

**THE EFFECT OF E-PAYMENT SYSTEM ON REVENUE COLLECTION BY THE
NAIROBI CITY COUNTY GOVERNMENT**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
AWARD OF DEGREE OF MASTER OF BUSINESS ADMINISTRATION, SCHOOL
OF BUSINESS OF UNIVERSITY OF NAIROBI**

2015

DECLARATION

This research work is my original work and was not been presented for examination in any other university.

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DEDICATION

I dedicated to my family for their support and prayers especially my daughters Angel (Mum), Crystal (Toto), my wife Irene for their patience when I was busy with my studies. To my late farther Samson Okiro for showing me the value of education early in life, I will always cherish your ideals dad.

ACKNOWLEDGEMENT

First, I wish to acknowledge the almighty God for this far he has brought me and enable me to accomplish this project.

Secondly, I wish to acknowledge my supervisor Ms. Winnie Myamute for his tireless guidance and positive criticism in this project work.

I also acknowledge the staff of Nairobi City county for providing me with the necessary information required for this project.

My sincere thanks also go to my fellow students and colleagues in office who helped in various consultative discussions during this project work.

ABSTRACT

A sound revenue system for devolved governments sets the pace for the success of fiscal decentralization, since it is the avenue for administrative accountability by empowering communities. Nowadays, modern e-payment services provide convenience in revenue that highly improve revenue collection performance and gain a competitive edge. The county governments therefore needs to improve targeting revenue collection mechanisms and systems to reach collection targets aimed at expanding the revenue base and increasing tax compliance through integration of proper technology in revenue collection. However, there is a rising challenge as far as adoption of e-payment adoption by County Governments in Kenya is concerned. Since this is a new technology in Kenya and there are limited studies and information about e-payment in Kenya. However, studies have not significantly addressed the factors of e-payment system affecting revenue collection by the Nairobi City County Government, a knowledge gap. It is in this light that this study sought to addresses; level of compliance to budget estimates, and absorption of the e-payment by the payers, resulting from the e-payments system as factor influencing performance of revenue collection by the County Government, as it fills the existing knowledge gap, in an effort to recommend on ways to ensuring optimal revenue collection. The objective of the study was to determine the effect of e-payment system on revenue collection by the Nairobi City County Government. This study used a descriptive research in soliciting information in the area of research and its target population was selected 18 Nairobi government departments, which were operational between 2013 and 2015. Data was collected from secondary sources and analyzed, with respect to the study objectives using both descriptive and inferential statistics. The study found that revealed that the revenue collection performance in Nairobi City County increased considerably after introduction of e-payment system in revenue collection. The study concludes that the adoption e-payment system positively influences the revenue collection performance in Nairobi City County. There was a significant relationship between level of compliance to budget estimates in before adoption e-payment (p -value= .000) and level of compliance to budget estimates after adoption of e-payment (p -value = .041) and revenue collection performance in Nairobi City County government, since the p value for each predictor variable was less than 0.05. It was found that 92.20% of variation in revenue collection performance in Nairobi City County government is explained by the adoption of e-payment and before adopt e-payment. The study recommends that the Government of Nairobi City County should ensure that all its wards, departments and other related units are compelled by regulations to adopt e-payment and other ensure management of revenue collection system to lead to assurance total compliance to the budgets and there should be awareness campaigns to ensure that the consumers get the right information as pertains to e-payment revenue collection.

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ABBREVIATIONS

ATM	Automated Teller Machine
BPA	British Parking Association
E-Cash	Electronic Cash
EFT	Electronic Funds Transfer
E-payment	Electronic Payment
FY	Financial Year
GoK	Government of Kenya
ICT	Information Communication Technology
IS	Information Systems
OECD	Organization for Economic Co-Operation and Development
P2P	Digital Person to Person
RBV	Resource Based View Theory
RDT	Revenue Diversification Theory
RoK	Republic of Kenya
SPSS	Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Revenue collection is very important for every government in the world as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy (Ngotho & Kerongo, 2014). More importantly, high revenue collection performance is vital to promote efficiency in the service delivery and economic development at the counties. However, studies and other journal publication have shown that most governments face serious challenges in their revenue collection performance (Balunywa, 2014), where governments are not able to collect sufficient funds to cover their budget expectations. For years revenue collectors have not been channeling all the amount of money they collect to the County Treasury (Ngotho & Kerongo, 2014).

For instance, revenue collection staff may collude with the revenue payers to avoid paying the prescribed charges and instead bribe the collector to shield against paying the correct amount to the City County. The net effect could be a bigger loss, which would deter county economic development (Mutakha, 2011; Mwangi, 2010), growth (Olatunji, 2009), and improved service delivery (Namoit, 2012). To eliminate or significantly reduce corruption, achieve the county financial objective and simplify payments (Abor, 2004), the Electronic Payment (E-Payment) has been introduced (Njanja, 2014). In fact, the world has witnessed an upsurge of Electronic Payment (Njanja, 2014) system meant to facilitate elimination of losses of revenue through corruption (Balunywa, 2014) and simplify payments (Abor, 2004).

E-payment is a payment by direct credit, Electronic Transfer of credit card details, or some other electronic means, as opposed to payment by cheque and cash. (Agimo, 2004). E-payment is a payer's transfer of a monetary claim on a party acceptable to the beneficiary, a financial exchange that takes place online between the buyer and the seller. The process of cashless transactions plays a big role in ensuring that the County Governments collect enough revenue to fund its projects.

1.1.1 E-Payment System

E-payment has been designed to help individual customers and companies as well as the banks itself in eliminating or reducing some of the problems inherent in the settlement and payment process. Customers can pay their bills without having to actually move to the bank's premises (Wahab, 2012). They may also have access to their account information and even transfer money to other accounts in the comfort of their homes.

When it comes to making electronic payments, there are a handful of options available to people, primarily: checks, Electronic Funds Transfer (EFT), Automated Teller Machine (ATM), cards (debit, credit and smart), Electronic Purses/Wallets, mobile money (Mobile Banking and Money Transfer), Telephone Banking, Personal Computer Banking (Home Banking), Digitized 'E-Cash' Systems, Electronic Cheque, Online/Internet Payments and Digital Person to Person (P2P) Payments (Wahab, 2012). The content of P2P exchange is usually the form of digital financial instrument such as encrypted credit card numbers, electronic checks, or digital cash that is backed by a bank or an intermediary, or by a legal tender.

According to Pariwat & Hataiseere (2004), for the achievement of effective and efficient retail payment systems, the following considerations that shape the choice of

payment method for consumers and businesses should be taken into account; the convenience, reliability and security of the payment method, the service quality, involving such features as the speed with which payment are processed; the level and structure of fees charged by financial institutions; taste and demographic; and technological advances which have improve the speed, convenience and flexibility of different payment systems. E-payment is convenient, safe, and secure methods for payment of bills and other transactions by electronic means such as card, telephone, the Internet, Electronic Fund Transfer. Electronic payment gives consumers an alternative to paying bills and debts by cash, cheque and money order (Wahab, 2012)

1.1.2 Revenue Collection in County Governments

Revenue collection is very important for every County Government globally as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy. So, revenue is collected by the government upon its citizens for support or for the purpose of facilitating the Service Delivery in a country (Aamir *et al.*, 2011). It is neither a voluntary payment by the tax payer nor like a donation. Rather it is an enforced payment to the government (Garner, 1999). County Governments therefore collect revenue for investment, Socio-Economic development and growth at the grassroots (Olatunji, 2009) and service delivery. Thus collection of adequate revenue by County Government is essential for economic development, growth, and improved service delivery at the County level (Clegg & Greg, 2010).

