used to test validity and reliability of the constructs measurement in similar previous studies as evidenced by; (Chan & Chong, 2013; Teoh et al., 2014). According to Hair (1998) a Cronbach (α) value of 0.7 is considered acceptable in social science studies.

Table: 4.41: Scale validity and reliability test

Cronbach's Alpha	Alpha based on standardized items	Number of items
	0.8563	60

Cronbanch (α) according to (Field, 2013) is used to estimate the proportion of variance that is consistent in test scores ranging from 0.00 if there is no variance to 1.00 if all the variances are consistent. The Cronbach (α) test indicates that the Alpha (α) value based on the standardized item is (0.8563) suggesting that the items included in this study are 85.6% reliable or only 15% are unreliable. The items therefore satisfy the condition of reliability as the results are higher than 0.7 stipulated by Hair (1995) as acceptable.

Based on Field (2013), a high value of Alpha is a self-evidence that the items measuring the constructs have internal consistency and they are closely related as a group. Alpha consistency score of $\alpha = 0.85$ indicates that the study's measuring scale items had a relatively high consistency and therefore the results confirm the reliability of the measuring scale.

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Table: 4.42: Alpha (α) value of reliability test if item is deleted

Item code	Cronbach (α) Alpha if the item is deleted
Social norm 1	0.8548
Social norm 2	0.8655
Social norm 3	0.8651
Social Image 1	0.8588
Social image 2	0.8551
Social image 3	0.8532
Perceived ease of use 1	0.8525
Perceived ease of use 2	0.8468
Perceived ease of use 3	0.8455
Perceived ease of use 4	0.8483
perceived usefulness 1	0.8378
perceived usefulness 2	0.8373
perceived usefulness 3	0.8473
perceived usefulness 4	0.8402
Perceived enjoyment 1	0.8457
Perceived enjoyment 2	0.8437
Perceived enjoyment 3	0.8423
Perceived enjoyment 4	0.8458
Behavior intention 1	0.8499
Behavior intention 2	0.8475
Behavior intention 3	0.8478

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Based on Field (2013), Cronbach Alpha if item deleted is an index that shows the drop in the sample value if dispensing with the scale component was used to identify the items that reduced internal consistency of the tool. Table (4.42) shows that deletion of any item could have resulted to an insignificant increase of the overall scale by 0.85 and therefore, no item question was deleted from the instruments included in this study.

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4.6.4 KMO and Bartlett's Test

Based on the Field (2013) Kaiser- Meyer-Olkin measure of sample adequacy (KMO) measures sample adequacy while Barlett test of Sphericity tests the null hypothesis that the correlation matrix is an identity matrix. Table (4.43) presents the Kaiser-Meyer- Olkin measure of sampling adequacy and Bartlett's Test of Sphericity. The values of KMO test ranges between 0 and 1 where values close to 1 show that patterns of correlations are relatively compact and factor analyses would yield reliable factors. The results on the table (4.43) show that KMO test value was 0.827 which is well beyond 0.5.This means that the patterns of correlations are compact and the factor analyses would yield reliable factors. A Bartlett's Test of Sphericity significant of 0.00 levels indicates that the null hypothesis of an identity matrix should be rejected. This means that we should proceed with factor analyses.

Table: 4.43: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
	Approx. Chi-Square	Df	Sig.
.827	5880.418	210	.000

More over table (4.44) presents the communalities test result before and after extraction. The principal component analyses assume that all variances before extraction have communalities equal to one. According to Field (2013) communalities is the proportion of common variance within variables or a proportion of variance explained by underlying factors.

Table: 4.44: Communalities

	Initial	Extraction
Mobile loan use	1.000	.563
Mobile money transfer use	1.000	.756
Mobile banking use	1.000	.600
Mobile pay bill use	1.000	.700
NORM	1.000	.625
NORM2	1.000	.697
NORM3	1.000	.639
IMAGE1	1.000	.713
IMAGE2	1.000	.778
IMAGE3	1.000	.634
PEOU1	1.000	.592
PEOU2	1.000	.698
PEOU3	1.000	.744
PEOU4	1.000	.686
PU1	1.000	.746
PU2	1.000	.798
PU3	1.000	.736
PU4	1.000	.628
PE1	1.000	.762
PE2	1.000	.770
PE3	1.000	.860
PE4	1.000	.783
PERC1	1.000	.750
PERC2	1.000	.760
PERC3	1.000	.718

Extraction Method: Principal Component Analysis.

Based on the table above, all the variables had a factor loading of < 0.5 meaning that no variable or statement was extracted or deleted at this stage

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Table: 4.45: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.292	29.167	29.167	7.292	29.167	29.167
2	2.838	11.352	40.519	2.838	11.352	40.519
3	2.043	8.174	48.693	2.043	8.174	48.693
4	1.813	7.251	55.944	1.813	7.251	55.944
5	1.582	6.330	62.273	1.582	6.330	62.273
6	1.090	4.361	66.634	1.090	4.361	66.634
7	1.077	4.306	70.940	1.077	4.306	70.940
8	.931	3.722	74.662			
9	.868	3.471	78.134			
10	.682	2.726	80.860			
11	.590	2.361	83.221			
12	.526	2.103	85.324			
13	.480	1.919	87.243			
14	.442	1.769	89.012			
15	.417	1.669	90.681			
16	.356	1.422	92.103			
17	.326	1.303	93.405			
18	.303	1.210	94.616			
19	.260	1.039	95.655			
20	.238	.954	96.609			
21	.207	.829	97.438			
22	.203	.810	98.248			
23	.173	.690	98.938			
24	.159	.635	99.574			
25	.107	.426	100.000			

Extraction Method: Principal Component Analysis.

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Table (4.45) indicates that there were only seven (7) factors with eigen values greater than 1. The % of the variance column indicates the total variability accounted for by each of the summary factors. Component 1 accounts for 29.167% of the variability in the 25 variables. Component 2 accounted for 11.352% of the variability in the 25 variables. Component 3 accounted for 8.174% of the variability in the 25 variables. Component 4 accounted for 7.251% of the variability in the 25 variables.

Component 5 accounted for 6.330% of the variability in the 25 variables while component 6 accounted for 4.361% of the variability in the 25 variables while component 7 accounted for 4.306% of the variability in the 25 variables. The total variance explained show that seven factors explain 70% of the total variance. According to Hair (1995) total variance explained should be over 50% meaning that the condition is satisfied. The scree plot for the items under the study constructs is provided below and it shows that the slope of the curve levels out after 21st components as indicated on the diagram below.

