ADOPTION OF ELECTRONIC PAYMENT SYSTEMS FOR RENT COLLECTION IN REAL ESTATE MANAGEMENT IN KENYA

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DECLARATION

This research project is my original work and has not been presented to any other university for award of degree or diploma.

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This research project has been submitted with my approval as university supervisor.

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I thank the heavenly father for the strength and zeal that he has granted me to be able to start and finish the MBA program. I wish to express my gratitude to my supervisor Mr. J.T. Kariuki for his professional supervision and counsel when I was writing this project.

DEDICATION

This research project is dedicated to my parents, brothers and sister for the sacrifices that they made to see me through the university education. May God bless you and keep you. To my wife, thank you for the moral support and encouragement that you gave me when I was out pursuing my studies.

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ABBREVIATIONS AND ACRONYMS

ATM	-	Automated Teller Machine
CEO	-	Chief Executive Officer
EFT	-	Electronic Funds Transfer
EPS	-	Electronic Payment Systems
GDP	-	Gross Domestic Product
IBM	-	International Business Machines Corporation
ICT	-	Information and Communications Technology
ISK	-	Institute of Surveyors of Kenya
KEPSS	-	Kenya Electronic Payment and Settlement System
KNBS	-	Kenya National Bureau of Statistics
KRA	-	Kenya Revenue Authority
RTGS	-	Real Time Gross Settlement
USA	-	United States of America
USAID	-	United States Agency for International Development

ABSTRACT

This study sought to evaluate e-payment adoption in real estate rent collection in Kenya. To achieve the objective of the study, a descriptive survey was used. Primary data was collected using a semi-structured questionnaire. The population for this study comprised of 75 real estate firms. Out of the 75 questionnaires that were administered for data collection, 60 completed questionnaires were collected. This represents a response rate of 80% which was considered a sufficient representation of all the real estate companies in Kenya. The study concludes that adoption of electronic payments for rent collection in real estate firms in Kenya is still low. Some of the challenges that have inhibited adoption of electronic payments were as follows: lack of trust on e-payment systems service providers, transaction charges by the e-payment systems and the costs involved in adoption and implementation of electronic payments in real estate firms. The study also concludes that the drivers of adoption of electronic payments systems, for rent collection in real estate firms in Kenya were, need for accurate accounting of rent amount and flexibility in rent collection. The study recommends that the challenges inhibiting adoption of electronic payment systems to be addressed by both the service providers and real estate management firms, for a higher rate of adoption. Trust on the service providers must be attained by the real estate firms and friendly transaction costs need to be implemented by the service providers. Further research on the adoption of electronic payment systems for rent collection in Kenya, can be carried on other stakeholders in the real estate industry for example the landlords or tenants.

CHAPTER ONE

INTRODUCTION

1.1 Background

In 1979, the first direct purchase over the phone was actualized by the inventions of Michael Aldrich (Aldrich, 2011). The shopping system was called videotext, which is accredited as the birth of e-commerce. There have been many developments in technology since then, especially with the advancement of internet. The advancements in technology have made lives much easier by reducing distance, time spent and space values when transacting. Various methods of doing business online; which is now commonly referred to e-business have come up. Examples include online transaction processing, internet marketing, electronic data interchange among. They have been adopted in various industries and received different acceptance levels.

In the real estate sector the adoption of electronic payment systems is increasingly taking place. According to Lurie (2015), an increasing number of property management firms in USA now offer electronic remittance systems that allow their tenants to pay online. The United States' National Multi-Housing Council reported that property owners and managers have ranked electronic rent collection as the priority capability in upcoming software upgrades (Murdock, 2005).

1.1.1 Electronic Payment Systems Adoption

Turban et al. (2008) define electronic business as the application of information and communication technologies (ICT) in support of all the activities of business to reduce cost, improve customer value and enhance strategic objectives. E-business thus involves encompassing all the processes of a business value chain. It can be implemented using various models that suit the organization's structure and business objectives hence enhancing

the organizational overall strategy. E-business incorporates both the hardware and software aspect of ICT. E-payment systems are part of E-business.

According to Sumanjeet (2009), a process of payment and settlement involves a buyer-to-seller transfer of cash or payment information. The actual settlement of payment takes place in the financial processing network. A cash payment requires a buyer's withdrawals from his/her bank account, a transfer of cash to the seller, and the seller's deposit of payment to his/her account. Electronic payment on the other hand, is a form of a financial exchange that takes place between the buyer and seller facilitated by means of electronic communications (Abrazhevich, 2004). Electronic payment systems (EPSs) facilitate the most important action after the customer's decision to pay for a product or service to deliver payments from customers to vendors in a most effective, efficient and problem-free way. The content of this exchange is usually some form of digital financial instrument (credit card debit card online transfer or electronic money) that is backed by a bank or electronic payment service intermediary.

O'Mahony, Peirce and Tewari (2001) define electronic payment systems as, a way that makes possible any form of electronic payment for online transactions. Electronic payment is a payment executed electronically. The main component of the electronic payment systems includes the transfer of money applications, network infrastructure, regulations and procedures that govern the usefulness of the system. Electronic payment systems are still evolving with time and in most places around the world. There are electronic payment systems in place and used widely in Kenya.

The Kenya Electronic Payment and Settlement System went live on July 29th 2005 according to the Central Bank of Kenya (KEPSS, 2015). It is based on a Real Time Gross Settlement (RTGS) System in which both processing and final settlement of funds transfer

instructions take place in real time. The settlement of payment transactions occurs on a transaction-by-transaction basis. Some of the E-payment systems in Kenya include debit cards, credit cards mobile money and internet. The most commonly used method however is the mobile money payments. The mobile network operator Safaricom has been in the mobile payment business since the launch of M-pesa in 2007. Other mobile money transfer services include Airtel money and Orange money. The electronic payment systems have opened up a paperless form of payment even for people in rural and informal settlements.

E-payment systems are most preferred as compared to the traditional payment methods due to their low processing costs and the reduced technology costs. The systems reduce paperwork, and the transactions are fast thus saving time. According to Berez and Sheth (2008), electronic invoicing and payment, for instance, allows vendors to send electronic bills to buyers and lets them reconcile invoices with purchase orders. This e-payment method also authorizes payment through a financial services provider's online platform and in the process cuts down overheads.

Despite the benefits that come with e-payment systems, there are challenges faced in adopting them. Adopting e-payment systems requires resources. The infrastructure needs to be in place to process the transactions. The nature of the system also may lead to complexity of use, especially if the user is not tech savvy. Lack of trust and awareness is also factored as a challenge in adopting the e-payment systems. If a user is afraid of fraud, data privacy and security, he/she will shun the system. More so, one has to pay transaction fees or monthly maintenance fees to facilitate the service depending on the e-payment methods service provider. These challenges could be the main reason for a lag in usage of e-payment systems for rent collection, in real estate management in Kenya.

1.1.2 Rent Collection

A rental is an item that is leased out for a particular extent of time (Rental property, 2015). It is governed by either a verbal or written agreement. Some of the most common forms of rentals are homes, cars, and equipment. These rentals require some form of payment, known as rent, to be made either at the commencement of the rental period or during the scheduled rental period (Duhaime, 2015). For a home rental, the landlord hires an agent or manager to take care of the property on his behalf. A rental agency receives compensation to coordinate the dealings between potential tenants and landlords. Other landlords take it as their main job to manage the properties. In the latter scenario, the tenants will be interacting with the landlord mostly especially in rent payment. When a real estate agent or company is hired, they take it upon themselves to collect the rent and manage tenant demands.