So, sound revenue system for county governments is a vital pre-condition for the success in promoting efficiency in the service delivery and economic development at the counties (Ngotho & Kerongo, 2014). For most developing countries, revenue

collection goes hand-in-hand with economic growth and the revenue is the lifeblood for governments to deliver essential services and to make long-term investments in public goods (Organization for Economic Co-Operation and Development [OECD], 2008).

However, revenue collection in the developing economies like Kenya has not always been as effective as it should be. They face various challenges in their revenue collection performance (Owuor *et al.*, 2013), where counties are not able to collect sufficient funds to cover their budget expectations and thereby causing huge local revenue collection gaps (ICPAK, 2014; Onyango, 2013). Ismail (2013) indicates that the main challenges in revenue collection rotate around revenue collection system.

The performance of revenue collection in County governments is deteriorated by corrupt practices issues which result into tax evasion through corruption by corrupt revenue collection officers (Balunywa, 2014). Completely avoiding tax evasion, ensure total revenue collection performance (high revenue collection compliance). Elimination of corruption would ensure that the county collects all the projected revenue and thereby increasing the revenue collection performance.

1.1.3 E-Payment and Revenue Collection

Though the major aim of Revenue Collection for most governments is to stimulate and guide the economic and social development of the country, there are several determinants for an effective realization of the exercise. As such County governments are successfully implementing E-payment to overcome the challenges of the corruption earlier experienced by the former city, municipal and county and therefore enhance optimal revenue collection. According to Balunywa *et al.* (2014), the use of Information Communication Technology (ICT), such as e-payment, would

considerably increase the revenue collection as it helps tracking noncompliant revenue payers.

Thus, the implementation of e-payment is paramount in ensuring optimal revenue collection. Various ICT based revenue collection applications are available for use in the modern world today. These are simply referred to as Electronic Payment (E-payment) system (Ndunda, Ngahu & Wanyoike, 2015), integrated into revenue collection. The E-payment system is accessible online through Point of Sale (PoS) terminal devices and physical agents (such mobile phones, debit cards, agents, mobile money). The E-payment is intended to help the companies using it to eliminating or reducing and minimizing corruption (some of the problems inherent in the settlement and payment process), by allowing customers to pay their bills without having to actually move to the firm premises. The customers have access to their account information and even transfer money to other accounts in the comfort of their homes (Wahab, 2012).

1.1.4 Nairobi County

Promulgated new constitution of Kenya (Republic of Kenya [Rok], (2010) lays the basis of devolution of funds in Kenya (Owuor, *et al.*, 2013) to the 47 County Governments (Namoit, 2012). This constitution empowers counties to collect revenue and incur expense locally (Owuor, *et al.*, 2013) on economic development, economic growth and improved service delivery at the county level (Ngotho & Kerongo, 2014) without relying on the National Government (Muriisa, 2008).

The Nairobi County government was the first county to adopt e-payment system in Kenya, which went live to bring efficiency and convenience in revenue collection (Njanja, 2014). In Nairobi City (which is within Nairobi County), users of city

parking space can make payments using mobile money, debit cards, over-the counter payments at 29 partner banks and at independent agent stalls spread across the city. The agents send money on behalf of a client but issue a receipt to confirm the transaction. All the digital payment options offered are linked to the system through the Nairobi County e-wallet that is created on signing up. No charges are incurred when making payments through independent agents, the e-county mobile app and using mobile money, but banks offering the service may impose a charge on transactions.

The e-payment system in Nairobi County is used for parking fees, single business permit, rent and land rates (Mueke, 2015). Revenue collection is very important for every county government as it enables the government to acquire assets which are not liable to debt and which the government uses to develop its economy. However, revenue collection in the developing economies in counties has not always been as effective as it should be (Ngotho & Kerongo, 2014). To eliminate or significantly reduce corruption, the e-payment project provides an alternative means of payment of county revenue that do not require cash to exchange hands (Kinyanjui & Kahonge, 2013)

1.2 Research Problem

The enactment and adoption of Constitution of Kenya 2010 saw the devolvement of several public services to the County Governments (Rok, 2010), including revenue collection by these governments to finance their operations and/or functions (Ndunda *et al.*, 2015). The County Governments get their revenue from taxation, permit fees, cess, license fees, parking fees and other sources (Odd-Helge, 2006). When the County Governments fail to optimally collect requisite revenues, the public will

negatively be affected by being denied vital services, a challenges that would drastically affect the devolution process (Fjeldstad & Heggstad, 2012). On the contrary, a sound revenue system for devolved governments sets the pace for the success of fiscal decentralization (Bird, 2010), since it is the avenue for administrative accountability by empowering communities. According to Muema *et al.* (2014), modern e-payment services, such as smart parking service, provide convenience in revenue collection through use of devices such as mobile devices in the parking industry, highly improve revenue collection performance and gain a competitive edge. (British Parking Association [BPA], 2012; Wang & Wenbo, 2013).

However, there is a rising challenge as far as adoption of e-payment adoption by County Governments in Kenya is concerned. Since this is a new technology in Kenya and there are limited studies and information about online banking in Kenya. So, the adoption of online payment needs to be treated with caution (Muema, *et al.*, 2014). For instance, the Nairobi County Government, the e-payment introduced the e-payment to enhance its revenue collection and to check theft of county revenue by corrupt officials. Although the e-payment revenue from business licenses have grown 60 percent (Mueke, 2015), the system is yet to bear fruit because some officials are sabotaging it. Most of the fees the government charged still ended up in the pockets of county government staff. For instance, it had been revealed that half of city's revenue cash does not reach the county treasury but ended up in the pocket of the county revenue collectors (Muchemi, 2015). So, the e-payment system faced the challenge of some officers, did not welcome it, colluding with revenue payer to defraud the county. As results, the county achieved only 24.34 per cent of the revenue targets for 2014-15 by mid-year. The county therefore needed to improve targeting revenue collection mechanisms and systems to reach collection targets (Wekesa, 2015) aimed at

expanding the revenue base and increasing tax compliance through integration of proper technology in revenue collection. The performance of the e-payments achievement of its core objective in performance of revenue collection was characterized by; level of compliance to budget estimates, and rate of adoption by the payers (Kinyanjui & Kahonge, 2013) by the payers (Kinyanjui & Kahonge, 2013) and level of penalty recovery.

However, studies (such as by; Muema *et al.* (2014); Kinyanjui and Kahonge (2013); Wahab (2012); Rocheleau and Wu (2005)) had not significantly addressed the effect of e-payment system on revenue collection by the Nairobi City County Government. This is to say that past studies had not sufficiently addressed the factors of e-payment system affecting revenue collection by the Nairobi City County Government, a knowledge gap. It is in this light that this study sought to address, level of compliance to budget estimates, and rate of adoption by the payers (absorption of the e-payment by the payers, resulting from the e-payments system as factor influencing performance of revenue collection by the Nairobi City County Government, as it filled the existing knowledge gap, in an effort to recommend on ways to ensuring optimal revenue collection. The study attempted to establish whether the E-payment affect revenue collection in Nairobi County.

1.3 Objectives of the Study

The objective of the study was to determine the effect of e-payment system on revenue collection by the Nairobi City County Government.

1.4 Value of the Study

The study findings and recommendation would be beneficial to County Governments, National Government, and the citizens of both governments. The Nairobi City County government would benefit by gaining information on how to ensure effective e-payment that would enrich the revenue collection by the government hence achieve the objectives of the county and propel socio-economic development through effective revenue collection performance. The potential success story of Nairobi County would also motivate other peer Counties to emulate this trend.