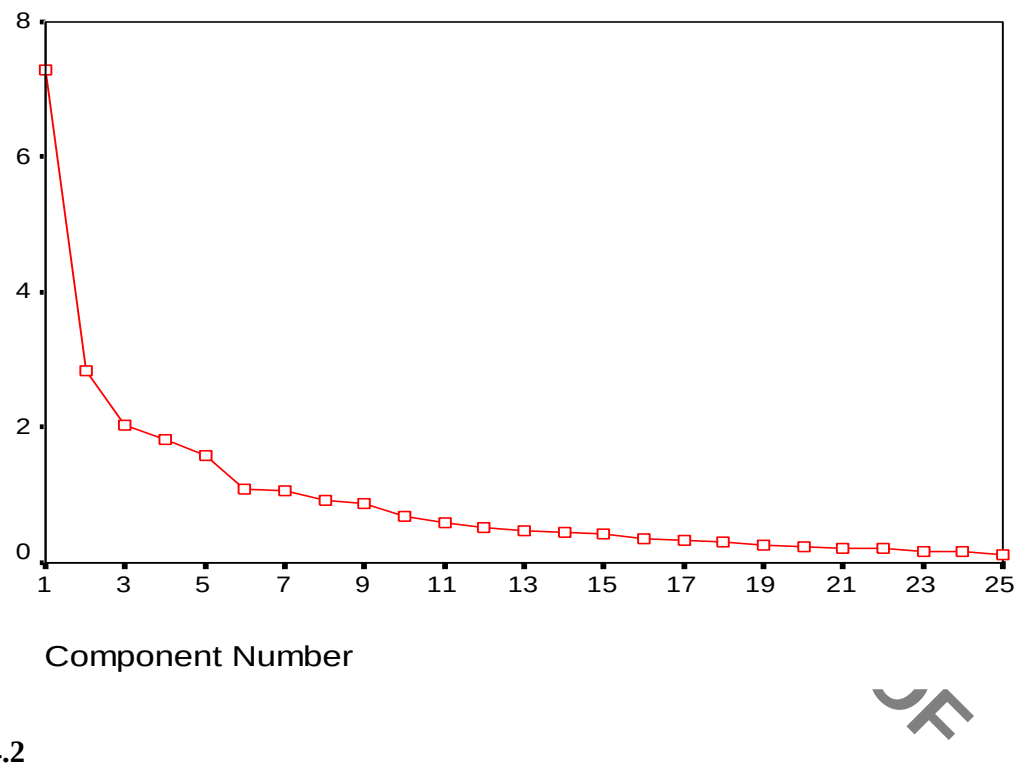

Figure 4.2

The objective of the principal component analyses was to formulate the hypothesis to be tested in this study. The scree plot shown above of eigen value and component numbers shows that the factors fully leveled at 23rd factor suggesting that approximately all the factors were contributing significantly in this study. Despite the findings all the study factors were included in the final regression model based on Hair (1995) suggestion that for any factor to be considered, it should

explain about 5% of the overall variance. Based on the table (4.45) all the study factors were important since they explained 5% of the total variance. More over Field (2013) stated that principal component analyses does not provide enough evidence to conclude that a set of items should be discarded because in some instances the results from this analyses may yield only one factor despite the items having a correlation of 0.1 with each other. In addition he argued that the three criteria (communality, factor extraction and principal component analyses) often provide different answers and therefore communalities of the factors need to be considered as it represent the common variance (Field, 2013).

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Table: 4.46: Component Matrix (a)

	Component						
	1	2	3	4	5	6	7
Mobile loan	.224	.449	-.482	-.012	.205	-.192	.018
Mobile money	.323	.194	-.367	.221	.420	.502	.024
Mobile banking	.310	.401	-.407	.150	.191	-.306	.158
Mobile pay bill	.346	.261	-.430	.212	.396	.252	.251
NORM	.263	.364	.363	.353	.140	-.159	-.349
NORM2	-.046	.352	.624	.340	.193	.161	-.055
NORM3	.012	.414	.601	-.037	.138	.292	.024
IMAGE1	.162	.758	.058	-.030	-.296	-.144	-.015
IMAGE2	.252	.712	-.082	.039	-.362	-.148	.215
IMAGE3	.223	.675	.224	-.067	-.235	.064	.122
PEOU1	.449	.003	.179	-.027	.596	-.021	-.047
PEOU2	.692	-.199	.171	.076	.211	-.317	.007
PEOU3	.668	-.089	.250	-.029	.277	-.364	-.130
PEOU4	.657	-.281	.160	.232	.131	-.174	.220
PU1	.664	-.306	.151	.243	-.179	.037	.310
PU2	.684	-.226	.112	.269	-.179	.058	.398
PU3	.657	-.206	.004	.261	-.363	.211	.133
PU4	.745	.040	.069	.197	-.131	.070	-.077
PE1	.643	-.116	.213	-.484	-.021	.234	.004
PE2	.712	.063	-.034	-.474	-.027	.106	-.146
PE3	.766	-.004	.036	-.513	.004	-.036	.084
PE4	.666	.082	-.030	-.556	.102	-.026	.108
PERC1	.640	-.196	-.190	.257	-.219	.021	-.389
PERC2	.644	.142	-.229	-.003	-.139	.263	-.429
PERC3	.695	-.084	-.238	.226	-.189	-.075	-.282

Extraction Method: Principal Component Analysis.
a 7 components extracted.

The component matrix shows the factor loading for the variables. Based on the factor loadings, it can be concluded that all the factors loaded strongly in the various components.

4.7 Regression Analyses

To test the hypothesis proposed in the study, all the variables were selected and entered in SPSS in order to determine the correlation with the dependent variable. A summary of multiple regression analyses was carried out where the seven variables being tested were entered into the SPSS as independent variable while the consumer behavior intention was entered as the dependent. This was done to test the influence of these seven variables on the consumer behavior intention to use mobile payment services in Kenya. Secondly, simple regression was carried out to test the relationship between the consumer behavior intention and the actual usage of the mobile payment services. In both scenarios, any hypothesis that didn't meet a 0.05 significant level was rejected.

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4.7.1 Testing the model fitness

In order to analyze the drivers influencing consumer behavior intention to use mobile payment services, a multiple regression analysis with seven independent variables was carried out. Table (4.47) below shows the results of the Durbin-Watson adjusted R^2 for and model fitness results.

Table: 4.47: Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.663(a)	.440	.431	1.55738	2.050

a Predictors: (Constant), NORM, GENDER, EDUCAT, PE5, IMAGE4, PU5, PEOU5

b Dependent Variable: Behavior intention

Durbin-Watson statistic, adjusted R^2 and F change was used to test the model fitness. Field (2013) indicated that the regression model needs to meet the assumption that there is no serial correlation problem among residuals. Thus, Durbin-Watson is a measure to test whether residuals are serial

correlated and its value is between zero and four. If it is close to zero, it means a positive serial correlation, if it is close to two it means that there is no serial correlation problem (Field, 2013). Thus, in this model the Durbin-Watson value is 2.050 which is between the two critical values 1.5<d<2.5 implies that there is no serial correlation among the residuals.

The coefficient of determination R^2 and adjusted R^2 are 0.440 and 0.431 respectively meaning that 43.1% of the variation of consumer behavior intention to use mobile payment services was explained by the six independent variables. R^2 value ranges from zero and one, the closer the value is to one, the better "fit" the model is.

Table: 4.48: ANOVA (b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	905.740	7	129.391	53.348	.000(a)
	Residual	1154.500	476	2.425		
	Total	2060.240	483			

a Predictors: (Constant), social norm, Gender, Education, PE5, social imageE4, PU5, PEOU5

b Dependent Variable: Behavior intention to use mobile payment services

The results of the significant test of regression model F value of 53.348 and sig f is 0.000 indicates that the model has a significant statistic and it indicates the "goodness" of fit of the model. According to (Field, 2013), for the model to have significant statistic meaning, the F change value should be greater than 10

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Table: 4.49: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.821	.631		2.885	.004
	Social image	.006	.023	.010	.261	.794
	PEOU	.181	.032	.234	5.617	.000***
	PU	.299	.032	.370	9.395	.000***
	PE	.123	.024	.218	5.042	.000***
	Gender	.099	.144	.024	.686	.493
	Education	.234	.073	.111	3.197	.001***
	Social norm	.076	.060	.046	1.257	.209

a Dependent Variable: Behavior intention to use

Sig * P= 0.01 significance ** P = 0.05 significance *** P = 0.001

The standard coefficients show that customer social image has a standard coefficient of (0.010) and a significant value of (0.794) ; perceived ease of use β (0.234) and a significant value of (0.000) ; perceived usefulness β (0.370) and a significant value of (0.000) ; gender β (0.024) and a significance value of (0.493); education level β (0.111) and a significance value of (0.000) while social norm had β (0.046) and a significance value of (0.209). This means that at a significance value of (0.05); perceived usefulness, perceived ease of use, education level and perceived enjoyment were all significant while social norm, social image and gender were not significant.

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Summary of the multiple regression analyses

Table: 4.50: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.582(a)	.339	.334	1.68589

a Predictors: (Constant), Education, Gender, Extrinsic, Intrinsic

The coefficient of determination R^2 and adjusted R^2 are 0.339 and 0.334 respectively meaning that 33.4% of the variation of behavior intention towards consumer mobile payment use was explained by the four independent variables showing that the regression model's good explanation ability and fitting effect is significant. R^2 value ranges from zero and one, the closer the value is to one, the better "fit" the model is.