Rent is normally paid monthly. This depends upon the agreement signed with the landlord or rental agency (Duhaime, 2015). In Kenya this is mostly done monthly, but one can pay in advance. A given method of payment is agreed upon and is collected at a stipulated interval of time, depending on the leasing period. The method agreed upon may be cash based or e-payment systems. For e-payment systems, the tenants can pay online, using debit or credit cards or using mobile money transfer.

1.1.3 Real estate management in Kenya

As the e-payment systems advanced in Kenya, the Kenyan real estate sector also experienced a sudden increase puzzling many in the region (Herbling, 2014). African Business Magazine (2012) states that while other property markets in the world dipped, the Kenyan environment remained strong. According to Knight Frank (2015) the residential market in Kenya witnessed marginal increases in capital and rental values in 2014. More so the sector has

become the fourth biggest contributor to the country's wealth. In fact, the national accounts indicate that the contribution of the real estate sector to Kenya's gross domestic product (GDP) in 2014 rose to 10.6 per cent which is more than double from the previous estimate of 4.9 per cent in 2013 (Knight Frank, 2015).

The key players in real estate management in Kenya include the real estate developers, the manager or agents, the landlords and the tenants. For one to practice as an estate agent in Kenya, he/she must be registered by the Estate Agents Registration Board. The board is constituted under the Ministry of Land, Housing and Urban Development through the Estate Agent Act. One must also be a one a full member of the Institution of Surveyors of Kenya. The Institution of Surveyors of Kenya (ISK) is a land sector professionals' organization. The registered professionals may form their own individual companies, patnerships or get employed in companies that deal with real estate management.

1.2   Research Problem

In Kenya, landlords still advice their clients to pay rent directly to the bank and then provide proof of payment to the agent, or landlord. After presenting the bank slip as proof of payment they are then issued with a receipt. Others still prefer receiving cash from the tenants. If the bank slip is lost, it will be a hustle proving that the tenant has paid, especially if he had not yet received the rent receipt from the agent or landlord. It is also quite inconvenient to queue to queue at the bank in order to pay rent, and then visit the agent's office to get a receipt. This house rent transaction process can be reduced by adoption of e-payment systems, hence saving time and offering convenience to both the tenant and the landlord. According to Safaricom Limited (2015), three years after the launch of lipa kodi in Kenya, they have only

three active housing agents. This admission is quite surprising because the company has profoundly penetrated the Kenyan market in respects to mobile money payments.

According to Clark (2015), after AvalonBay Communities, a property management company in USA made a decision in 2007 to stop accepting rent at its apartment buildings; they got 89 percent of the company's 80,000 tenants paying their rent by electronic transfer in 8 years. Clark (2015), stated that the electronic rent payments in the USA are mostly used by tech-savvy young renters. He also adds that the systems are more advantageous to a property manager who has to collect rent for thousands of households than a landlord with only a few units. However in USA, according to Clark (2015), the processing fee that comes with e-payment systems is the reason Americans have not adopted the systems fully in paying rent. Humphrey (1995), stated that thought the electronic payment systems are nice, they are not essentially cost-effective due to hidden charges. A payment system functions on trust, to a large degree, and innovations. While the innovation's technology may be viable they are not always embraced in the market. However if the costs and benefits of the payment method improve the current payment arrangement, they are likely to be adopted.

An empirical study by Appiah and Agyemang (2013) on e-payment systems user acceptability in Ghana focused on establishing whether electronic payment system can replace existing payment systems and solve payment problems. Appiah and Agyemang (2013) examined whether the customer attitudes about electronic payments are changing and the impediments to market development in electronic payments. Based on the analysis of the survey, the consumers have a propensity to show rational payment preferences and behaviors. It was observed that consumers' behaviors are consistent with their preferences, which vary but may include convenience, incentives, control, privacy, security, and personal

involvement. The study showed that, one of the significant impacts determining the payment instrument of choice by customers is their financial positions and the nature of specific transactions.

A study by Okifo and Igbunu (2015) on electronic payment systems in Nigeria, found out that the introduction and use of electronic payment methods in Nigeria, holds the potential of broad value to both business and consumers. The e-payment systems offer reduced, greater convenience and secure reliable means of payment and settlement for a varied range of goods and services offered around the world. However, most Nigerians are not aware of the benefits of e-payments systems. Without the awareness there is slow adoption of the e-payment systems. Okifo and Igbunu (2015) recommended that the banks must be educated to promote e-payments. This can be done through training program for senior management.

In Kenya, Ogoti (2015) carried a study on factors influencing adoption of electronic payment by small and medium hotel enterprises in Kisii County. The study showed that only about 44% of hotels enterprises had adopted electronics payment refuting the general beliefs that small and medium hotels do not adopt electronic payment in their business operations like large enterprises. The study concluded that entrepreneur background characteristics like age, level of education, and relevant skills are factors influencing adoption of electronic payment by small and medium hotel enterprises in Kisii County. More so the study found that the characteristics of the e-payment method like speed of payment, convenience and low storage facilities are factors influencing adoption of electronic payment in Kisii County.

Referring to the research findings, this study was keen on establishing the determinants for adoption of the e-payment systems for house rent collection in real estate management. The

study achieved this by addressing the following questions: (a) What was the level of adoption of e-payment systems in Kenya? (b) What were the challenges and benefits of e-payment systems in house rent collection in Kenya? (c) What were the drivers for adoption of these e-payment systems?

1.3 Research Objectives

The general objective of the study was to evaluate e-payment adoption in real estate rent collection in Kenya. The specific objectives were to:

a) Establish the extent of e-payment systems adoption for rent collection in real estate management in Kenya

b) Identify the benefits of usage of e-payment systems in rent collection in Kenya.

c) Identify the challenges in the adoption of e-payment systems in rent collection in Kenya.

d) Identify the drivers of e-payment systems adoption for rent collection in real estate management in Kenya.

1.4 Value of the Study

This study will serve as a resource for policy makers contemplating to implement electronic payment systems in rental management in Kenya. The e-payment systems service providers will understand the challenges that are facing the adoption of their products in real estate rent collection. It will also contribute in offering information on current trends of adoption levels in the market currently and factors to consider in future. The study will also enrich the concept of e-business by providing insights on the challenges facing the adoption of e-payment systems in real estate management with regard to house rent collection. Using diffusion of innovations theory discussed in the theoretical framework, reviewing other studies and the analysis in this study, scholars will understand the reasons behind slow adoption of e-payment systems for rent collection.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review on the study in order to achieve the research objective. The research objective, empirical review and theoretical framework were discussed in this chapter. Lastly, a conceptual framework that guided the rest of the study was outlined.

2.2 Electronic Payment Methods

The internet and electronic payment systems have made it possible for people to trade from the comfort of their homes from merchants all over the world. In the near future, the internet will potentially be the most dynamic business mediator and the electronic payments systems will be at the center of this development. Indeed, Baltzan (2014) states that a growing number of companies are already using the Internet to streamline their business processes, procure materials, sell products, automate customer service, and create new revenue streams.