The findings of the study would enable the National Government to recognize the role of County Governments in creating effective strategies to enhance revenue generation. The National government and its agencies might gain by obtaining information to enable them put in place policies to support the achievement and sustainability of devolved funds for socio-economic benefit through effective revenue collection mechanisms.

The study added knowledge in the public-private devolution and revenue allocation in a devolved government, making it useful to academicians and scholars. The findings from the study would contribute to the body of scholarly knowledge in e-payments as a tool to optimal revenue collection. The study was a window opener for more research in the area of effective e-payment systems that would enhance high revenue collection performance, making it useful to researchers and scientists.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature pertinent to the study as presented by various researchers, scholars', analysts and authors. It summarizes literature that has been reviewed for the purpose of the study with regards to E-payment and revenue collection performance. The literature covers an empirical review, which is an overview of the literature of past studies, findings and recommendation showing the research gap to be filled. It also has a review of theoretical literature (theoretical framework). Lastly, the conceptual framework of the study and summary is provided.

2.2 Theoretical Review

The present study reviewed various theories e-payment and revenue collection. The main theories reviewed include the Revenue Diversification Theory (RDT), Resource Based View Theory (RBV), and The Expediency Theory of Taxation.

2.2.1 Revenue Diversification Theory (RDT)

Bernelot (2013) suggest that revenue diversification, i.e. an equal balance between multiple incomes sources in the revenue portfolio of nonprofit organizations usually lead to increased financial stability. In this study the revenue diversification strategy that stems from the financial Modern Portfolio Theory, will be applied as the second potential revenue strategy for county governments. According to Bernelot (2013), the revenue diversification theory focuses on whether a more diversified, well-balanced revenue portfolio increases financial stability for county by reducing revenue

volatility. There is a positive effect of the strategies adopted in raising revenues on finances. Commercial and market-oriented revenue strategies have been found to have a positive effect on revenue collection performance.

2.2.2 Resource Based View Theory (RBV)

According to Martinez-Costa et al., (2008), the resource based view theory is theory, which has become one of the most widely used theoretical frameworks in the Strategic Management (Newbert 2007), holds that the success of a firm is based on the resources and capabilities it holds in control which may become a source of competitive advantage. Scholars have always related dynamic capabilities to Resource Based View (RBV) and in the process defined it as the key strategic and organizational routine used by the Managers to alter their resource bases to generate new value-creating strategies (Helfat and Peteraf, 2003).

Dynamic capabilities are the buffer between resources of the firm and the shifting business environment, which enhance sustainability of its competitive advantage (Protogerou et al 2008; Ambrosini et al, 2009). This a sentiment that was held firmly onto by Barney (1991), who posits that for a resource to yield competitive advantage, it must be valuable, rare among competitors, imperfectly imitable, and should not be substitutable by competitors. According to Fahy (2002), the role of company managers is crucial to firm-level competitiveness, since their perceptions of the circumstances dictate the selection of resources to be exploited, developed and protected (Sirmon *et al.*, 2007).

As regards e-payments, the adoption is based on internal factors to enhance efficiency and improve processes, the knowledge and expertise gained (Somsuk, 2010), which actually creates opportunities for real competitive advantage (Alcina & Inaki, 2013).

An organization adopting e-payments would adequately improve the revenue collection performance for the county. However, if the motivation for adoption of the e-payments system is solely external, the organization implementing the system would meet the pressures and might not improve revenue collection (Martinez-Costa *et al.*, 2008). The present study find this theory very beneficial in that the theory revenue collection performance measures are used as the indicators to assess the success of the county in achieving stated strategies, objectives and critical success factors (Hass et al. 2005).

2.2.3 The Expediency Theory of Taxation

The expediency theory of taxation states that every tax revenue collection proposal must pass the test of practicability, which must be the only consideration when the county government is choosing a revenue collection proposal. Proposition is that the economic and social objectives of the government should be treated as irrelevant, since it is useless to have a tax which cannot be levied and collected efficiently. However, there are pressures from economic, social and political groups. Every group tries to protect and promote its own interests and county government are often forced to reshape tax structure to accommodate these pressures (Bhartia, 2009).

In addition, the administrative set up may not be efficient to collect the tax at a reasonable cost of collection. Taxation provides a powerful set of policy tools to the authorities and should be effectively used for remedying economic and social ills of the society such as income inequalities, regional disparities, unemployment, cyclical fluctuations and so on (Bhartia, 2009). The expediency is relevant to the present study in that, it seeks to explain influence of administrative set up, such as efficient e-payment system, in revenue collections by County Governments.

2.3 Determinants of E-payments performance

The study borrows heavily from the RBV and the expediency theory of taxation. The RBV is of the indication that an institution adopting e-payments ends up adequately improving its revenue collection performance for the county. As a requirement, the county would need to implement the system that would overcome external pressures and eventually improve revenue collection. The expediency theory of taxation emphasizes on the need for efficient administrative set up to collect enhance high revenue collection performance. One of these set up system include the adoption of an effective and efficient e-payment system.

The study therefore developed a concept which proposes that performance of the revenue collection in Nairobi County is influenced by e-payments system. The main factor contributing to performance of the revenue collection is the efficiency of the e-payments characterised by; compliance to budget estimates and level of adoption (rate of absorption of e-payment) by the payers (Kinyanjui & Kahonge, 2013).

This study therefore regards compliance to budget estimates and rate of adoption as the independent variables (IV) while performance of the revenue collection as the dependent variable (DV).

2.4 Empirical Studies

The present study reviewed various global, regional, and local studies on effects of e-payments on revenue collection performance. For instance, a study by Ndunda *et al.* (2015) revealed that level of tax payment (compliance) affected optimal revenue collection. The study a regression model, which established am marginal relationship between tax compliance and revenue collection. It was established revenue clerks and

tax officials were corrupt and the staff lacked adequate training facilities and opportunities led to inexperienced employees in the County Government. The recommendations by the study were that county governments needed to increase competence of revenue clerks and other County officials and attract skilled and competitive employees for the purpose of increasing revenue collection performance. The study fell short of identifying other systems for improvement of revenue collection, which the current study sought to establish.

A study by Kinuthia and Akinnusi (2014) found that the barriers to e-commerce development were; Economic, Social, Telecommunications infrastructure barrier, legal/political, individual and organizational barriers. The first three variables are positively but moderately correlated with each other, while with the exception of telecommunications infrastructure, others are poorly correlated with individual and organizational barriers. As expected, the latter two correlate moderately with each other. The regression analysis suggests that telecommunications infrastructure barriers hold the key to unlocking the expansions of e-commerce in Kenya, as a decrease in this area would have multiplier effects on the other barriers. The study recommended that the government has a vital role to play in reducing the first four barriers, which are all external to organizations, while at the organizational level, organizations should set (ecommerce) goals and objectives that are well spelt out; build human organizational capital structures to facilitate good working relationships and provide training on e-commerce to minimize resistance and blocking of new changes in organizations.

A study by Nyongesa (2014) recommended for decentralized ICT based tax collection systems and offices in the sub-counties in adoption of differentiation strategies in

revenue collection role in Mombasa County. Among other strategies was; the remission of cash to the nearest bank and not to the cash offices, improved tax rates, widened the tax base, devolution of tax base to county government departments, improved controls on management of cash. However, the use of automation of revenue collection system would widely increase the revenue collection. The study recommends that the County Government of Mombasa needs to automate its revenue collection, through partnering with the regional banks whereby the tax payers will be given option of paying county fees through mobile money or branded credit cards via new revenue collection system. The study also recommends the development of revenue management capacity by training qualified personnel, established proper revenue management mechanisms), so as for the County to provide quality services to the people.