Table: 4.51: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	698.822	4	174.705	61.468	.000(a)
	Residual	1361.418	479	2.842		
	Total	2060.240	483			

Predictors: (Constant), Education, Gender, Extrinsic, Intrinsic
Dependent Variable: consumer intention

The results of the significant test of regression model F value of 61.468 and sig f is 0.000 indicates that the model has a significant statistic meaning and it indicates the "goodness" of fit of the model. According to Field (2008), for the model to have significant statistic meaning, the F change value should be greater than 10

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Table: 4.52: Coefficients

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.313	.608		7.093	.000***
	Extrinsic	.046	.013	.137	3.539	.000***
	Intrinsic	.196	.015	.522	13.399	.000***
	Gender	-.020	.155	-.005	-.132	.895
	Education	.289	.079	.137	3.677	.000***

a Dependent Variable: consumer intention
sig *** P = 0.001 ** P = 0.005 * P = 0.01

The standard coefficients shows that extrinsic motivation has a standard coefficient of (0.137) and a significant value of (0.00) ; intrinsic motivation β (0.522) and a significant value of (0.000) ; Gender β (-0.005) and a significant value of (0.895) while education level β (0.137) and a significance value of (0.00). This means that at a significance value of (0.05); extrinsic motivation, intrinsic motivation and education were all significant while gender was not significant.

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Table: 4.53: Testing the gender difference between various mobile payment services offered in Kenya

	Levene's Test for Equality of Variances				
	F	Sig.	t	Df	Sig. (2-tailed)
Mobile loan	.150	.698	-.002	482	.998
			-.002	477.342	.998
Mobile money	6.906	.009	1.500	482	.134
			1.514	480.992	.131
Mobile banking	.232	.631	-2.238	482	.026
			-2.247	480.968	.025
Mobile pay bill	1.029	.311	-3.664	482	.000
			-3.651	467.457	.000

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The independent table shows that there was significant difference in gender on the use of mobile payment services such as mobile banking with a significant value of (0.25) and mobile pay bill significant value of (0.00). This means that more female consumers were using mobile banking and mobile pay bill services than men.

Table: 4.54: Testing the difference between genders in drivers influencing consumer behavior intention to use mobile payment services

	Levene's Test for Equality of Variances				
	F	Sig.	t	Df	Sig. (2-tailed)
Social Image	1.214	.271	-.622	482	.534
			-.619	463.251	.536
PEOU	7.816	.005	-.725	482	.469
			-.732	480.016	.464
PU	2.214	.137	1.482	482	.139
			1.472	457.150	.142
PE	.019	.890	-2.616	482	.009
			-2.631	481.893	.009
BI	2.380	.124	-.820	482	.412
			-.811	437.797	.418
Social norm	.873	.351	-1.058	482	.291
			-1.057	473.560	.291

Using an independent T sample test table (4.49) shows the results of test conducted to determine whether there exist any significant gender differences in the drivers influencing consumer behavior intention to use mobile payment services in Kenya. Based on the results, it can be concluded that a significant difference was only observed in perceived enjoyment (PE) which was significant (0.009) at p-level of 0.05.

4.8 Consumer behavior intention and actual mobile payment use in Kenya

The section below explains the hypotheses that was formulated to determine the influence of consumer intention and actual mobile payment use in Kenya. Hypothesis ($H8_a$) "*consumer behavior intention has a positive and significant influence on the actual use of mobile payment services in Kenya"* was analyzed. Thus the rejection or acceptance of this hypothesis is based on the results of the hypotheses test:

Table: 4.55: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.611	1.004		4.593	.000
	Behavior intention	.598	.079	.327	7.601	.000

a Dependent Variable: Mobile payment actual use

Table (4.50) illustrates that the standard coefficient of mobile payment use is 0.327 and the significant levels are (0.00). This means that consumer behavior intention and actual mobile payment use are positively and significantly correlated**.**

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4.9 Analyses of the results

This section analyses the hypotheses that were tested using multiple linear regression. In other words, it analyses those hypotheses that were formulated to test the relationship between multiple independent variables and the dependent variable (behavior Intention) with the following model:

Behavior intention to use = f (Gender, Education, social norm, social image, perceived ease of use, perceived usefulness, perceived enjoyment).

H1: Social norms significantly influence behavior intention to use mobile payment services in Kenya.

The standardized coefficient of social norms is $\beta = 0.046$ and related probability sig is (0.207). It seems that social norm and consumer intention towards mobile payment use are not significantly correlated. The empirical result does not support the alternative hypothesis that social norms significantly influence behavior intention towards mobile payment use by Kenya's consumers and is thus rejected. Hence the null hypothesis which states that social norm does not significantly influence behavior intention towards mobile payment usage is accepted.

These results are consistent with Chan & Chong (2013) findings which stated that social influence such as social norm has a significant influence on some of m-commerce activities such as content delivery and entertainment activities and does not significantly influence transaction and location based activities. As mobile payment service is m-commerce transaction activity, this study finding is therefore consistent with these results. The finding is also inconsistent with the results from a study carried out by Wei et al., (2009) which revealed that social influence had a positive influence on consumer intention to adopt and use m-commerce applications especially to the consumer below the age of thirty (30). Moreover, the results are also inconsistent with Dickinger, Arami, & Meyer, (2007) study which found out that social norms are important antecedents for the adoption of technology with network externalities and Teo & Lee (2010) findings which concluded that subjective norm was a significant predictor of behavior intention to use technology. Despite the

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insignificant relationship social norm has a positive standard coefficient which means that it remains an important factor all together and this is supported by descriptive statistics which revealed that although the respondents disagreed that family/ relatives and close friends didn't have a lot of influence on their decision of whether to use or not to use mobile payment services, 48% of the respondents agreed that they would use mobile payment service if it is used by the people in their communities.

H2: Social image significantly influence behavior intention to use mobile payment services in Kenya.

The standardized coefficient of business size is $\beta = 0.010$ and related probability sig is (0.794). The results reveal that social image and consumer intention towards use of m-payment services are not significantly correlated. The empirical result does not support the alternative hypothesis which intimated that social image significantly influence consumer behavior intention to use mobile payment in Kenya and is thus rejected. Hence the null hypothesis which states that social image does not significantly influence consumer behavior intention to use mobile payment services is accepted. This result is inconsistent with findings which revealed that social influence variables such as social image and social norm had the highest influence on the intention to use mobile payment services (Chong, 2014).

H3: Gender significantly influence consumer behavior intention to use mobile payment services in Kenya

The standardized coefficient of gender is $\beta = (0.024)$ and related probability sig is (0.493). The results reveal that gender does not significantly influence consumer behavior intention to use mobile payment services are not significantly correlated at (0.05) level of significance. The empirical result does not support the alternative hypothesis that genders significantly influence consumer behavior intention to use mobile payment use Kenya and is thus rejected. The results resonate with Chan & Chong (2013) findings which stated that gender has no influence on the all the m-commerce usage activities (transactional , location based, entertainment and content delivery) tested in the study. The

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results also resonates with Mardikyan, Beşiroğlu, & Uzmaya (2012) findings which stated that gender did not influence consumer behavior intention to use 3G technology applications. However when an independent T test was used to test whether gender difference existed on the drivers influencing consumer behavior intention on mobile payment use, the results showed a significant difference in perceived enjoyment existed with significance of (0.009) meaning that Perceived enjoyment had a much higher influence on women behavior intention to use mobile payment services than men. This is consistent with Cabanillas (2014) findings which revealed that some drivers of mobile payment use were different in male and female. The results also showed that there was no differences in overall consumer behavior intention to use mobile payment services results that are consistent with Mardikyan et al. (2012) findings which revealed that there was no significant difference in the behavior intention to use 3G technologies among gender.

H4: Education level significantly influence behavior attitude towards mobile payment use

The standardized coefficient of education level is β= (0.111) and related probability sig is (0.001). The results reveal that education level and consumer behavioral intention to use of m-payment services are significantly correlated at (0.05) level of significance. The empirical result does support the alternative hypothesis that education level does not significantly influence consumer behavior intention to use to mobile payment use in Kenya and is thus accepted. Hence the null hypothesis which states that education level does not significantly influence consumer behavior intention to use mobile payment is rejected. This result is consistent with previous study findings by Chan & Chong (2013) which stated education level had a significant positive relationship with activities such as transaction and location based services. The results also resonate with Chinn & Fairlie (2006) findings which found out that people with higher educational level are more likely to use internet applications.