In the banking industry, the greatest achievement in technology has been the electronic payment methods. This has reduced the cash flow at hand and saved people a lot of time that would otherwise have been used queuing to make payments. With the use of these mobile payment services, one can pay for goods purchased both online and from physical sellers as well as pay for utilities and other bills. USAID report (2012) adds that the money transfer service in collaboration with some banks has made it possible for easy and paperless mobile banking.

In the Real Estate Management industry, digital currency is rapidly being acknowledged as the ideal medium in which to accept payments (Fidelity Payment Services, 2015) in the USA. (Short, 2015) details this in a review that, one of the main factors of buying new property

management software is to improve efficiency by offering multiple electronic payment options to make it easier for tenants to pay their rent on time and hassle free. The payment systems are integrated with real estate management softwares with a sole purpose of easing rent collection and book keeping in general.

AppFolio property management software is one example of such a system. It offers a broad payment platform that includes various payment options including e-check, credit card or electronic cash payment. This allows residents a way to pay rent online at any time of the day though an online tenant portal (Software Advice, n.d.). This software enhances ease of use, saving time on routine tasks and collecting rent online. Another example is Cozy, a rent management company that offers rent related tools and services such as collecting rent and screening tenants online (About cozy, 2015). This company was ranked among the most innovative real estate companies, by Re:Tech, a real estate consultancy with a focus on thought leading innovation and pioneering new methodologies.

In August 2013, in an effort to incorporate e-payment system benefits in the real estate industry in Kenya, Safaricom Ltd launched the lipa kodi solution. Lipa kodi is a Swahili statement which literally means pay rent. The solution was geared at offering convenience and cost efficacy to tenants, landlords and housing agents in rent collection. The key factor in the product was to enhance a safe and reliable approach of paying and collecting rent. The solution nevertheless, is yet to fully hit the market despite Safaricom being a major powerhouse in mobile payment penetration in the country.

2.2.1 Determinants of E-Payment Methods

Jansorn, Kiattisin, and Leelasantitham (2013) identify four key contracts as the direct determinants of usage of electronic payment systems. The determinants include performance expectancy, effort expectancy, social influence, and facilitating conditions. These are adapted

from We adapt these constructs and definitions from UTAUT to explain the consumer technology acceptance and use context. To start with, performance expectancy is the degree to which an individual believes that using the system will help him or her to attain gains in job performance. E-payment systems should offer convenience and efficiency in handling payments. The cost implication in investing and buying the system should help in attaining a given end goal in performance.

Effort expectancy on the other hand is the degree of ease associated with use of the system. The system needs to be user friendly in operations and user interface must be appealing. An easy to use system will receive considerable high adoption levels. The third factor, social influence, is the degree to which an individual perceives that they should use the new system. Social influence is necessary for consumers to develop trust and acceptance of the e-payment system. Security and data privacy needs to be well established in e-payment systems.

The last construct, facilitating conditions, is the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system. This has to do with the type of transaction the system supports; whether the system supports transactions that are effectuated immediately such as deliver of on-line information for payment, compared to which delivery is at a later date. The underlying hardware and software requirements, availability and expenses for the system will determine the adoption.

2.2.2 Benefits of E-Payment Systems

Online payment offers several major benefits for tenants. Convenience is one of the main advantages that come with e-payment systems. According to Shapiro (2008) paying rent using the e-payment systems helps some tenants avoid late fees if they get busy and forget

rent is due or when they are traveling. This way the real estate agent doesn't have to wait until the person gets their paycheck or deal with collection hassles. Electronic payments save the real estate agents the time spent waiting the slips or cash as well as the foreboding of handling checks (Clark, 2015). This offers flexibility to the tenant paying the rent as well as the real estate agents rent collection.

More so, electronic rent payments save time and reduce the administrative burden of processing paper checks, posting them to a journal, filling out deposit slips, and physically going to the bank to deposit them (Shapiro,2008). Those time-consuming tasks become automated if a property has an online payment system and as a result the apartment owners and managers attain better cash flow and lower operating costs.

2.2.3 Challenges of E-Payment Systems

Kendall, Schiff, and Smadja (2014) state that, more than 90 percent of retail transactions in parts of Kenya remain cash based. Given the lack of digital-payment infiltration; consumers, banks, and governments in sub-Saharan Africa are still bearing the high cost of cash payments. This slow adoption of e-payment systems could be attributed to the uncertainty and a lack of awareness of the e-payment systems. If the users are not e-ready in terms of literacy levels and infrastructure readiness, the adoption will be slow. This could be due to the costs and lengths one has to go in adopting e-payment systems, especially for rent collection in real estate management in Kenya.

More so, lack of trust in e-payment systems leads to slow adoption. One of the key challenge as lack of trust in using e-payments for rent collection, in Kenya would be accountability to the tax revenue collection authority. With various tradition rent collection methods, the

landlord may avoid tax payments or falsify the income generated. This practice may be sealed by a new e-payment system. With e-payment systems, the real estate companies may have to be more accountable to KRA especially is the service providers are compelled to forward the transaction details to the tax revenue collection agency. Any preconceived negative attitudes or infringement of special practices may slow down the adoption process.

2.3 Empirical Review on Electronic Payments

A study by Shatat (2011), on adoption of electronic payment systems in banks indicate that there are three factors stimulating the development of electronic payment systems. These include reduced operational and payments processing costs, growing online commerce and decreasing the costs of technology. Reduction of costs is one of the key reasons for research and development of EPSs. Shatat (2011) adds that one of the main challenges in adoption of the e-payment methods is lack of security.

Similarly, according to Visa (2011), the biggest constraint to e-payments adoption is lack of trust and security. Security plays a major role in e-payment systems. According to the study, however, this challenge is slowly being overcome by the roll-out of new and improved e-payment security systems and government enforcement mechanisms, which have helped to build confidence among users. People need to be assured of security in the transaction and the service provider's need invest in secure systems. Consumers must be protected against unwelcome communication, invasion of privacy, and cyber fraud.

In regards to investing in e-payment systems, Chakravorti and Kobor (2003) make the observations that investment in payments technology by banks is most often characterized as a customer retention tool, even when the payment functionality is part of a bundled service

offering. Successful innovations are most often those that target the needs of a particular market niche. Nonetheless even after investment, the uptake could be slow.

Nakhumwa (2013) carried out an empirical study to establish extent to which E-commerce payment systems were adopted by commercial banks in Kenya. He used a descriptive cross-sectional survey research to establish the benefits that accrued to banks from adoption of electronic payment systems. He also determined the drivers of e-payment systems adoption by commercial banks in Kenya as well as the challenges that surrounded adoption and use of these electronic payment systems by commercial banks in Kenya.