Muema *et al.* (2014) study indicated that Nairobi county and the parking industry were generally ready to adopt the mobile parking management system, although as with any technological adoption it was bound to face some barriers which could be overcome. A study by Kinyanjui and Kahonge (2013) revealed that the use of e-payment by mobile phone based technology in mobile parking increase parking fees collection. However, there is need to develop an application to control traffic flow, allocation and availability of parking space within the streets of Nairobi, which is a major concern to every motorist.

Otieno *et al.* (2013) study found that there is a relationship between Information Systems (IS) and both efficiency and effectiveness in revenue collection, there is a strong positive relationship between Internal Control Systems and revenue collection. However, resistance to change by the council staff was derailing the full

implementation of IS. The study is useful to the present study for full integration of IS, and more specifically e-payment system, in revenue collection. A study by Wahab (2012) established that the adoption and use of the e-payment system was found to be low mainly due to the inadequate availability of point of sale terminals at shopping points among others. These are affecting the perceived ease of use even though the perceived usefulness of e-payment systems is strongly present among individuals and businesses. The study recommended customer education and wide spread deployment of e-payment point of sale terminals to merchants.

Kayaga (2010) study showed that new technology alone is not sufficient if the government does not recognize the need for skilled tax officials. The scholar further avers that, effective tax administration requires qualified tax personnel with requisite skills to maintain these systems and operate them to their fullest potential. Simiyu's (2010) study indicated established that, tax officers accepted bribes when offered to reduce tax liability and demand for bribes when they visited, a situation that hugely affected revenue collection in Nairobi County, Kenya. Gikandi and Bloor (2010) study found that some factors tended to inhibit the adoption of e-commerce in Kenya. These include; lack of resources, constant change in technology, time available to develop systems, the lack of spread of accessibility and use of Internet by the general population, especially in the rural areas. Organizational, governmental and developmental issues were also identified as constraints to the adoption of e-commerce in the banking sector in Kenya. The study observed that e-banking introduced new risks requiring new risk management strategies, including Internet security, customer and legal related issues. The study concluded by emphasizing the role of Kenya Government in achieving a secure environment for e-banking activities

by; putting in place clear laws, rules and regulations and providing relevant technical training to the regulatory authority to empower them to enforce the laws effectively.

The study by Rocheleau and Wu (2005) found that some of the most challenging e-government applications involve allowing citizens and other customers to conduct financially related transactions electronically with governments on a 24-hour, 7-day a week basis. Generally, usage rates are low, demonstrating that there is a gap between the potential and reality of this form of e-government. Statistical tests showed that convenience fees have a negative effect on usage rates. The governments can affect usage rates by providing incentives to employ online transactions and/or penalties for making payment by manual methods. Governments may also improve their usage rates by making their websites and applications accessible and easy-to-use as well as by extensively marketing these applications.

A study by Moulder (2005) showed that most county governments had plans to offer online payment of utility bills, fees and fines. Norris & Moon (2005) point out that the percent of governments adopting e-payments financial transactions should have jumped by 32 per cent between 2000 and 2002 but the actual increase was only 6.5 percent. There are significant obstacles to offering online services which included; lack of IT staff and financial resources; issues of security and convenience. This finding could reflect their interest in developing online transaction systems. The study by Kaburia (2004) found out that lack of suitable e-Payment alternatives was a critical challenge to the growth of e-commerce in Kenya. An e-Payment model suitable for individuals in Kenya was proposed. Perlman (2001) established that the use of third party vendors has allowed counties without large ICT resources to implement an online ticket-paying system. This shows that small and moderately-sized cities can

experience success through use of vendors and cooperative efforts of pooling resources.

2.5 Summary of Literature Review

The study reviewed various literature on theories relate to e-payment and revenue collections. The study reviewed theories found useful to the present study which were; RDT, RBV and the expediency theory of taxation. RDT indicates that there is a positive effect of the strategies adopted in raising revenues, such as the e-payment system, on finances, The RBV shows that adoption of modern system in revenue collection, such e-payments, adequately improves the county's collection performance. The expediency theory of taxation indicates that efficient administrative set up, such as adoption of an effective and efficient e-payment system, highly boost collect revenue collection performance.

The study by Ndunda *et al.* (2015) revealed that level of tax payment (compliance) affected optimal revenue collection but failed to show how use of modern collection system such as e-payment would influence revenue collection performance. Kinuthia and Akinnusi (2014) study found that telecommunications infrastructure barrier was one of barriers to effectiveness of e-commerce but fell short of showing the impact of e-commerce on revenue collection. The study by Nyongesa (2014) found that the use of automation of revenue collection system would widely increase the revenue collection but it was not clear how the revenue collection would be influence by e-payment. In fact the study recommends that the County Government of Mombasa needs to automate its revenue collection without specifying the system to use.

Muema *et al.* (2014) study was vocal in agitating for e-payment in Nairobi County and the parking industry using mobile parking management system but the study was

cognizant of the barriers which could be overcome. The study did not give the specific mechanisms of overcoming these barriers, which the current study will do. The study by Kinyanjui and Kahonge (2013) revealed that the use of e-payment by mobile phone based technology in mobile parking increased parking fees collection. It recommended for development of an application to control traffic flow, allocation and availability of parking space within the streets of Nairobi but failed to handle the penalty payment mechanism, an issue the present study will handle carefully.

Otieno *et al.* (2013) study found that IS enhanced both efficiency and effectiveness in revenue collection but did not touch on e-payment system as means of increasing revenue collection and eliminating corruption. The study by Wahab (2012) established that the adoption and use of the e-payment system was found to be low mainly due to the inadequate availability of resources. Gikandi and Bloor (2010) study found that lack of resources tended to inhibit the adoption of e-commerce in Kenya.

The study by Rocheleau and Wu (2005) found governments can affect usage rates of e-payment by providing incentives to employ online transactions and/or penalties for making payment by manual methods but did not show the effectiveness of the e-payments in risk management. A study by Moulder (2005) showed that most county governments had plans to offer online payment of utility bills, fees and fines. Norris & Moon (2005) point there is interest by governments to use e-payment systems. The study by Kaburia (2004) found out that lack of suitable e-payment alternatives was a critical challenge to the growth of e-commerce in Kenya. Perlman (2001) established that the use of third party vendors has allowed counties without large ICT resources to implement an online ticket-paying system.

Although the studies reviewed provided very useful information to the present study on e-payment and revenue collection, very few have addressed the efficiency of revenue collection as being influenced by; penalty payment system, clamping system, and control within the e-payments system in Nairobi County. This is knowledge that necessitated the need for this study

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an explanation of the research design and the methodology that was applied in carrying out the research study and justification for using a particular research design. It also describes the characteristic of the population which was used in the study, detailed description of sampling methods to be used, procedures, data collection instruments and the procedure of data collection and finally describes the appropriate data analysis methods.

3.2 Research Design

Orodho (2003) defines research design as the scheme, outline or plan that is used to generate answers to research problems. A research design can be regarded as an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance with the research purpose. The study adopted descriptive research design since it describes the state of affairs as it is. Descriptive design is used when collecting information about people's attitudes, opinions, habits and other possible behavior (Orodho and Kombo, 2005). The study aimed at describing the state of affairs of e-payments on revenue collection performance as it is and therefore descriptive research design was considered as the most appropriate for this study.