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H5: perceived ease of use significantly influences consumer behavior intention to use mobile payment services in Kenya.

The standardized coefficient of business size is (0.234) and related probability sig is (0.000). The results reveal that perceived ease of use and consumer behavior intention to use mobile payment services are significantly correlated at (0.05) level of significance. The empirical result supports the alternative hypothesis that perceived ease of use significantly influences consumer behavior intention to use mobile payment in Kenya and is thus accepted. Hence the null hypothesis which states that perceived ease of use does not significantly influence consumer behavior intention to use mobile payment is rejected. This resonates with previous studies (Trivedi & Sunil, 2014, Chan & Chong, 2013; Hwang, 2009; Pousttchi & Wiedemann, 2014; Wei et al., 2009) which indicated a positive and significant influence of perceived ease of use to the attitude/ intention or perception towards consumer usage of mobile payment services. The results also resonate with (Teoh et al., 2014) finding on the factors affecting consumer perception to use E-payment which also concluded that Perceived ease of use significantly influenced consumer perception to use e-payment systems. The study also reveals that there is no significant difference of perceived ease of use influence on both genders results consistent with Cabanillas (2014) findings which showed that perceived ease of use influenced the consumer intention to use mobile payment services in both genders.

H6: perceived usefulness significantly influence consumer behavior intention to use mobile payment services in Kenya.

The standardized coefficient of perceived usefulness is (0.370) and related probability sig is (0.000). The results reveal that perceived usefulness and consumer behavior intention to use mobile payment services are significantly correlated at (0.05) level of significance. The empirical result therefore supports the alternative hypothesis that perceived usefulness significantly influence consumer behavior intention to use mobile payment in Kenya and is thus accepted.

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Hence the null hypothesis which states that perceived usefulness does not significantly influence consumer behavior intention to use mobile payment services is rejected. This is consistent with previous studies findings by Trivedi & Sunil (2014) and Chan & Chong (2013) which revealed that perceived usefulness had a significant influence on m- commerce usage in transaction, content delivery and entertainment activities. The study is also consistent with Pousttchi & Wiedemann, (2014) and Wei et al. (2009) findings which showed that perceived usefulness had a significant impact on intention to use mobile payments procedures. The study also found out that there was no significant difference between perceived usefulness (PU) influences on consumer behavior intention among genders. This finding is supported by Cabanillas (2014) and Mardikyan et al. (2012) who found no significant difference.

H7: perceived enjoyment significantly influence consumer behavior intention to use mobile payment services in Kenya.

The standardized coefficient of perceived enjoyment (0.218) and related probability sig is (0.000). The results reveal that perceived enjoyment and consumer behavior intention to use mobile payment services in Kenya are significantly correlated at (0.05) level of significance. The empirical result support the alternative hypothesis that perceived enjoyment significantly influence consumer behavior intention to use mobile payment services in Kenya and is thus accepted. Hence the null hypothesis which states that perceived enjoyment does not significantly influence consumer behavior intention to use mobile payment services is rejected. This finding resonates with previous studies results such as Chan & Chong (2013) which revealed that motivation variables such as perceived enjoyment played a crucial role in user engagement with m-commerce activities. Dickinger, Arami, & Meyer (2007) also revealed that perceived enjoyment is an important antecedents for the adoption of technologies with network externalities.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

H8: behavior intention to use mobile payment services positively influences actual use of mobile payment services in Kenya.

The standardized coefficient of perceived enjoyment (0.327) and related probability sig is (0.000). The results reveal that behavior intention and actual consumer use of mobile payment services in Kenya are significantly correlated at (0.05) level of significance. The empirical result support the alternative hypothesis that behavior intention to use mobile payment services positively influences actual use of mobile payment services in Kenya and is thus accepted. This is consistent with previous research findings by (Faziharudean & Li-Ly, 2011; Issa & Mamoun, 2013; Mardikyan et al., 2012; Venkatesh & Davis, 2000; Zhou, 2014) which concluded that behavior intention was a strong predictor of actual technology use.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Consumer behavior intention to use mobile payment services = 1.821 + 0.076X1 +0.006X2 + 0.024X3 + 0.099X3 + 0.234X4 + 0.181X5 + 0.299X6 + 0.123X7

Where; X1 = social norm, X2= social image, X3= gender, X4 = education level

X5= perceived ease of use, X6 = perceived usefulness, X7= perceived enjoyment

Actual mobile payment use = 4.611 + 0.598X1

Where; X1 = behavior intention

Based on the study, four hypotheses are supported according to the findings. Table 4.56 below shows a summary of hypothesis testing and decisions.

Table: 4.56: Results of the hypothesis tested

Hypothesis	Description	Beta	p-value	Sig level	Results
H1	Social norm significantly influence consumer behavior intention to use mobile payment services in Kenya	0.046	0.209	0.05	**Not supported**
H2	Social image significantly influence consumer behavior intention to use mobile payment services in Kenya	0.010	0.794	0.05	**Not Supported**
H3	Gender significantly influences consumer behavior intention to use mobile payment services in Kenya.	0.024	0.493	0.05	**Not Supported**
H4	Education significantly influences consumer behavior intention to use mobile payment service in Kenya.	0.111	0.009	0.05	**Supported**
H5	Perceived ease of use (PEOU) significantly influences consumer behavior intention to use mobile payment services in Kenya.	0.234	0.000	0.05	**Supported**
H6	Perceived usefulness (PU) significantly influence consumer behavior intention to use mobile payment services in Kenya	0.370	000	0.05	**Supported**
H7	Perceived enjoyment significantly influence consumer behavior intention to use mobile payment services in Kenya	0.218	0.00	0.05	**Supported**
H8	Behavior intention has a positive influence on actual mobile payment use in Kenya	0.327	0.00	0.05	**supported**

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

4.10 Discussions

The primary objective of this study was to investigate drivers influencing consumer intention and use of mobile payment services in Kenya. By adopting the unified theory of acceptance and use of technology, the study tested both intrinsic and extrinsic motivation factors together with demographic factors. Intrinsic motivation factors studied included; perceived ease of use (PEOU) and perceived enjoyment (PE) while the extrinsic motivation factors studied included; social influence (social norm and image) and perceived usefulness (PU). Demographic factors studied included gender and education level.

4.10.1 Descriptive statistics

Descriptive statistics showed that 89% of the respondents were between the age of 20 year and 40 years and only 11% of the respondents were beyond the age of 40 years. 62% of the respondents had either attained college or university education while 64% of the respondents were single and 36% were married. This shows that majority of the respondents were either young, single and educated consumers which is consistent with previous studies findings as evidenced by (Chan & Chong, 2013; Mardikyan et al., 2012; Trivedi & Sunil, 2014).

MPESA was the most widely used mobile payment service with 90% of the respondents indicating that it was the service of choice. This is consistent with recent statistics (CAK, 2015) which showed that MPESA controlled the largest market share of mobile payment services in Kenya's mobile industry. Mobile money transfer was the most widely used mobile payment service with 97% of the respondents indicating that they had at one time used the service. The usage of mobile pay bill services was also in an upward trend with 84% of the respondent indicating that they had at one time used mobile pay bill service. Mobile banking and mobile loan application services had the lowest usage with only 55% and 36% of the respondents acknowledging that they had used the services

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

respectively. These results are consistent with the previous study carried out by Njuguna, Ritho, & Olweny (2012) that showed that e-banking was still at the infancy stage of development.

4.10.2 Motivation factors

The study tested both intrinsic and extrinsic motivation factors. Two extrinsic motivation factors which included social influence and perceived usefulness (PU) were tested in this study. The following section discusses the results and findings.

Social influence and consumer behavior intention to use mobile payment services

Based on the results derived from the study social influence was represented by two indicators (social norm and social image). The two indicators were found to have no significant influence on the consumer behavior intention to use mobile payment services in Kenya. The first hypothesis **(H1)** which tested the relationship between social norms and consumer behavior intention to use mobile payment services showed that there was no significant influence between social norms and consumer intention to use mobile payment services.