2.4   Theoretical Foundation

This study is based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and the diffusion of innovations theory. According to UTAUT, performance expectancy, effort expectancy, and social influence are theorized to influence behavioral intention to use a technology, while behavioral intention and facilitating conditions determine technology use. Also, individual difference variables, namely age, gender, and experience are theorized to moderate various UTAUT relationships. The relationship in these constructs is as illustrated in Figure 2.1.
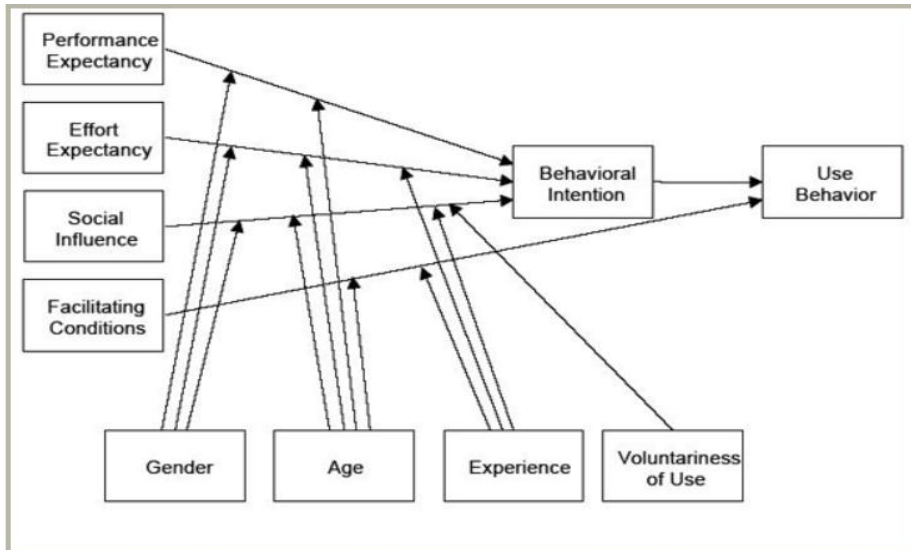
Figure 2.1: Unified Theory of Acceptance and Use of Technology (UTAUT)
(Venkatesh, Morris, Davis, & Davis, 2003)

Correlating to UTAUT, the diffusion of innovations theory seeks to explain why certain innovations spread more quickly than others. Rogers (1995) defines the rate of adoption as the relative speed with which an innovation is adopted by members of a social system. The rate of adoption for that innovation is determined by various factors as shown in Figure 2.2.

Figure 2.2: Factors Affecting the Rate of Adoption (Diffusion of Innovations Theory)
(Rogers, 1995)

At the outset, the perceived advantages brought by the innovation should supersede those of the old system in place. This is called relative advantage. These advantages are the perceptions of a given group of users, and not necessarily the downright certainty. According to Rogers (1995), the degree of relative advantage is often expressed as economic profitabili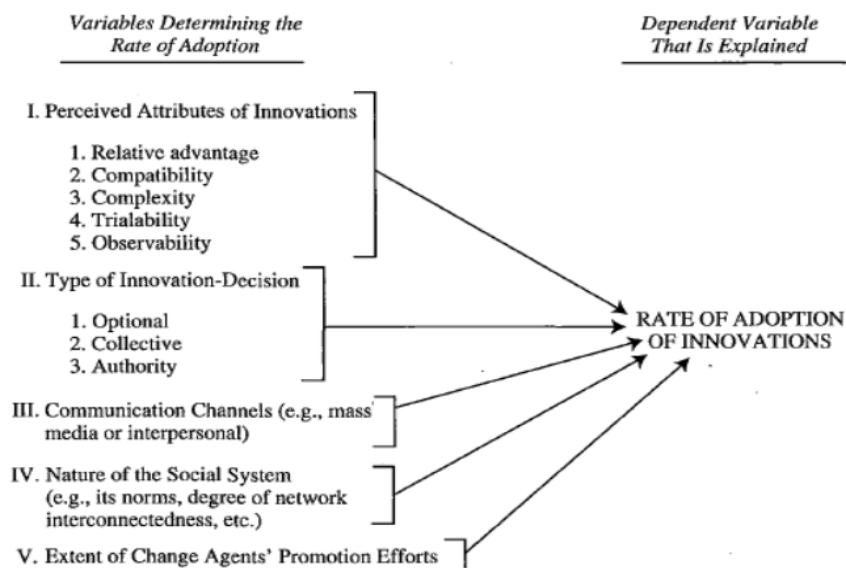ty, social prestige, or other benefits. It is determined by the nature of innovation. The greater the perceived advantage, the higher and more rapid the rate of adoption.

The simplicity and ease of use of the innovation also determines success rate of adoption (Rogers, 1995). This may be enhanced by the use of user friendly interfaces. If the system is not user friendly, a negative perception of the system is developed. The system could be termed as complex also depending on the literacy level of the user. Complexity of innovations leads to slow adoption. More so, the innovation should be compatible with existing values and practices of the potential adopters. The social context is a major role in adoption of new innovation. The target group should be well researched for maximum adoption. This includes the groups and subgroups in the social context, the norms and behavior patterns within that social system. Rogers (1995) says that compatibility of an innovation, as perceived by members of a social system, is positively related to its rate of adoption.

It is worth noting that the adoption of innovations is a process. It begins with the visionaries. According to diffusion of innovations theory, they are called the Innovators. They communicate about the new ideas through the various communication channels and once the benefits start to become apparent, early adopters leap in. they take this as strategic alignment, to stay ahead of the competitors. Once the product or behavior gains considerable acceptance, it may in due course extend to majority. These groups of adaptors are normally

afraid of taking risks. They follow the current trends. There is a group of people who are afraid of high risk and have to contemplate and take more time before adopting the innovation. These are called laggards. Figure 2.3, shows the innovation stages.

Diffusion scholars believe any population or social network can be broken down into five segments, for any given innovation.
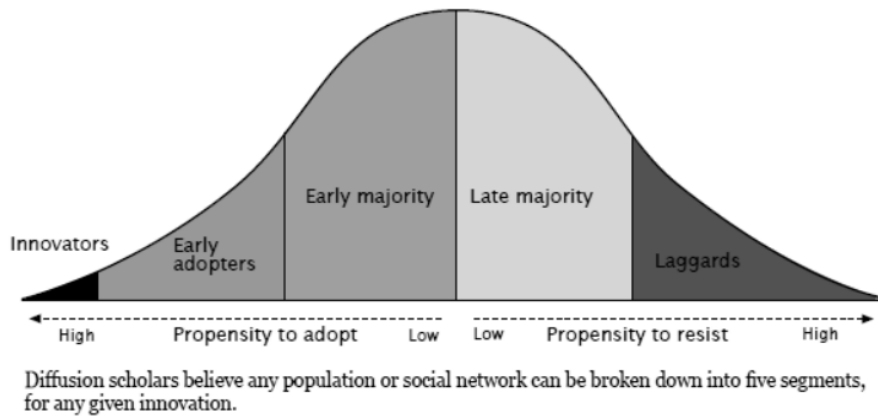
Figure 2.3: Adoption Stages (Rogers, 1995)