The characteristics of officers from the Nairobi City County was the focus of descriptive research. It provided a knowledge base which can act as a springboard for other types of quantitative research methods. This involved the collection of data that provided an account or description of the situations. Instruments used to obtain data in

descriptive studies included researcher own tool. This type of research described what existed and might have helped to uncover new facts and meaning. The purpose of descriptive research was to; observe, describe and document the aspects of a situation as it naturally occurs (Polit & Hungler 1999).

3.3 Population and Sample

Target population refers to the entire group of individuals or objects to which a researcher is interested in generalizing the results of the study and having observable same characteristics (Mugenda & Mugenda, 2003). The population was the 18 Nairobi County departments.

Samples are always subsets or small parts of the total number that could be studied (Orodho & Kombo 2002). The study used census since the target population was manageable and easily accessible. All the 18 Nairobi County departments participated in data collection.

3.4 Data Instruments and Collection

Data was collected from secondary sources using desk checking method. The main source of secondary information was published guides, journals, reports and information from internal sources. Secondary data was also obtained from existing documents such as financial statements and journals. The study collected data on the budget to estimates in FY 2013/2014 as well as budget to estimates in FY 2014/2015 from all 18 departments of Nairobi City County. Further, the study also collected data on revenue collected in FY 2013/2014 as well as revenue collected in FY 2014/2015 for each of the 18 departments in Nairobi City County. The data representing the e-payment was calculated as the difference between level of compliance to budget

estimates in FY 2014-2015 and level of compliance to budget estimates in FY 2013-2014 for each department. The data was summarized into the main expenditure and data collection vote heads.

3.5 Pre-Testing

The study conducted a pre-testing of the research instrument before administering it, in an attempt to test the reliability and validity of the research tool. The exercise enabled the study to identify possible problems; clarify on the instrument and appropriateness of the language during the main study. The pilot also assessed the relevance of the research objectives; test the respondents' understanding of the research tool and any potential problems. It was also possible to establish how long it would take to complete the questionnaires. The pre-testing aims at determining the reliability of the research tools including the wording, structure and sequence of the questions. It will also test for validity of the research instrument. The pre-test is conducted to detect flaws and weakness in design and instrumentation and to provide data for selection of a probability sample.

3.5.1 Validity

Validity, which is the degree to which result obtained from analysis of the data actually represents the phenomenon under study, was done to test the tool for accuracy and meaningfulness using content validity test. This measured the degree to which data collected using a particular the tool represented the specific domain of indicators/content of efficiency of irrigation water use. The assessment of content validity was carried by two professional experts; e-payment expert and revenue collection expert. The e-payment consultant, who is the supervisor, assessed the tools to establish what concept the instrument was trying to measure. The revenue

collection expert determined whether the sets of items can accurately measure the performance of revenue collection. The Experts were requested to comment on the representativeness and suitability of questions and give suggestions on the structure of the tools. This helped improve the content validity of the data that was collected.

3.5.2 Reliability

Reliability was conducted to a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003; Cooper & Schindler, 2008). The data was tested for reliability to establish issues such as data sources, methods of data collection, time of collection, presence of any biasness and the level of accuracy. The test for reliability established the extent to which results were consistent over time. The researcher improved the instrument by reviewing or deleting inconsistent items from the instrument. To test for reliability, the study used the internal consistency technique.

3.6 Data Analysis

Data Sampling, classification and analysis was done in order to come up with clear, understandable, up-to-date, genuine and reliable information aimed at achieving objectives of the research study. The collected data was thoroughly examined and checked for errors and tabulated accordingly. The study used descriptive statistics to analyze the data to establish patterns, trends and relationships. The various representation of information include: figures, tables, and narrative.

The conceptual model was $Y = f(X_1, X_2)$

Y = Performance of revenue collection , measured in terms of the difference between Level of compliance to budget estimates in FY 2014-2015 and

Level of compliance to budget estimates in FY 2013-2014 (Level of compliance to budget estimates in FY 2014-2015 - Level of compliance to budget estimates in FY 2013-2014)

X_1 = Level of compliance to budget estimates in FY 2013-2014, measured in terms of percentage of revenue collection to budget estimates

X_2 = Level of compliance to budget estimates in FY 2014-2015, measured in terms of percentage of revenue collection to budget estimates

The study data was collected from secondary sources of Nairobi County financial statements and reports. To measure the performance of revenue collection (RV), the study collected data on revenue collected in the Fiscal Year (FY) 2013/2014 and compare this to the revenue collected in the FY 2014/2015. The study then established the rate of growth or decline in revenue collection, performance of revenue collection.

The study also established the growth or decline in compliance to budget to estimates, level of compliance to budget estimates by obtaining the rate of compliance to budget to estimates in FY 2013/2014 and rate compliance to budget to estimates in FY 2014/2015. The performance of revenue collection was the difference between the two rates, rate of compliance to budget to estimates in FY 2013/2014 and rate of compliance to budget to estimates in FY 2014/2015.

Thereafter, regression was carried out to estimate a model to explain performance of Revenue Collection in terms of; level of compliance to budget estimates, rate of adoption, and level of penalty recovery resulting from the e-payments. The study carried out multiple regression analysis to establish the relationship between the

independent variables (predictor) and dependent variable (response) and measure the strength of the relationship based on the regression model below. The regression was achieved using multiple regression analysis to establish the nature of the relationship based on the model;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \dots\dots\dots (3.1)$$

Where:

β_0 = is a constant, which is the value of dependent variable when all the independent variables are 0

$\beta_1 - \beta_2$ = Regression coefficients of independent variables or change induced by X_1 and X_2

ε = Error of prediction

Y = Performance of revenue collection, measured in terms of the difference between Level of compliance to budget estimates in FY 2014-2015 and Level of compliance to budget estimates in FY 2013-2014 (Level of compliance to budget estimates in FY 2014-2015 - Level of compliance to budget estimates in FY 2013-2014)

X_1 = Level of compliance to budget estimates in FY 2013-2014, measured in terms of percentage of revenue collection to budget estimates

X_2 = Level of compliance to budget estimates in FY 2014-2015, measured in terms of percentage of revenue collection to budget estimates

The values for level of compliance to budget estimates were regressed against the performance of revenue collection to estimate the study model. The study used IBM Statistical Package for Social Science (SPSS) ver 20.0 software.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter contains data analysis, results, and discussions from the analysis of the collected data. The results from analysis were presented using tables and interpretation in form of narratives. The study analysed the data using descriptive statistics and thereafter inferential analysis. Further, the chapter contains discussions of the research findings. When discussing the results, the study referenced the literature reviewed in chapter two, which was both theoretical literature and empirical studies.

4.1.1 Study Response

The study sample population was chose to use 35 ISO certified government institutions and 35 non certified institutions as the, which translated to sample population of 70 respondents. The entire study sample population responded to the study by availing all the required data for 2014-2014 FY and 2014-2015 FY. So, the response rate was also 100%. The response was very high from the words of Mugenda and Mugenda (2003), who classified response variously. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate, any response not exceeding 60% and greater than 50% is good, and response rate above 69% is very high. The response of 100% was therefore very good and would produce useful data, further, all the areas of data collection were represented.