The second hypothesis **(H2)** tested the influence of social image on the consumer intention to use mobile payment services and the results revealed that social norm had no significant influence. This means that social influence has no significant influence on consumer intention to use mobile payment services in Kenya. The results are consistent with Chan & Chong (2013) study results which showed that social factors did not influence the use of mobile commerce activities that were transaction based in Malaysia. The results are inconsistent with Issa & Mamoun (2013) and Mardikyan et al. (2012) studies which showed that social influence had a strong and positive influence on the behavior intentions to accept and use m-commerce in Jordan and Turkey.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Perceived usefulness and consumer behavior intention to use mobile payment services

In the study, hypothesis seven **(H6)** tested the influence of perceived usefulness on consumer behavior intention to use mobile payment services in Kenya. The study results revealed that perceive usefulness (PU) had the strongest influence on consumer behavior intention to use mobile payment services in Kenya. This is consistent with prior studies (Alkhunaizan & Love, 2013; Chan & Chong, 2013; Issa & Mamoun, 2013; Teoh et al., 2014; Wei et al., 2009) which showed that perceived usefulness (PU) had a positive influence and significant influence on the behavior intention to use m-commerce applications.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Intrinsic motivation and consumer behavior intention to use mobile payment services

Two intrinsic motivation factors; perceived ease of use (PEOU) and perceived enjoyment (PE) were tested. The fifth hypothesis (**H5**) tested the influence of perceived ease of use (PEOU) on consumer behavior intention to use mobile payment services in Kenya. The results revealed that there was a strong significant influence between perceived ease of use (PEOU) on consumer behavior intention to use mobile payment services. These results are consistent with prior studies results undertaken by (A Dickinger et al., 2007; Issa & Mamoun, 2013; Teoh et al., 2014). In these studies perceived ease of use (PEOU) was found to have a positive and significant influence on consumer perception, behavior intention and intention to use m-commerce applications. The results are also consistent with Zeng & Ma (2015) and Chan & Chong (2013) findings that showed that PEOU influenced the usage of all the four m-commerce activities (transaction, entertainment, location based and content delivery) tested in the study.

Perceived enjoyment and consumer behavior intention to use mobile payment services

Hypothesis six **(H7)** tested the influence of perceived enjoyment on consumer behavior intention to use mobile payment services in Kenya. The results revealed that perceived enjoyment had a strong

influence on the consumer intention to use mobile payment services in Kenya. This resonate with studies carried out by (Dickinger et al., 2007; Chan & Chong, 2013) which stated that perceived enjoyment was an important driver influencing m-commerce applications adoption and use. In particular Chan & Chong (2013) study showed that perceived enjoyment influenced the usage of all m-commerce activities tested in the study. The results are also consistent with Chemingui & lallouna (2013) findings which stated that perceived enjoyment had a positive and significant impact on the use of mobile banking services in Tunisia.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Demographic factors and consumer behavior intention to use mobile payment services

Based on the results derived from the study, two demographic variables (education level and gender) were tested to determine their influence on consumer behavior intention to use of mobile payment services in Kenya. Hypothesis three **(H3)** which tested gender influence on consumer intention to use of mobile payment revealed that gender had no direct and significant influence on consumer intention to use mobile payment in Kenya. This is consistent with Issa & Mamoun (2013) and (Alkhunaizan & Love (2013) which stated that gender did not significant influence behavior intention towards m-commerce use. The result are also consistent with Chan & Chong (2013) findings which showed that gender had no influence on the usage of m-commerce activities such as (transaction, content delivery, entertainment and location based services). The researcher also found out that there was no significance difference in consumer behavior intention to use mobile payment services among genders but there was a significant difference in factors influencing consumer behavior intention such as perceived enjoyment (PE).This is consistent with Mardikyan et al. (2012) and Cabanillas (2014) results.

Hypothesis four **(H4)** tested the influence of education level on consumer behavior intention to use mobile payment services in Kenya. The results revealed that there was significant influence of

education level on consumer behavior intention to use mobile payment in Kenya. This result resonate with Chan & Chong (2013) when education level is tested in a direct relationship but are inconsistent with (Alkhunaizan & Love, 2013; Issa & Mamoun, 2013) when education level is tested as a moderating variable.

Hypothesis eight **(H8)** tested the relationship between behavior intention and actual use of mobile payment services. The results revealed that there was a significant and positive relationship between mobile consumer behavior intention and actual usage of mobile payment services in Kenya. The results are consistent with previous studies findings such as (Ajzen, 1991; Issa & Mamoun, 2013; Venkatesh & Davis, 2000).

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

4.11 Summary of the chapter

The results of the data gathered from the questionnaire have assisted the researcher in reaching certain conclusions on the formulated hypotheses. Through these results, the researcher discovered that perceived usefulness, perceived ease of use, perceived enjoyment and education level positively influence consumer intention to use mobile payment service in Kenya while social influence and gender have no significant influence. The researcher also found out that perceived enjoyment had more influence on consumer behavior intention among women than men.

The following chapter provides a comprehensive discussion of conclusion drawn from these findings. Moreover, recommendations and managerial implications on aspect of mobile payment usage and the drivers are discussed. Lastly, the chapter ends by highlighting limitations of this study as well as suggesting areas of further research.

CHAPTER FIVE

Summary, Recommendations and Conclusion

5.0 Introduction

This chapter presents a summary of the study, conclusions, and recommendations. Section 5.2 summarizes the study findings, section 5.3 draws conclusions from the findings, and section 5.4 presents the recommendations.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

5.1 Summary of the key findings

This study investigated drivers influencing the consumer intention and use of mobile payment service in Kenya. The variables that were included in this study were; Extrinsic motivation variable (social influence and perceived usefulness, intrinsic motivation variables (perceived ease of use and perceived enjoyment and demographic factors (gender and educational level).

The indicators that were used in the study include; social image, social norms, perceived ease of use (PEOU), perceived enjoyment, perceived usefulness (PU), gender and education level. The study also examined the relationship between behavior intention and actual mobile payment services use. This chapter summarizes the findings of the study and makes conclusions upon which recommendations are drawn. Manager's implications together with suggestions for further study are also included in this chapter. The study pursued four objectives and eight hypotheses upon which the conclusions were drawn. Descriptive statistics established that 89% of the people who visited the customer care centers owned by mobile services providers in Kenya were between the age of 20 and 40 years and 11% were beyond the age of 40 years. The

respondent surveyed had subscribed to at least one mobile payment services offered in the Kenyan market with 90% of the respondents stating that they had subscribed to MPESA a mobile payment service owned by Safaricom while 10% of the subscribers used other mobile payment services available in the market. This means that there is one dominant firm offering mobile payment services in Kenya controlling the largest share of the market while the rest of the firms controlled a small market share in this segment. The ratio of males and females who participated in this study was approximately equal with 52% of female and 48% of male being part of the participants. This means that there was no gender bias while conducting this study and as much number of men to women was using the mobile payment services in Kenya.

The study revealed that 62% of the respondents in this study were college and university graduates while 31% had a secondary qualification and 7% had attained primary education qualification. This means that as the study was carried out mainly in the urban centers, the respondents were either students or people going on with their studies.

Mobile money transfer services was the most widely used mobile payment service with a mean of (3.99) followed by mobile pay bill services which had a mean of (3.26) while mobile loan applications with a mean of (2.14) and mobile banking services with a mean of (2.76) were still lowly used by consumers in Kenya at the infancy stage in usage. This means that firms operating the mobile loan applications and mobile banking services need to look for new methods of creating awareness on the benefit of using these services to their consumers and also create awareness of their availability. This also means that the respondent awareness about mobile money transfer and mobile pay bill is high and in addition has enough information about these

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

products. Independent T statistic results showed that a significance difference in the usage both mobile banking and mobile pay bill services was observed meaning that more female than male were using mobile banking and mobile pay bill services in Kenya.

Determine the influence of extrinsic motivation factors on mobile payment services use in Kenya.

In the first objective, the aim of the study was to investigate the influence of extrinsic factors such as social norms as well as social image and perceived usefulness on consumer behavior intention to use mobile payment services use in Kenya.