2.5   Conceptual Framework

The conceptual framework of the study is as shown in Figure 2.4.
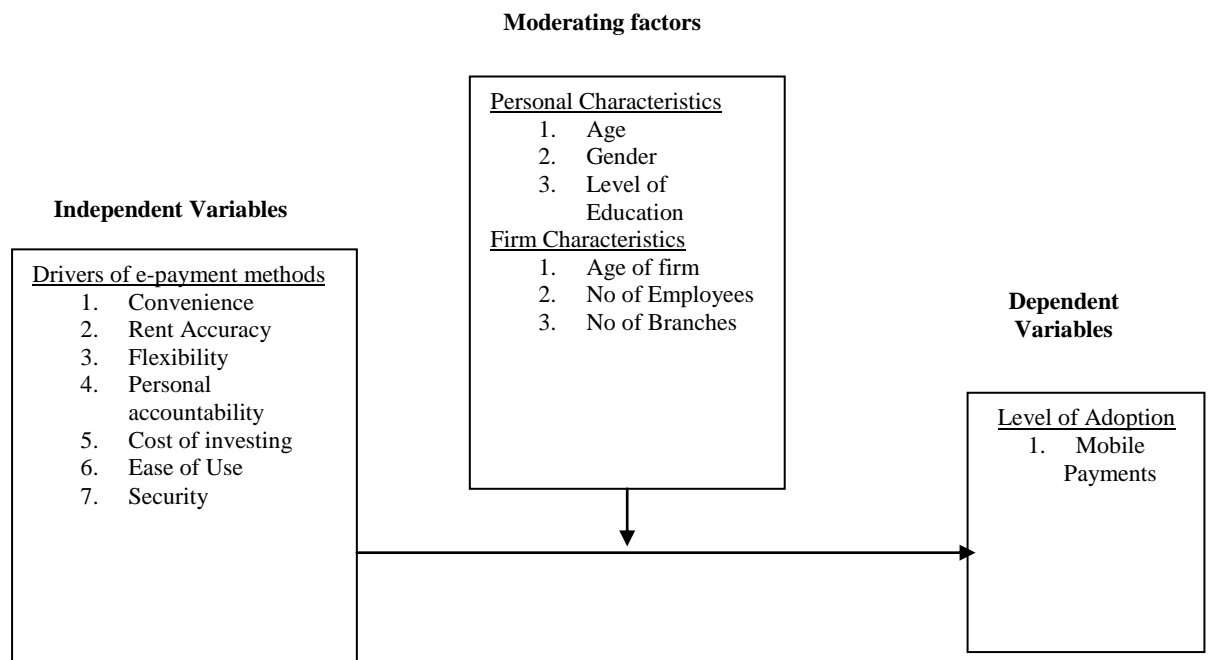
Figure 2.4: Conceptual Framework

2.6 Summary of Literature

Most scholarly studies done on e-payment systems were fixated on e-payment systems in the banking industry and economic growth. However, citing the empirical studies done and the theoretical framework discussed; the determinants, challenges and benefits of e-payment systems gave the impression to be comparable, notwithstanding the demographics or industry. In Kenya's context, many studies and publications threw light over the importance of e-payment systems and the growth of the e-payment methods. However, these studies did not depict an empirical relationship of the drivers of e-payment systems for house rent collection in real estate management. The purpose of this paper was to study the drivers of e-payment systems for house rent collection in real estate management in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the approach used to carry out the study in order to achieve the research objective. The research method is revealed, the target population, data collection technique and finally the data analysis.

3.2 Research Design

This research project adopted a descriptive survey design. Descriptive surveys are used to describe a behavior of a given subject. The study sort to find out the drivers of e-payment systems, benefits and challenges in adoption of electronic payment systems for rent collection in real estate management in Kenya

3.3 Population of the Study

The population for this study was a list of 75 real estate companies in Kenya as detailed in the soft Kenya directory (Soft Kenya) as at September 2015. A census study was used since the entire population was considerably small and it was reasonable to include the entire population to eliminate the sampling error.

3.4 Data Collection Method

The study made use of primary data which was collected through the use of a semi structured questionnaire. In each of the firms, the target respondent was one sales executive, since they are more familiar with the real estate industry business trends and developments. The questionnaire was administered to the respondents through emails due to the geographical spread of the companies across the country.

The questionnaire had the following sections:

Section A: Background Information
Section B: Extent of Adoption of E-Payment Systems
Section C: Drivers of Adopting E-Payment Systems
Section D: Benefits of Adopting E-Payment Systems
Section E: Challenges of Adopting E-Payment Systems

3.5 Data Analysis

After data collection, questionnaires were checked for accuracy and completeness. Data analysis was done using SPSS software package. Objectives a, b, and c, used descriptive statistics. Objectives a, established the extent of e-payment systems adoption for rent collection in real estate management in Kenya. Using Likert scale, objective b, identified the benefits of using of e-payment systems in rent collection in Kenya. Objective c, identified the challenges in the use of e-payment systems for rent collection in Kenya, using a Likert scale. The drivers of e-payment systems adoption for rent collection in real estate management in Kenya was analyzed through regression analysis using the following model:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots \beta_n X_n + \varepsilon$

Whereby Y = level of adoption of e-payment systems

$X_1..X_n$ = Drivers of e-payment systems

Where
X_1 = Convenience in rent payment for tenants
X_2 = Need for accurate accounting of rent amount
X_3 = Flexibility in rent collection
X_4 = Need for personal accountability in rent collection
X_5 = Low cost of investing in e-payment systems
X_6 = Ease of use compared to cash methods
X_7 = Security in rent collection

ε = error term
$\beta_1..\beta_n$ are regression coefficients or parameters to be estimated.

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

The study was guided by the general objective of the study which was to evaluate e-payment adoption in real estate rent collection in Kenya. This chapter presents the study findings and interpretation of the results.

4.2 Response Rate

Out of the 75 questionnaires that were administered for data collection, 60 completed questionnaires were collected. This represents a response rate of 80% which was considered a sufficient representation of all the real estate companies in Kenya. Nakhumwa (2013) in his study found a response rate of 75% which was considered a sufficienct representation of all the real estate firms in Kenya.

4.3 Demographic Information of the Respondents

The study determined the demographic information of the respondents with respect to the age of the respondents, gender, and academic qualification. This information was meant to assess whether the respondents were in a position to give accurate and relevant information.

4.3.1 Distribution of Respondent by Gender

The study sought to determine the gender of the respondents. The results of the findings are as shown in Figure 4.1.

Figure 4.1: Distribution of Respondents by Gender
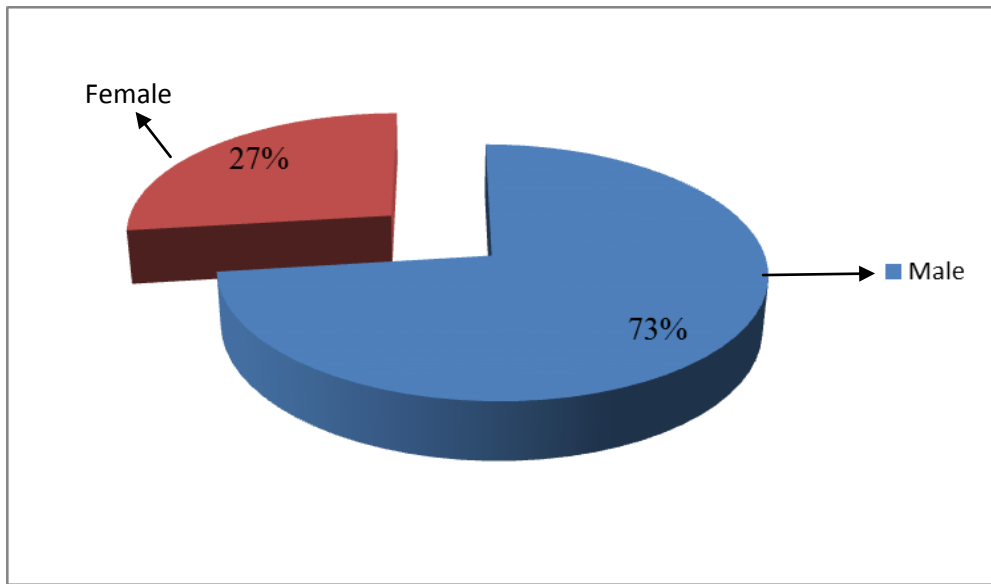
The findings revealed that 73% of the respondents were male while 27% of the respondents were female.