4.2 Descriptive Analysis

The study used the study objective to analyze the data and considered three variables, level of compliance to budget estimates in FY 2013-2014 (Independent variable), level of compliance to budget estimates in FY 2014-2015 (Independent variable) and change in performance of revenue collection (Dependent variable). The study objective was to evaluate the effects of e-payment on performance of revenue collection in Nairobi City County. First, the study analyzed the data using descriptive statistics. The study could not obtain data for FY 2013/2014 because there was change of hand from the former Nairobi City Council to the Nairobi City County Government, after the promulgation of the new constitution and creation of County Governments. The other data that was obtained was for the FY 2014/2015, after the introduction of the e-payment system by the Nairobi City County in some of its revenue collection functions. It was not possible to use other data for detailed analysis.

4.2.1 Revenue Collection performance before and After E-Payment

The study first assessed the performance of revenue collection before the introduction of e-payment and after the introduction of e-payment. The study sought to establish whether there was significant change in the performance of revenue collection due to e-payment system. This was in an effort to establish whether the dependent variable, e-payment affected the performance of revenue collection in Nairobi City County. The study analysed the performance of revenue collection data for each financial year FY; 2013/2014 and 2014/2015. The study also obtained the performance of revenue collection, expressed as percentage for each year where the FY performance was expressed as level of compliance to budget estimates = Revenue collection for the

FY*100/ the Budget Estimates for the FY. This was later expressed a percentage to simplify for interpretation and the results were recorded in Table 1.

Table 1: Analysis on Revenue Collection for FY 2013-14 and FY 2014-15

REVENUE	PEFORMANCE FY 2014-2015 %	PEFORMANCE FY 2013-2014 %	CHANGE IN PERFORMANCE %
ADMINISTRATION DEPARTMENT	98.01	94.25	3.76
DECENTRALIZATION	98.23	98.58	-0.35
COMPLIANCE, FIRE SERVICES AND DISASTER MANAGEMENT	73.72	65.13	8.59
LEGAL DEPARTMENT	98.87	18.56	80.31
INSPECTORATE	95.87	63.82	32.04
FINANCE	98.68	72.13	26.56
HEALTH	96.17	135.36	-39.19
PROCUREMENT	97.12	107.95	-10.83
WATER,ENERGY,FORESTRY,ENVIRONMENT & NATURAL RESOURCES	108.74	54.43	54.31
CITY PLANNING DEPARTMENT	96.23	62.87	33.36
HOUSING DEVELOPMENT DEPARTMENT	100.41	49.10	51.31
VALUATION	90.16	69.45	20.71
HOUSING SECTION	95.48	91.91	3.57
PUBLIC WORKS AND INFRASTRUCTURE	77.04	66.83	10.22
EDUCATION, YOUTH AFFAIRS, SPORTS CULTURE & SOCIAL SERVICES	99.85	64.28	35.58
EDUCATION	99.28	75.65	23.63
TRADE, INDUSTRIALIZATION, CO- OPERATIVE DEVELOPMENT AND TOURISM	89.28	101.46	-12.18
AGRICULTURE ,FORESTRY & NATURAL RESOURCES	104.23	68.77	35.46
AVERAGE	95.41	75.59	19.82

Source: Research Data (2015)

Table 1 showed that on the average performance of revenue collection was higher in FY 2014-15 than in FY 2013-14. In FY 2014-15 the average performance of revenue collection was 95.41% and in In FY 2013-14 the average performance of revenue collection was 72.59%.From these results it was also shown the performance of revenue collection increased by 19.82% for the FY 2013/2014 to FY 2014/2015. Most departments showed higher performance of revenue collection in FY 2014/2015 than in FY 2013/2014.

Legal department recorded the highest increase revenue collection performance of 80.31%, followed by water, energy, forestry, environment & natural resources (54.31%), then housing development department (51.31%) and then education, youth affairs, sports culture & social services (35.58%). The next was agriculture ,forestry & natural resources (35.46%) followed by city planning department (33.36), inspectorate (32.04%), finance (26.56%), education (23.63%), valuation (20.71%), public works and infrastructure (10.22%), compliance, fire services and disaster management (8.59%) and administration department (3.76%). the housing section recorded the least increase in revenue collection performance of 3.57%,

However, other revenue sources showed that they underperformed in FY 2014-2015 as compared in FY 2013-2014. This was indicated by a negative change in revenue collection performance. Health Showed the highest underperformance of -39.19%, the next was trade, industrialization, co-operative development and tourism (-12.18%) as procurement (-10.83%) increase and the, decentralization (-0.35%).

The results in Table 4 indicate that the e-payment considerably influenced the revenue collection performance in Nairobi County between the FY 2014/2015 and 2013/2014. The e-payment considerably influenced the revenue collection performance in Nairobi County between the FY 2014/2015 and 2013/2014. However some revenue source performed poorly after introduction of e-payment system, a situation attributable to the e-payment system not being implemented in some areas. The most pronounced application of e-payment in the Nairobi County government was in parking and rate collections.

4.2.2 Peak Period in Performance of Revenue Collection

The further evaluated the maximum, minimum and average revenue collection value for FY 2014-2015 and 2013/2014, using descriptive statistics. The results obtained were captured in Table 2.

Table 2: Analysis by Revenue Collection Performance Peak Period

Statistics	FY 2014-2015	FY 2013 -2014	CHANGE
	%	%	%
Average Performance	95.40	75.59	19.83
Lowest Performance	73.72	18.56	-39.19
Highest Performance	108.74	135.36	80.31

Source: Research Data (2014)

The results in Table 2 showed that the average performance of revenue collection increased by 19.83% from 75.59% to 95.40% in the FY 2013/2014 and FY 2014/2015 respectively. The lowest performance of revenue collection in FY 2014/2015 was 73.72% and that of FY 2013/2014 was 18.56%, while the lowest change in performance of revenue collection was 39.19%. The highest performance of revenue collection was 135.36% of FY 2013/2014 while that the highest in FY 2014/2015 was 108.74% as the highest change in performance of revenue collection was 80.31%.

4.3 Correlation Analysis

A correlation analysis was carried out on the study variables to establish whether there existed any significant relationship between the dependent variable and the independent variables using 0.05 level of significance test. The study proposed that e-payment system affected revenue collection by the Nairobi City County Government. The assessed whether that there was a statistically significant relationship between e-payment system and the performance of revenue collection used in the study. The data

was analysed using the Pearson’s product method correlating the Dependent Variable (DV); performance of revenue collection to all Independent Variables (IVs); level of compliance to budget estimates in FY 2014-2015, and level of compliance to budget estimates in FY 2013-2014.

The study first correlated the study variables to establish whether there exist any relationship between the IVs and the DV. The result on Table 3 illustrates these relationships.

Table 3: Correlations Statistics of Independent and Dependent Variables

		Correlations		
		Performance of Revenue Collection	Budget Compliance FY 2014-2015	Budget Compliance FY 2013 -2014
Performance of Revenue Collection	Pearson Correlation	1	.765	-.026**
	Sig. (1-tailed)		.046	.000
	N	18	18	18
Budget Compliance FY 2014-2015	Pearson Correlation	.765	1	.130
	Sig. (1-tailed)	.046		.303
	N	18	18	18
Budget Compliance FY 2013 -2014	Pearson Correlation	-.026**	.130	1
	Sig. (1-tailed)	.000	.303	
	N	18	18	18

** . Correlation is significant at the 0.01 level (1-tailed).

Source: Research Data (2015)

The study analysed the correlations as computed in Pearson correlation. The results in table 3 show that under the Pearson correlation, all the Independent Variables; level of compliance to budget estimates in FY 2014/2015 and level of compliance to budget estimates in FY 2013/2014 were statically significant to financial performance. From the results; level of compliance to budget estimates in FY 2014/2015 had the highest relationship ($r = .756$, $p = .046$) and then level of compliance to budget estimates in

FY 2013/2014 ($r = .026$, $p = .000$). For each Independent Variables (IV), the p-value was less than .05. In fact for each Independent Variables, $p < .01 < .05$. This made the relationship very significant. In short, all the Independent Variables can be used to explain revenue collection performance, which allowed for further analysis to establish the regression model.