5.1.1 Social influence

First, the participant's responses were analyzed using descriptive statistics and then two hypotheses which included social norm and social image were tested using multiple regression analyses. On the social norm, based on descriptive statistics, the researcher found out that majority of the respondents did not acknowledge that friends and family members' suggestions and recommendation influenced their decision to use mobile payment services but majority of the respondents were in agreement that they would be influenced to use mobile payment services by people from their community. This has an implication that cultural factors may have a strong influence on mobile payment use in Kenya. The hypothesis testing on the influence of social norm on consumer behavior intention to use mobile payment services results showed that social norm had no significant influence on overall consumer behavior intention to use M-payment services. This means that consumers in Kenya were not influenced by either relatives or friends to use mobile payment services probably because there was only one dominant operator in this market and also majority of the users lacked other efficient mode of money transfer services in

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

the market comparable to the services being offered by the mobile operators. In addition social norm may not be an important factor when it comes to the post-adoption stage of the adoption process.

On social image, based on the descriptive statistics majority of the participants did not support that using mobile payment services was a status symbol/ prestigious or improve on their profile. The second hypothesis tested the influence of social image on the consumer behavior intention to use mobile payment services in Kenya. The results showed that social image had no significant influence on the consumer behavior intention to use mobile payment services in Kenya. This may probably be due to the high level of usage achieved in the country which makes it more of a necessity rather than a prestige/ status or superior profile service.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

5.1.2 Perceived usefulness

Hypothesis five **(H5)** investigates the influence of perceived usefulness on consumer behavior intention to use mobile payment services in Kenya. Descriptive statistics showed that the respondents agreed that using mobile payment services was quick, convenient, effective and easier method of conducting transactions. Hypothesis five results revealed that perceived usefulness (PU) had a positive and the strongest significant influence on the consumer behavior intention to use mobile payment service in Kenya. This finding suggests that if m-payment services are to be accepted and used, the user should perceive them as quick, useful and convenient method of conducting transactions compared to the traditional payment systems.

5.2 Determine the influence of intrinsic motivation factors on mobile payment services use in Kenya.

In the second objective, the aim of the study was to investigate the influence of intrinsic motivation variable (perceived ease of use and perceived enjoyment) on consumer behavior intention to use mobile payment services in Kenya. First, the participant's response was analyzed using descriptive statistics and then two hypotheses which included perceived ease of use (PEOU) and perceived enjoyment were tested using multiple regression analyses. For the perceived ease of use (PEOU), the descriptive statistics showed that majority of the respondents agreed that learning how to use mobile payment services, acquiring skills on using mobile payment and over all use of mobile payment services was easy.

The six hypothesis **(H6)** results found out that perceived ease of use (PEOU) had a significant influence on consumer behavior intention to use mobile payment services in Kenya and had the second strongest influence amongst all the other factors tested. This suggests that mobile operators and any other firm that has developed or may be developing a mobile payment service must design an application that is easy to use, easy to learn and user friendly as consumer perception that the technology adopted is easy to use may have a positive impact on its utilization.

On perceived enjoyment, the descriptive statistics revealed that majority of the respondents were in agreement that using mobile payment services was fun, pleasant, enjoyable and exciting. On inferential statistics, the seventh hypothesis **(H7)** tested the influence of perceived enjoyment on consumer behavior intention to use mobile payment services in Kenya. The results showed that

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

perceived enjoyment had a strong significant influence on consumer behavior intention to use mobile payment services in Kenya. Specifically, perceived enjoyment had the strongest influence on mobile payment use among female consumers indicating that users need a service that is fun and enjoyable in order to engage in it. This has implication that when consumers perceive that mobile payment service is enjoyable, fun and exciting to use especially women they will be more ready to use the service and therefore service providers should take into account the emotional aspect of their innovations while designing mobile application.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

5.3 Determine whether demographic factor influence consumer intention to use mobile payment services in Kenya.

In the third objective, the aim of the study was to investigate the influence of demographic variable (gender and education level) on consumer behavior intention to use mobile payment services in Kenya. Two hypotheses which included gender and education level were tested using multiple regression analyses.

The third Hypothesis **(H3)** tested the influence of gender on consumer behavior intention to use mobile payment services in Kenya. The results found that gender had no significant influence on the overall consumer behavior intention to use mobile payment services but there was significant difference in perceived enjoyment between male and female. This has implication that developers of mobile payment services should take in to consideration drivers influencing both the male and female while developing their applications. In addition it also implies that women are important consumer base for mobile payment innovations providers that should not be ignored as they are active household financial managers.

On education level, hypothesis four **(H4)** tested the influence of education level on consumer behavior intention to use mobile payment services in Kenya. The results found out that education level had a positive and significant influence on the consumer behavior intention to use mobile payment services in Kenya. The explanation to this result is probably because those who have achieved higher education may have higher spending power and might also be willing to purchase and transact using mobile devices. Second consumers with high level of education might also have more knowledge and confidence on how to operate mobile devices.

5.4 Examine the relationship between consumer intention and actual mobile payment use.

In the fourth objective, the aim of the study was to examine the relationship between consumer intention to use mobile payment services and actual use. The results revealed that consumer behavior intention to use mobile payment services had a positive and significant relationship on the actual use. The implication of these findings is that consumers in Kenya are willing to accept and use mobile payment services provided the factors found to be significant are adhered to.

5.5 Conclusion

Evidence from the previous studies indicates that limited studies have been undertaken on the drivers influencing consumer intention and use of mobile payment services particularly in a developing country context. A study focusing on Kenya being the global leader in mobile money usage may serve to provide important information on the drivers of this success to other emerging markets and developed economies struggling to implement mobile innovations successfully. This study demonstrates a solid theoretical base of a modified unified theory of acceptance and use of (UTAUT) as a useful framework for identifying the factors that influence

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

consumer intention and use of mobile payment an area that seem to be understudied in the innovation literature. The study investigated the influence of extrinsic motivation factors (social influence and perceived usefulness), intrinsic motivation factors (perceived ease of use and perceived enjoyment) and demographic factors influencing consumer intention and use of mobile payment services. First unlike the existing studies that focused on whether the user will or will not adopt mobile payment service, this study explored the influence of the adoption factors on consumer intention towards actual use of mobile payment services. As such mobile payment services providers will be able to understand the drivers that may lead to full utilization of their services after adoption.

Significant effect of perceived usefulness, perceived ease of use, perceived enjoyment and education level on consumer intention to use mobile payment services in Kenya is confirmed. This outcomes are consistent with previous studies findings; (Beng & Eze, 2010; Chan & Chong, 2013; Jayshree & Mohd, 2010; Mardikyan et al., 2012; Omwansa et al., 2015; Pousttchi & Wiedemann, 2014; Teoh et al., 2014) and (Arvidsson, 2014).

Second, intrinsic motivation factors play an important role in user engagement with mobile payment services and more specifically female users. It was interesting to find out that both perceived ease of use (PEOU) and perceived enjoyment had a strong influence on mobile payment use in Kenya while only perceived usefulness (PU) was the influential factor among the extrinsic motivation factors. Perceived enjoyment was found to influence female consumers more than the male consumer which is an important finding to the mobile operators. The implication about this result to the mobile operators is that when designing mobile payment applications the designer should make sure that the end product is user friendly and also exciting to use especially when the target market are women.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

These findings will enable m-payment developers to better understand what to focus on while designing their applications and the features to include in the applications in case they want to personalize the service. This finding also confirms the importance of emotional aspects while developing mobile payment services in Kenya.

Third, this study revealed that social influences (social image and subjective norm) did not influence consumer intention to use mobile payment service. The implication of this finding is that social influences is not much of an issue in mobile payment use in Kenya probably because of low banking penetration in the country making this mode of payment a necessity to majority of the users. Moreover, existence of a single dominant mobile provider may also serve as a valid reason behind these results due to lack of large variety of trusted services in the market.

Fourth, the results included direct relationship between the demographic factors and consumer intention to use mobile payment services rather than mediating variables as used in the unified theory of acceptance and use of technology (UTAUT). Knowing the influence of gender and education level allows mobile payment services providers to segment their market and develop mobile payment applications based on the user profile. For instance, female user's intention to use mobile payment services was found to be influenced more by perceived enjoyment (PE) than men. In addition, non significant difference amongst gender on the overall consumer intention to use mobile payment use means that mobile operators should put in to consideration both genders while designing their services.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

5.6 Achievement of research objective

The primary objective of this study was:

- To investigate the factors that influence consumer intention and use of mobile payment services in Kenya.