4.3.2 Distribution of Respondents by Age

The study sought to determine the age of the respondents. The findings are shown in Table 4.1.

Table 4.1 Distribution of Respondents by Age

Age Bracket	Frequency	Percent
18-25 Years	2	3
26-35 Years	36	60
36-45 Years	14	23
46 Years and above	8	14
Total	60	100

The findings revealed that 60% of the respondents were between the ages of 26-35 years, 23% of the respondents were between 36-45 years while 14% of the respondents were above the age of 46 years.

4.3.3 Distribution of Respondents by Education Level

The respondents were asked to indicate the level of education. The findings are shown in

Table 4.2.

Table 4.2: Distribution of Respondents by Education Level

Level of education	Frequency	Percentage
Certificate/ Diploma	15	25
First Degree	40	67
Masters	5	8
PhD	-	-
Totals	60	

The findings revealed that 67% of the respondents had a first degree level only, 25% of the

respondents had certificates while only 8% of the respondents had masters degrees.

4.3.4 Years of Operation of Real Estate Firms

The study sought to determine the duration that the real estate companies had been in

operation. The query was open ended and the findings revealed that more than 75% of the

real estate firms had been in operation for a period of five years and above while only 25% of

the real estate firms had been in operation for a period of less than five years.

4.3.5 The Firm's Ownership Structure

The respondents were asked to indicate the structure of the firm to determine whether the

firms were privately owned or foreign. As shown in figure 4.2, 85% of the respondents

indicated that the real estate firms were locally owned while only 15% of the respondents

indicated that real estate firms were foreign owned.

Figure 4.2: Firm's Ownership Structure
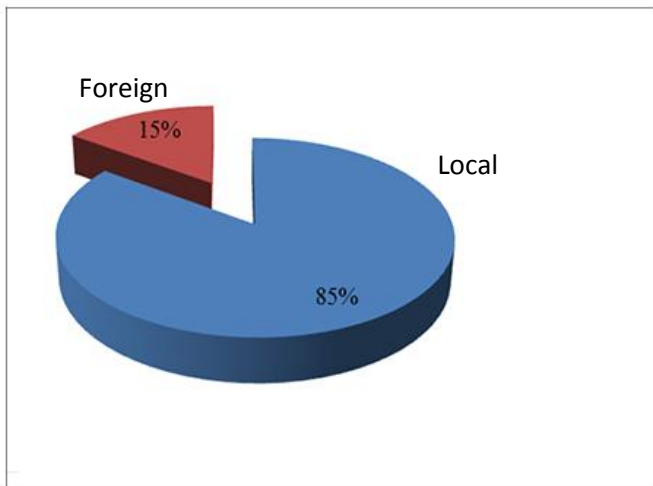
4.3.6 Number of Branches

The study sought to determine the number of branches that the real estate firms had across the country, in order to determine the firm size.

Figure 4.3: Number of Branches
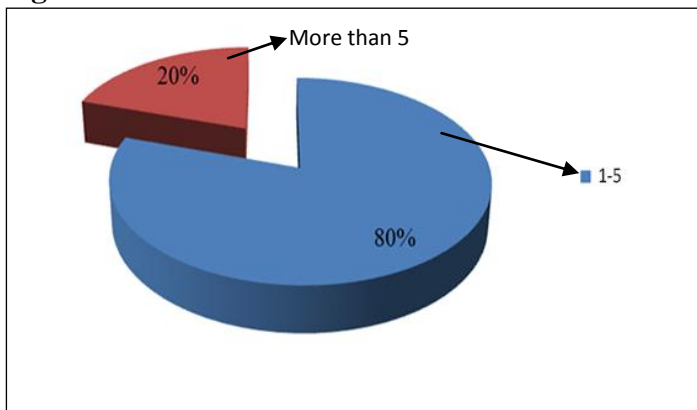
Figure 4.3 reveals that 80% of the real estate companies had 1-5 branches across the country while only 20% of the real estate companies had more than 5 branches.

4.4 Adoption of E-Payment Systems

The study sought to determine the extent of adoption of e-payment systems in rent collection of real estate firms in Kenya. The findings are as shown in Figure 4.4.

Figure 4.4: Adoption of E-Payment Systems
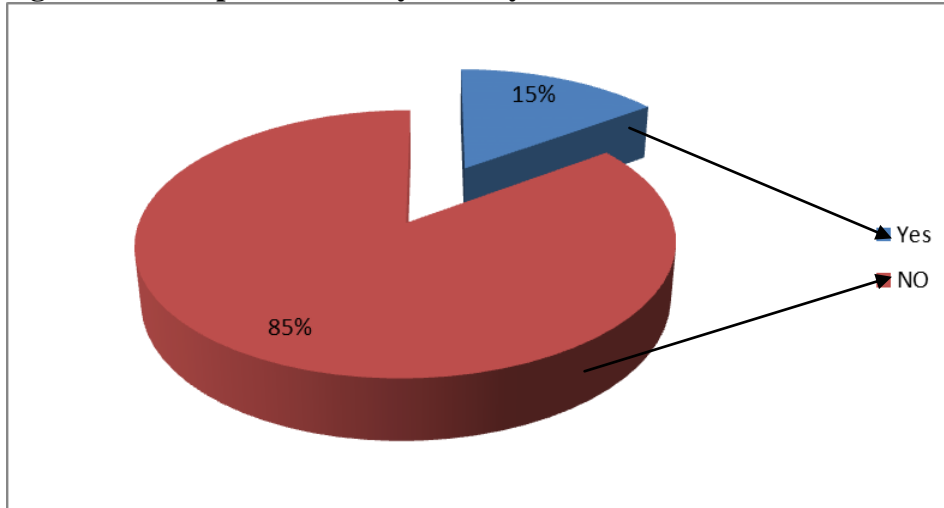
Figure 4.4 reveals that 85% of the respondents had not adopted e-payments systems in rent collection while only 15% of the respondents indicated that they had adopted electronic payments systems in rent collection.

4.5 Rent Collection

The respondents were asked to indicate the method that the firm mostly used to collect monthly rent.

Figure 4.5: Mode of Rent Collection
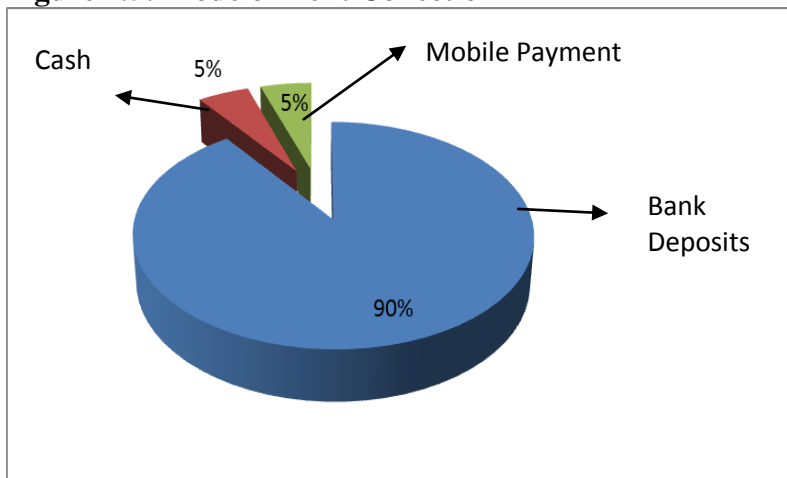
Figure 4.5 reveals that 90% of the respondents mostly collected rent through bank deposits, 5% of the respondents collected their rent using mobile payment while another 5% of the respondents indicated that they collected rent on cash basis.