4.4 Regression Analysis

The independent variables were tested to establish whether they were determinants of dependent variable using multiple regressions using the 0.05 level of significance test. The regressions tests were carried out on the independent variables; level of compliance to budget estimates in FY 2014/2015 and level of compliance to budget estimates in FY 2013/2014 against the dependent variable; revenue collection performance and thereby estimated the model;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \dots\dots\dots (4.1)$$

Where:

β_0 = is a constant, which is the value of dependent variable when all the independent variables are 0

$\beta_1 - \beta_2$ = Regression coefficients of independent variables or change induced by X_1 and X_2

ε = Error of prediction

Y = Performance of Revenue Collection

X_1 = Level of Compliance to Budget Estimates in FY 2013-2014

X_2 = Level of Compliance to Budget Estimates in FY 2014-2015

The values for status of certification, and period of certification will regressed against the mean for Financial Performance to estimate the study model.

Table 4: ANOVA for financial performance

ANOVA ^a					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	12402.404	2	6201.202	101.450	.000 ^b
Residual	916.889	15	61.126		
Total	13319.293	17			

a. Dependent Variable: Performance of Revenue Collection

b. Predictors: (Constant), Level of Compliance to Budget Estimates in FY 2014-2015, Level of Compliance to Budget Estimates in FY 2013 -2014

Source: Research data (2015)

The study designed hypotheses to test the model based on 0.05 level of significance.

These were;

$H_0: \beta_1 = \beta_2 = 0$ (i.e. the coefficient of level of compliance to budget estimates in FY 2014-2015 and level of compliance to budget estimates in FY 2013 -2014 are all zero)

H_a : At least one $\beta_i \neq 0$

H_0 is accepted if p-value $>.05$ (at 5% level of significance)

H_0 is reject if p-value $\leq .05$ (at 5% level of significance) H_a : and is accepted

From Table 6, it can observed that p-value = .000. Since p-value $<.001 < .05$ (F=101.450, P-value=.000), then we reject then null hypothesis and accepted the alternative hypothesis. So, at the 5% significance level (i.e $\alpha=0.05$, level of significance), there exists enough evidence to conclude that at least one of the predictors; level of compliance to budget estimates in FY 2014-2015 and level of

compliance to budget estimates in FY 2013 -2014, is useful in predicting the Performance of Revenue Collection. Therefore the model is useful.

Table 5: Coefficients for Study Model

	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	58.609	18.183		3.223	.006
Budget Compliance FY 2013 -2014	-1.045	.073	-.973	-14.239	.000
Budget Compliance FY 2014-2015	.431	.193	.153	2.239	.041

a. Dependent Variable: Performance of Revenue Collection
Source: Research data

From the results in Table 5, the level of compliance to budget estimates in FY 2013/2013 is .000 and level of compliance to budget estimates in FY 2014/2015 is .041. Since the p value for each predictor variable was less than 0.05, there is an indication that there was a significant relationship between each independent variable and the dependent variable. This is to say that all the predictor variable; compliance to budget estimates in FY 2013/2013 and level of compliance to budget estimates in FY 2014/2015 could be used to measure (estimate) the dependent variable, performance of revenue collection. The coefficient for level of compliance to budget estimates in FY 2013/2013 is -1.045, and level of compliance to budget estimates in FY 2014/2015 is .431.

The model was therefore fitted as; $Y = 58.609 - 1.045X_1 + .431X_2$

It should also be noted that level of compliance to budget estimates in FY 2014/2015 variable is positive and β -values is positive. This was an indication that level of compliance to budget estimates in FY 2014/2015 is directly proportional to revenue collection performance at Nairobi City County, in which case an increase in level of

compliance to budget estimates in FY 2014/2015 caused an increase (improvement) in revenue collection performance. However, level of compliance to budget estimates in FY 2013/2014 is negative and β -values is negative. This was an indication that level of compliance to budget estimates in FY 2013/2014 is indirectly proportional to revenue collection performance at Nairobi City County. So as an increase in compliance to budget estimates in FY 2013/2014 lead to decrease in revenue collection performance at Nairobi City County.

Table 6: Revenue Collection Performance Model Summary

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.965 ^a	.931	.922	7.81831

a. Predictors: (Constant), level of compliance to budget estimates in FY 2014-2015, level of compliance to budget estimates in FY 2013 -2014

Source: Research Data (2015)

Further, from table 6, the adjusted R^2 was 0.922, which means that 92.20% of change in revenue collection performance at Nairobi City County is explained by the independent variables; level of compliance to budget estimates in FY 2013/2014 and compliance to budget estimates in FY 2013/2014. This is shown in Table 6, which indicates that the coefficient of determination was .922, implying that a variation in level of compliance to budget estimates in FY 2013/2014 and compliance to budget estimates in FY 2013/2014 cause an increase of 92.20% of revenue collection performance.

4.5 Interpretation and Discussions

The adoption e-payment was found to considerably affect the revenue collection performance in Nairobi City County, which was in agreement to study by Gupta (2000) which found that a study by Ndunda *et al.* (2015) revealed that level of tax payment (compliance) affected optimal revenue collection. The study by Ndunda *et al.* (2015) established a marginal relationship between tax compliance and revenue collection, which was true in the present study. The findings in the current study which also agreed to those in Nyongesa (2014) which recommended for decentralized ICT based tax collection systems and offices in the sub-counties in adoption of differentiation strategies in revenue collection role. These two studies found that ISO certified companies improved their financial performance while the non-certified ones experienced substantial deterioration. There was consistency in the study findings and cited studies.

The study by Kinyanjui and Kahonge (2013) revealed that the use of e-payment by mobile phone based technology in mobile parking increase parking fees collection as that by Muema *et al.* (2014) indicated that Nairobi county and the parking industry were generally ready to adopt the mobile parking management system. The findings were confirmed by the present study, which showed considerable increase in revenue collection performance after introduction on e-payment system.

Also the Otieno *et al.* (2013) study found that there exists a relationship between Information Systems (IS) and both efficiency and effectiveness in revenue collection, there is a strong positive relationship between Internal Control Systems and revenue collection. In the case of the present study it was established that e-payment significantly increase the revenue collection performance, a confirmation of the

findings in the study by Otieno *et al.* (2013). Perlman (2001) study established that the use of third party vendors has allowed counties without large IT resources to implement an online ticket-paying system. This shows that small and moderately-sized cities can experience success through use of vendors and cooperative efforts of pooling resources.

The present study found that lack of e-payment system reduce the revenue collection performance as indicated by the level of budget compliance in FY 2013/2014. This agreed to the study by Kaburia (2004), which found out that lack of suitable e-Payment alternatives was a critical challenge to the growth of e-commerce in Kenya. An e-Payment model suitable for individuals in Kenya was proposed. The study also found that some departments were not recording viable results in revenue collection after adoption of e-payment. The findings agreed to the study by Rocheleau and Wu (2005), which found that there are some of challenging e-government applications involve allowing citizens and other customers to conduct financially related transactions electronically with governments on a 24-hour, 7-day a week basis. Generally, usage rates are low, demonstrating that there is a gap between the potential and reality of this form of e-government.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of findings, conclusions as well as the recommendations based on the findings. It further highlights the research gaps the researcher felt should be filled by further research as well the limitations of the study. The conclusions and recommendation were based on the study objective, which was to determine the effect of e-payment system on revenue collection by the Nairobi City County Government.