The secondary objectives were:

- Examine the influence of extrinsic motivation factors on consumer intention to use mobile payment services.
- Examine the influence of intrinsic motivation factors on consumer intention to use mobile payment services.
- Examine the influence of demographic factors on consumer intention to use mobile payment services.
- Consumer behavior intention influence on actual mobile payment use in Kenya.

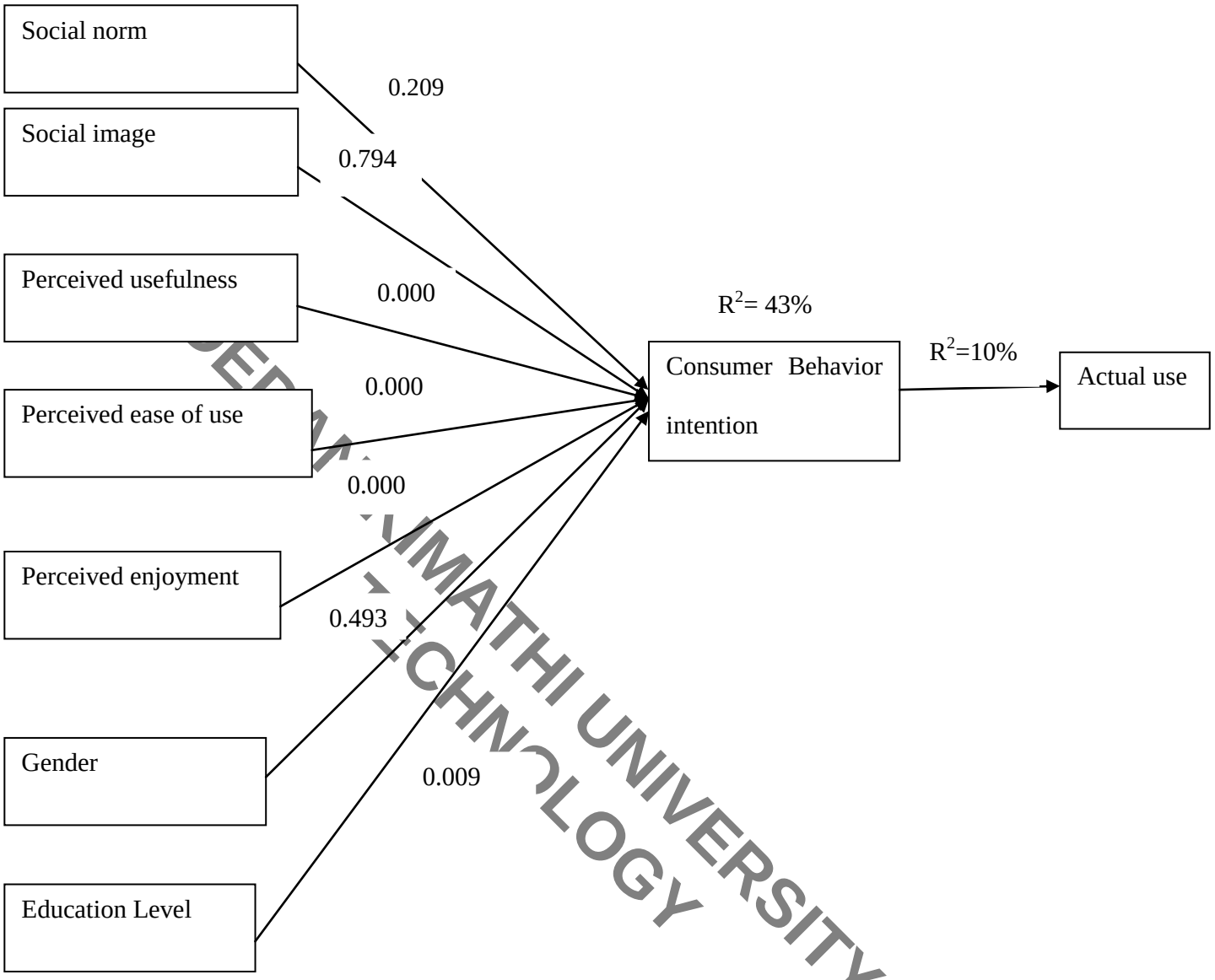
The objective of this study was to investigate the factors that influence consumer intention to use mobile payment services in Kenya. Empirical evidence from chapter 5 and the results of the regression analysis show that both extrinsic (perceived usefulness) and intrinsic motivation factors (perceived enjoyment and perceived ease of use) and demographic factors (education level) influence the consumer intention to use mobile payment services in Kenya.

As mentioned above, the specific objective of this study was to investigate the extrinsic and intrinsic motivation factors influencing consumer behavior to use mobile payment services in Kenya. It was observed perceived ease of use (PEOU) and perceived enjoyment (PE), perceived usefulness influenced consumer intention to use mobile payment services. This results are consistent with the results reported by ; (Chan & Chong, 2013; Issa & Mamoun, 2013; Teoh et al., 2014). It was also concluded that demographic factors such as education level also influenced

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

consumer intention to use mobile payment services which is consistent with the conclusion of ; (Chan & Chong, 2013).Lastly, fourth objective was aimed at examining the relationship between consumer behavior intention and actual use of mobile payment services in Kenya. It was observed that consumer behavior intention was a predictor of the actual mobile payment use results that were consistent with the findings of (Issa & Mamoun, 2013; Venkatesh, 2003).Figure.5 1: Full sample results of UTAUT Model on mobile payment use in Kenya

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY



JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

5.7 Theoretical contribution

The contribution of this study to the body of knowledge is in three folds: Firstly, the study provides empirical evidence on the relationship between consumer intention and use of mobile payment in Kenya. Recent studies on m-payment have mainly focused on the adoption decision without studying consumer intention and its implication to mobile payment usage. The model adopted in this study has extensively been used to study e-business use by individuals in various countries but less in

applications such as m-payment innovation particularly in a developing economy. This study therefore contributes to the theory by developing a modified version of unified theory of acceptance and use of technology (UTAUT) to study consumer intention and use of mobile payment services in Kenya. Moreover, the study provides empirical evidence showing the applicability of this model in mobile-payment applications in Kenya. By testing direct relationship between demographic factors and consumer intention to use mobile payment services, the researcher modified the original theory of acceptance and use of technology (UTAUT) *hence confirming the usefulness of the UTAUT model in testing the consumer intention and use of mobile payment services in Kenya*.

Secondly, the researcher also sheds light on the motivational factors that influence consumer intention to use mobile payment services in Kenya. The study revealed that intrinsic motivation factors (perceived ease of use and perceived enjoyment) are important drivers of mobile payment use among consumers while only perceived usefulness was an important extrinsic motivation factor. *This study therefore contributes to the body of knowledge by establishing that intrinsic motivation are more influential than extrinsic motivation in mobile payment services use by consumers in Kenya*. Social influence and gender did not influence consumer intention to use mobile payment services in Kenya. The study also confirms the findings from previous studies that perceived usefulness (PU) is the main driver of technology use.

The secondary research contribution of this study is the *establishing of gender difference in drivers influencing consumer behavior intention to use mobile payment services in Kenya.* It was revealed that female consumers are more influenced by intrinsic motivation factors such as perceived enjoyment (PE) to use in mobile payment than male consumesr. This is a significant contribution to the existing literature on mobile payment use especially from a developing country context.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

5.8 Recommendations to the Manager and policy makers

Firstly, the finding from the study suggest that the mobile service providers and other stakeholders concerned with the mobile payment innovations should concentrate on the usefulness, ease of use and excitement to the user while developing strategies on product design and market penetration of their mobile payment services in Kenya. They will need to ensure that the information relied to the user show that mobile payment services are useful to the consumer; they are easy to use, exciting and enjoyable to use. The researchers also recommend that cultural factors such as the surrounding of the consumers, relatives and friends influence should also be taken in to consideration while creating awareness about the services available. The study reveled that though social influence was not significant a sizeable number of the consumers relied on the community approval, friends and relatives while making decisions whether to use the mobile payment services available.