4.6 Drivers of Adopting E-Payment Systems

The study sought to determine the drivers of e-payment systems used by real estate firms in Kenya. The findings are as shown in Table 4.3.

Table 4.3 Drivers of Adopting E-payment Systems

| Drivers of Adopting E-Payment Systems (X)	N	Mean	Std. Deviation	C.V
Convenience in rent payment for tenants	60	3.96	.514	.403
Need for accurate accounting of rent amount	60	3.84	.555	.432
Flexibility in rent collection	60	3.91	.669	.512
Need for personal accountability in rent collection	60	3.67	.659	.499
Low cost of investing in e-payment systems	60	3.52	.778	.528
Ease of use compared to cash methods	60	3.43	.646	.421
Security in rent collection	60	3.37	.754	.372

The drivers of electronic payment systems in real estate firms with the highest mean were convenience in rent payment for tenants and flexibility in rent collection respectively. However, flexibility in rent collection has a high coefficient of variation, meaning that the respondents varied widely on the five-level Likert scale.

4.7 Benefits of Adopting E-Payment Systems

The respondents were asked to indicate the benefits of adopting e-payment systems in real estate companies in Kenya. The results of the findings are shown in Table 4.4.

Table 4.4: Benefits of E-Payment Systems

Benefits of e-payment systems (X)	N	Mean	Std. Deviation	C.V
E-payments are convenient to use for rent collection	60	3.96	.824	.627
E-payments are easy to use	60	3.54	.767	.596
E-payment systems save time in rent collection	60	3.85	.649	.537
More flexibility in rent collection in rent collection	60	3.55	.779	.629
E-payments systems reduce operation costs of manual filling	60	4.10	.708	.588
E-payments enhance the accuracy of rent collection	60	3.85	.646	.470

The benefits of e-payments systems on rent collection with the highest mean were reduction of operation costs of manual filling descending order and convenience to use for rent collection respectively. However, convenience to use for rent collection respectively had a high coefficient of variation, meaning that that the respondents varied widely on the five-level Likert scale.

4.8   Challenges of Adopting E-Payment Systems

The respondents were requested to indicate the challenges facing adoption of e-payment by real estate companies. The results of the findings are as shown in Table 4.5.

Table 4.5: Challenges of E-Payment Systems Adoption

Challenges of e-payment systems adoption (X)	N	Mean	Std. Deviation	C.V
E-payments systems are costly to invest	60	3.58	.824	.653
Lack trust on e-payments systems due to fraud	60	3.72	.617	.516
Lack of trust on e-payments systems service providers	60	3.88	.549	.378
Lack of e-payments systems infrastructure in the houses	60	3.65	.751	.640
Transaction charges by the e-payment systems hamper adoption of the system	60	3.81	.748	.577

Based on the mean, the main challenges facing adoption of electronic payment systems in real estate companies were lack of trust on e-payments systems service providers and transaction charges by the e-payment systems. Lack of trust on e-payments systems service

providers had the lowest coefficient of variation, meaning that the respondents did not vary widely on the challenge.

4.9 Drivers of E-Payment Systems Adoption

To determine drivers of e-payment systems adoption, regression analysis was used. The e-payment system drivers were regressed against adoption of e-payment systems.

The findings are as shown in table 4.6.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.630[a]	.397	.302	.40181

a. Predictors: (Constant) Convenience in rent payment for tenants, Flexibility in rent collection, Ease of use compared to cash methods, Security in rent collection , Low cost of investing in e-payment systems , Need for personal accountability in rent collection , Need for accurate accounting of rent amount

This implies that 39.7% of the variation in the dependent variable (adoption of electronic payment) is explained by the independent variables (drivers of e-payment system adoption).

Table 4.7: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.111	7	.873	6.021	.000[b]
	Residual	7.539	52	.145		
	Total	13.650	59			

a. Dependent Variable: Adoption of E-payment Systems

b. Predictors: (Constant), Security in rent collection , Need for accurate accounting of rent amount, Low cost of investing in e-payment systems , Flexibility in rent collection, Ease of use compared to cash methods, Need for personal accountability in rent collection , Convenience in rent payment for tenants

As shown in Table 4.7, the model has an F value of 6.021 and P<0.05 and hence the regression model is statistically significant.

Table 4.8: Model of Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.701	.460		1.523	.134
	Convenience in rent payment for tenants (x_1)	-.033	.077	-.057	-.430	.669
	Need for accurate accounting of rent amount (x_2)	.562	.127	.562	4.411	.000
	Flexibility in rent collection (X_3)	-.152	.050	-.607	-3.044	.004
	Need for personal accountability in rent collection (X_4)	.025	.088	.033	.280	.781
	Low cost of investing in e-payment systems (X_5)	-.005	.048	-.011	-.094	.925
	Ease of use compared to cash methods (X_6)	.101	.055	.206	1.830	.073
	Security in rent collection(X_7)	-.020	.056	-.040	-.361	.719

a. Dependent Variable: Adoption of E-payment

The linear regression model obtained in this study was:

$Y=0.562X_2 -0.152X_3 +€$

As shown in Table 4.8, X_2 and X_3 were be statistically significant because their p-values were less than 5%. Hence the drivers of e-payment systems adoption are need for accurate accounting of rent amount with (B=0.562, P<0.05) and flexibility in rent collection with (B=-0.152, P<0.05).

4.10 Discussions of Findings

The study found that the drivers of e-payment systems adoption in real estate firms for rent collection in Kenya were, need for accurate accounting of rent amount and flexibility in rent collection. This supports Chakravorti and Kobor (2003), who made the observations that adoption of payments technology is focused on the target the needs of a particular market niche. The study found that reduction of operation costs of manual filling was a benefit of adopting e-payment systems for rent collection. This is in line with Shapiro (2008) who found out that e-payment systems save time and reduce the administrative burden of

processing paper checks, posting them to a journal, filling out deposit slips, and physically going to the bank to deposit them. The study also found that the rate of adoption in Kenya was still low, which can be explained by the lack of trust on e-payments systems service providers. 85% percent had not adopted the e-payment systems. More so, only 5% of the firms used the e-payment systems as a mode of rent collection. In support of Visa (2011), the biggest constraint to e-payments adoption is lack of trust. According to Rogers (1995), a perception by members of a social system on an innovation, is positively related to the rate of adoption of the innovation. Hence, a negative perception will lead to slow rate of adoption.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary of findings, conclusion, recommendations and suggestions for further research.

5.2 Summary of Findings

In reference to the objectives of the study, 85% of the respondents had not adopted e-payments in rent collection while only 15% of the respondents indicated that they had adopted electronic payments in rent collection. Based on the mean, the drivers of e-payment systems in real estate firms in Kenya were as follows, in descending order: Convenience in rent payment for tenants, Flexibility in rent collection, Need for accurate accounting of rent amount, need for personal accountability, low cost of investing in e-payment systems and security in rent collection. However, flexibility in rent collection had a high coefficient of variation.