5.2 Summary of Findings

The objective of the study was to determine the effect of e-payment system on revenue collection by the Nairobi City County Government using; level of compliance to budget estimates in FY 2014-2015 and level of compliance to budget estimates in FY 2013/2104 as independent variables revenue collection performance as the dependent variable. The aim of the study was to establish whether the e-payment system would significantly increase revenue collection by the Nairobi City County Government through assessment of the level of compliance to budget estimates in FY 2014-2015 and level of compliance to budget estimates in FY 2013/2104 (measured using compliance of the budget).

The study found that the e-payment system would significantly influenced revenue collection performance by the Nairobi City County Government positively, such that increased adoption of e-payment system increases revenue collection performance. However, reduced adoption of e-payment system negatively influenced revenue

collection performance, where it reduced the compliance to budget hence poor financial performance of Nairobi City County Government.

There was a there was a significant relationship between level of compliance to budget estimates in FY 2013/2014 (p-value= .000) and level of compliance to budget estimates in FY 2014/2015 (p-value = .041) and revenue collection performance in Nairobi City County, since the p value for each predictor variable was less than 0.05. It was found that 92.20% of variation in revenue collection performance in Nairobi City County is explained by the level of compliance to budget estimates in FY 2013/2013 and level of compliance to budget estimates in FY 2014/2015. The study there found that revenue collection performance in Nairobi City County was positively associated to adoption of e-payment system.

5.3 Conclusions

Based on the study findings, this study revealed that the revenue collection performance in Nairobi City County increased considerably after introduction of e-payment system in revenue collection. The adoption of e-payment makes the Nairobi City County ensure higher compliance to budget estimated, meaning that adoption of e-payment system has pronounced revenue collection performance in Nairobi City County effect than non e-payment system. The study concludes that the adoption e-payment system positively influences the revenue collection performance in Nairobi City County

It was established that the period after adoption e-payment system affected the revenue collection performance in Nairobi City County. The revenue collection performance in Nairobi City County government institutions ensure that they enhance the continuous improvements during the period after adoption e-payment system,

which enhances the revenue collection performance in Nairobi City County as the period increase, the revenue collection performance becomes better. The study concludes that the period before adoption e-payment system influences the revenue collection performance in Nairobi City County government negatively, decreasing the revenue collection performance of the government.

There was a there was a significant relationship between level of compliance to budget estimates in before adoption e-payment (p-value= .000) and level of compliance to budget estimates after adoption of e-payment (p-value = .041) and revenue collection performance in Nairobi City County government, since the p value for each predictor variable was less than 0.05. An increase in adoption of e-payment leads to an increase in revenue collection performance in Nairobi City County government and vice versa. It was found that 92.20% of variation in revenue collection performance in Nairobi City County government is explained by the adoption of e-payment and failure to adopt e-payment. So the two factors; adoption of e-payment and/or failure of adoption of e-payment are predictors of revenue collection performance in Nairobi City County government.

5.4 Limitations of the Study

Various limitations challenged the study. For instance it was very difficult to obtain the some study data due to reluctance and uncooperativeness of the respondents, who felt that they were being disturb and would even fail to explain some technical terms. The researcher and research assistant struggled to get meaning of these data and values. However the researcher explained that the data that was to be obtained was for academic purpose only. The respondents might have given inaccurate and incorrect

information but the researcher first conducted meeting with the respondents to explain that the purpose of the study was purely academic.

Further, the study used the revenue collection instead of the unit vote head to obtain the desired, which limited the precision of the data, considering that Government of Nairobi City County has many vote heads that would give more data to arrive at better results.

The study also faced the challenge of limited time for data collection and other processes. To overcome this challenge, the study the researcher employed the services of a researcher assistant to assist in collecting data and analysis.

The study was further constrained by limited financial. The researcher then sought for a loan from his SACCO to obtain more fiancé which supplement the study budget. Lastly, the study was limited to the honesty and of respondent.

Lastly, the study model was also limited as it showed that 92.20% variation of revenue collection performance in Nairobi City County government was cause by change in adoption in e-payment. This means that there are other factors that account for the remaining 7.80%.

5.5 Recommendations

5.5.1 Policy Recommendations

The study recommends that the Government of Nairobi City County should review its revenue collection standards and audit policies to ensure that all its wards, departments and other related units are compelled by regulations to adopt e-payment and other ensure management of revenue collection system to lead to assurance total compliance to the budgets There should be structured e-payment adoption standards

and structure in Nairobi City County. The free hand operated by the City county departments in revenue collection should be tightened to ensure that all sections departments and other units have adopted e-payments systems. There should be clear regulation and policies governing adoption of e-payments systems. The Government of Nairobi City County should increase their public awareness campaigns to ensure that the consumers get the right information as pertains to e-payment revenue collection.

5.5.2 Recommendations for further study

The study embarked on collecting data from revenue source heads sections in Nairobi City County government. However, it isolated the specific basic revenue source, which limited the applicability of the results to Nairobi only. So other studies should be done to assess the affects specific basic revenue source of Nairobi City County government.

The study found that it was very difficult to obtain the some study data due to reluctance and uncooperativeness of the respondents, who felt that they were being disturb and would even fail to explain some technical terms. It therefore recommends that another study should be conducted on the same variables by a researcher from within Nairobi City County government to avoid the limitations of inaccurate and incorrect information.

The study also faced the challenge of limited time for data collection and other processes. To overcome this challenge, another study should be conducted with the authority of Nairobi City County government and county staff compelled to assist in collecting data and analysis.

The study was further constrained by limited financial. The study therefore recommends that another study should be conducted by the county government itself and the study should be fully sponsored to avoid limitation of financial resources.

The found that 92.20% variation of revenue collection performance in Nairobi City County government was cause by change in adoption in e-payment. This means that there are other factors that account for the remaining 7.80%. From these findings it clear that there are other which affect the revenue collection performance in Nairobi City County government, raising concern of which factors are. The present study therefore recommends that studies should be conducted to assess the other factors contributing the remaining 7.80%.

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APPENDICES

APPENDIX I: WORK PLAN

The project will be undertaken between July 2015 and November 2015. The entire schedule for the project will be as follows: -

ACTIVITY	July 2015					
Produce Proposal						
Submission of Proposal Defense						
Tools development and Data Collection						
Data processing and analysis						
Report Writing						
Final Defense						
Correction and Final Submission						

Source (Researcher, 2015)

APPENDIX II: BUDGET

No.	CORE ACTIVITIES	Item/ Participants	Total (Kshs)
1.	Consolidation of Literature	Internet usage Library search Travelling Expense	2,000.00 4,000.00 3,000.00
2.	Designing and development	Typing and photocopying of research instruments	10,000.00
3.	Consultancy	Professionals	40,000.00
4.	Research Induction and Training	Transport for researcher and two research assistants	10,000.00
5.	Pilot Testing, Finalizing of research instruments	5 questionnaires	5,000.00
6.	Main field data collection (2 months)	Travel, accommodation and subsistence Researcher	12,000.00
7.	Data processing and report writing	One research assistants	10,000.00
8.	Contingency and institutional costs		7,000.00
	Total		110,000.00

Source (Researcher, 2015)