Secondly, based on the results of the demographic variables (gender and education level), firms should be able to define strategies that will influence consumer usage patterns and produce differentiated services so as to satisfy customers. Knowing this relationship will also help developers to design products and mobile applications based on the user's gender and education profile. For instance, for a firm that wants to access new markets the researcher recommends that the bases of their advertisement and promotion should be such that if they target female consumers, they should put more focus on simplicity of the payment service and its excitement to increase the probability of usage by women. Consumers with higher education are more likely to transact with their mobile devices and the researcher recommends that mobile developers should continue promoting their products to consumers with higher education and in addition help in educating other categories of users on the features available in their applications.

DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

Thirdly, as the study has revealed that consumer use of mobile payment services relies on the simplicity, usefulness and excitement, the researcher recommends firms developing and introducing products such as mobile banking and mobile loan applications that are still lowly utilized should re-evaluate these products design and marketing strategies to see whether they conform to the findings. Free training courses of the consumers should be organized by the banks and any other firm operating these services to create awareness about their availability.

Fourth, the mobile operators have also invested heavily in telecommunication infrastructures and other mobile innovations recently. Global statistics reveal that m-commerce usage is still very low and therefore the researcher recommends that more awareness should be created and the innovations being produced aligned to the findings from this study in order to achieve the long term plan of cashless transaction society. The researcher also found out from the literature that the country had very low scores in mobile commerce clusters such as telecom partnership with other industries mostly hampered by security scares and under developed intellectual property right agency. It is recommended that the government should come up with policies to improve intellectual property protection awareness, increase the speed of setting up legal framework that will accelerate dispute settling among partners and also formulate anti-monopoly policies to enhance competition in the market. The government regulators should also encourage open innovation where different organizations collaborate in order to improve their innovativeness.

Lastly, though security risk was not tested in this study, previous literature reveals that it is a great inhibitor to consumers using the mobile applications. Though consumers seem not to doubt security and privacy of the mobile payment services, there is clear evidence from the literature that they are concerned about security of the transactions. The researcher therefore recommends that mobile payment providers should improve security and privacy features of their applications and also

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strategize on how to change the perceptions of the consumers through educating and creating awareness by emphasizing about safety features during marketing and advertising campaigns.

5.9 Limitation of the study

The findings of this study should be interpreted in light of the following limitations; firstly, this study only focused on mobile payment technologies. This may limit the generalization of this study as there are other mobile technology innovations which may exhibit different characteristics to those of the M-payment services.

A sample size of six hundred respondents may be relatively small to draw generalized conclusions on the drivers influencing consumer intention to use mobile payment services considering that mobile payment services are used by approximately 26 million users. A larger sample size may be essential in future studies to support the findings in this study.

This study uses a cross sectional research design that doesn't give an opportunity to make causal inference. As technology is dynamic in nature, it is important for similar studies to be conducted using a longitudinal approach.

The data collected and time allocated may not have been sufficient enough for the respondents to fill the questionnaires accurately due to the respondents other commitments and obligations. However despite these limitations, this study has managed to reach useful conclusions and the significance of conducting this research still exceed the shortcomings posed by this limitation. In many instances the researchers found support from previous literature across different countries and therefore generalization is not much of a concern.

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5.10 Recommended areas for further studies

Based on the limitations provided above, the researcher recommends the following areas of future studies. Firstly, the focus of this study was on the usage of m-payment by the consumers in Kenya. Future studies should focus on other entities such as the government or business usage and also use the model to study other mobile -technologies that were not included in this study.

Secondly, the study focused only on the consumers and mobile payment services available in Kenya. It would be interesting to observe the findings of a similar study if this model was replicated in other developing and developed countries.

Thirdly, the finding from this studied factors only explained 43% of the consumer intention to use mobile payment services. The remaining 57% may be explained by the factors that were not included in this study, future studies should include other variables that were not tested in this study.

Lastly, as technology is dynamic and this study used a cross-sectional approach future researchers should consider studying diffusion of m-payment use across time or using longitudinal approach.

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APPENDICES

Appendix I: Letter of Introduction

David Githinji Kabata
Dedan Kimathi University
P.O.BOX 657-10100
NYERI
28/06/2015

Dear Sir/Madam,

RE: REQUEST FOR COLLECTION OF RESEARCH DATA

My name is David Kabata and am a PhD student in Business Administration – Entrepreneurship option at Dedan Kimathi University of Technology. Currently, I' am carrying out a research on the ***"consumer intention and use of mobile payment service in Kenya"***. The research is towards the partial fulfillment of the requirements of the Degree of Doctor of Philosophy in Business Administration. You have been identified as one of the collaborators and respondents in this study and kindly request for your assistance towards making this study a success.

I therefore kindly request you to take some time to respond to the attached questionnaire. I wish to assure you that your responses will be treated with confidentiality and will be used solely for the purpose of this study. If you are interested in the results of this research, I would be more than willing to send you a summary of the completed study.

I thank you in advance for your time and responses.

Yours Sincerely,

David Kabata
PhD Student

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Appendix 11 **QUESTIONNERRE**

The purpose of this questionnaire was to collect data, for strictly academic research purposes from various individuals in Kenya. The main purpose of the data was to investigate the drivers influencing consumer intention and use of mobile payment services in Kenya.

SECTION A: Respondent Information

Age of the respondent

20 and below { }	**21-30 { }**	**31-40 { }**	**41-50 { }**	**51and above { }**

Respondent Gender

Gender	**Male { }**	**Female { }**

Respondent Gender

Marital status	**single { }**	**Married { }**

Income bracket

Income bracket in Ksh	**0-50,000 { }**	**51000-100,000 { }**	**100,000 and above { }**

Education level of the respondent

Primary level { }	**Secondary level { }**	**College level { }**	**University level { }**

Section A: Extent of mobile payment services usage.

Please indicate whether you have subscribed to any mobile payment service available in Kenya

YES ☐ NO ☐

IF **YES** please indicate which one ----------

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Section B: Extrinsic motivation drivers

Please indicate your agreement or disagreement with the following statements
1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

Social norms	**Strongly disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Friends' suggestions and recommendations will affect my decision to use mobile payment services.					
Family members/relatives have an influence on my decision to use mobile payment.					
I will use mobile payment if the service is widely used by people in my community.					
Social image					
People who use mobile payment services look more prestigious than those who don't.					
People who use mobile payment services has a superior profile					
Using mobile payment services is a status symbol in my locality					

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statements	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Perceived usefulness					
Using mobile payment services enables me to pay more quickly.					
Using mobile payment services make it easier for me to conduct transactions.					
I find that mobile payment services are more convenient than using other payment methods.					
Using mobile payment services enhances my effectiveness in my work.					

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Section C: Intrinsic motivation drivers

Please indicate your agreement or disagreement with the following statements
1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree

Perceived ease of use	**Strongly disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
Learning mobile payment services would be easy for me.					
I would find it easy to use mobile payment services to do what I wanted to do.					
It would be easy for me to become skilful at using mobile payment services.					
I find mobile payment services easy to use.					
Perceived enjoyment					
Using mobile payment services is fun.					
Using mobile payment services is pleasant.					
Using mobile payment services is enjoyable					
Using mobile payment services is exciting.					

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Section: D Consumer behavior intention

Please indicate your agreement or disagreement with the following statements.
(1)- Strongly disagree, (2) - disagree, (3)-Neutral, (4)- Agree, (5)- strongly Agree

Intention towards using mobile-payment services	**Strongly disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly agree (5)**
I intend to use mobile payment services in future.					
My intention is to continue using mobile payment services over other alternative means.					
Using mobile payment services is beneficial to me.					

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Section- E Actual Use

Please indicate your agreement or disagreement with the following statements on mobile payment services use.

(1): Strongly disagree 2: disagree 3: neutral 4: Agree 5: Strongly agree

Mobile payment services usage	**Strongly disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
I use Mobile Loan application services to borrow and pay money using mobile wireless payment services.					
I use Mobile money transfer services to transfer money from one account to another using wireless mobile payment services.					
I use Mobile banking services to carry out banking transaction using mobile payment services.					
I use mobile payment services to pay bills in physical and online shops.					

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