The benefits of e-payments on rent collection were as follows, in descending order based on the mean: reduction of operating costs of manual filling, convenience to use rent collection, accuracy of rent collection and saving time in rent collection. The main challenges facing adoption of electronic payment systems in real estate companies were: lack of trust on e-payments systems service providers and transaction charges by the e-payment systems.

A regression of adoption of e-payment systems against the drivers of e-payment systems was done. The regression analysis found that the drivers of e-payment systems adoption were, need for accurate accounting of rent amount with (B=0.562, P<0.05) and flexibility in rent collection with (B=-0.152, P<0.05).

5.3 Conclusion

The study concludes that adoption of electronic payments for rent collection in real estate firms in Kenya is still low. Some of the challenges that have inhibited adoption of electronic payments were as follows: lack of trust on e-payment systems service providers, transaction charges by the e-payment systems and the costs involved in adoption and implementation of electronic payments in real estate firms. The study also concludes that the drivers of adoption of electronic payments systems, for rent collection in real estate firms in Kenya were need for accurate accounting of rent amount and flexibility in rent collection.

5.4 Recommendations

The study recommends that the challenges inhibiting adoption of electronic payment systems to be addressed by both the service providers and real estate management firms, for a higher rate of adoption. Trust on the service providers must be attained by the real estate firms and friendly transaction costs need to be implemented by the service providers.

5.5 Limitations of the Study

The researcher faced time and funding constraints hence this research was restricted to the real estate companies in Kenya only. The other stakeholders of the real estate industry in Kenya were not part of this study. It would be advisable, to get their input also on the adoption of e-payment systems in the real estate industry.

5.6 Suggestions for Further Research

Further research on the adoption of electronic payment systems for rent collection, can be carried on other stakeholders in the real estate industry for example the landlords or tenants.

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APPENDIX

Appendix1: Questionnaire
SURVEY OF USE OF E-PAYMENT SYSTEMS IN REAL ESTATE RENT COLLECTION

I am an MBA student at University of Nairobi, doing a research on "Adoption of e-payment systems for house rent collection in real estate management". I seek your cooperation in answering the questions in the questionnaire. Your feedback will be kept **confidential**. Please mark [X] in the appropriate box wherever required

SECTION A: BACKGROUND INFORMATION

1. Personal Information

a) Kindly tick your age bracket

18-25 Years ☐
26-35 Years ☐
36-45Years ☐
>46 years ☐

(a) Gender: Female ☐   Male ☐

(b) Kindly tick your highest level of education:

Certificate/Diploma ☐
Degree ☐
Masters ☐
Phd ☐

2. Firm Characteristics

(a) How many years has the firm been operational? _____

(b) What is the firm's ownership structure?
Local ☐   Foreign ☐

(c) How many branches do you have in Kenya? 1-5 ☐   >5 ☐

SECTION B: EXTENT OF ADOPTION OF E-PAYMENT SYSTEMS

1. Has the firm adopted e-payment systems in rent collection?

Yes ☐   No ☐

2. The firm mostly collects rent using the following:

E-payment systems (Mobile payments)   ☐
Bank deposit by tenants and the tenants present the slip   ☐
I receive cash from tenants   ☐

SECTION C: DRIVERS OF ADOPTING E-PAYMENT SYSTEMS

Kindly tick against each statement that best describes the perceived driver of e-payment systems adoption by real estate companies.

		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
a)	Convenience in rent payment for tenants					
b)	Need for accurate accounting of rent amount					
c)	Flexibility in rent collection					
d)	Need for personal accountability in rent collection					
e)	Low cost of investing in e-payment systems					
f)	Ease of use compared to cash methods					
g)	Security in rent collection					

SECTION D: BENEFITS OF ADOPTING E-PAYMENT SYSTEMS

Kindly tick one option for each benefit of adopting e-payment systems where necessary.

		Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
a)	E-payment systems are convenient to use for rent collection					
b)	E-payment systems are easy to use					
c)	E-Payment systems save time in rent collection					
d)	There is more flexibility in rent collection when using e-payment systems					
e)	E-payment systems reduce the operating costs of manual filing					
f)	E-payments enhance the accuracy of rent collection					

SECTION E: CHALLENGES OF ADOPTING E-PAYMENT SYSTEMS

Tick one option for each challenge as perceived.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
a) E-payment systems are costly to invest in, compared to cash methods					
b) There is lack of trust on the e-payment systems due to fraud					
c) There is Lack of trust on the e-payment systems service providers because of risk of giving data to government institutions e.g. KRA					
d) There lacks e-payment systems infrastructure in the houses for rent collection					
e) Transaction charges by the e-payment systems hamper adoption of the systems					

Thank you for filling in the Questionnaire

Appendix 2: List of Property and Real Estate Companies in Kenya

1. Active Homes
2. Afriland Agencies
3. Ark Consultants Ltd
4. Barloworld Logistics (Kenya) Ltd
5. Betterdayz Estates
6. British American Asset Managers
7. Canaan Properties
8. Capital City Limited
9. CB Richard Ellis
10. Colburns Holdings Ltd
11. Coral Property Consultants Ltd
12. Country Homes and Properties
13. Crown Homes Management
14. Crystal Valuers Limited
15. Daykio Plantations Limited
16. Double K Information Agents
17. Dream Properties
18. Dunhlill Consulting Ltd
19. East Gate apartments limited
20. Eastwood Consulting Limited
21. Ebony Estates Limited
22. Economic Housing Group
23. Elgeyo Gardens Limited
24. Fairway Realtors And Precision Valuers
25. FriYads Real Estate
26. Gimco Limited
27. Greenspan Housing
28. Hajar Services Limited
29. Halifax Estate Agency Ltd.
30. HassConsult
31. Hewton Limited
32. Homes and lifestyles
33. Housing Finance
34. Jacent Properties Limited
35. Jimly Properties Ltd
36. Jogoo Road Properties
37. Josekinyaga Enterprises Ltd
38. Josmarg Agencies
39. Kali Security Co Ltd
40. Karengata Property Managers
41. Kenya Prime Properties Ltd
42. Kenya Property Point
43. Kilifi Konnection
44. Kiragu & Mwangi Limited
45. Kitengela Properties Limited
46. Knight Frank Limited
47. Kusyombunguo Lukenya
48. Land & Homes
49. Langata Link Estate Agents
50. Langata Link Ltd
51. Lantana Homes
52. Legend Management Ltd
53. Lloyd Masika Limited
54. Mamuka Valuers (M) Ltd
55. Mark Properties Ltd.
56. MarketPower Limited
57. Mentor Group Ltd
58. Merlik Agencies
59. Metrocosmo Ltd
60. Mombasa Beach Apartments
61. Monako Investment Ltd
62. Muigai Commercial Agencies Ltd.
63. Myspace Properties (K) Ltd.
64. N W Realite Ltd
65. Nairobi Real Estates
66. Neptune Shelters Ltd
67. Oldman Properties Ltd
68. Oloip Properties
69. Ounga Commercial Agencies
70. Palace Projects Limited
71. Property Investment Network
72. property zote.com
73. Raju Estate Agency Limited (REAL)
74. Tysons Limited
75. Urban Properties Consultants & Developers Ltd