FACTORS AFFECTING THE UTILIZATION OF INFORMATION SYSTEMS IN REVENUE MANAGEMENT IN COUNTY GOVERNMENTS: A SURVEY OF NAKURU COUNTY GOVERNMENT

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DECLARATION AND APPROVAL

Declaration

This research project is my original work and has not been presented for academic award in any other University for the purpose of examination.

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Approval

This research project has been submitted for examination with our approval as university supervisors.

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DEDICATION

I dedicate this study to my family for their support during the period of development of the research project.

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The preparation of a project calls for cooperative efforts from several key individuals and institutions. However, while it might be impractical to mention all of them, some minimum crediting is inevitable.

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I would also wish to acknowledge the encouragement by my classmates.

ABSTRACT

Audit reports by the office of the controller of budget for three consecutive years from 2013 – 2015 revealed gross financial mismanagement and a fall in revenue collection even after County Governments have put in place the Integrated Financial Management Systems (IFMIS) and e-pay systems in accordance with the requirements of the Public Finance Management Act 2012. It has been established that over 50% of county revenues were collected using the manual receipt system. As a result, there were revenue leaks which hinder the county from achieving its revenue targets. Nakuru County has been motioned in this category. Thus the level of utilization of information systems in revenue management was questionable. The main objective of the study was to assess the factors affecting the utilization information systems in revenue management in county governments, a survey of Nakuru County Government. Specific objectives of the study were to establish the effects of user perceptions, ICT infrastructure, staff technical capacity and staff resistance to change on utilization of information systems in revenue management. This study adopted descriptive research design and it was carried out at the County Government of Nakuru. The target population for this study comprised of 351 staff involved in Revenue Management in the County Government of Nakuru. These included sub county administrators, ICT staff, revenue supervisors, revenue collectors and business licensing officers. The study used stratified random sampling technique to select respondents and self-administered questionnaires were distributed among sampled staffusing the drop and pick later method.Validity test were computed using content validity index while reliability of instruments was ensured by piloting the tool among selected staff of Nakuru County. Pilot questionnaires were then analyzed using Cronbach's reliability coefficient – The overall reliability coefficient obtained was 0.78.The data obtained werethen analyzed using descriptive statistics frequencies and percentagesas well asChi Square, Person Correlation and Multiple Regression analysis to assess therelationship between the factors and utilization of MIS in revenue management. The study found out that there was a statistically significant correlation between the utilization of Management Information Systems in Revenue Management and user perceptions ($r = 0.537$, $p < 0.01$), ICT infrastructure ($r = 0.653$, $p < 0.01$), staff technical capacity ($r = 0.621$, $p < 0.01$), and resistance to change ($r = 0.486$, $p < 0.01$). The study therefore concluded that user perceptions, ICT infrastructure, staff technical capacity and resistance to change affected the utilization of management information systems in revenue management in the county government of Nakuru. It's recommended that there is a need for follow up research to see what other countries have done to improve on MIS adoption.

***Key Words**: Revenue Management, Utilization, Information system, Infrastructure, User Perception, Capacity, Resistance to Change*

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ABBREVIATIONS AND ACRONYMS

CoK - Constitution of Kenya

CRA - Commission for Revenue Allocation

CRF - County Revenue Fund

EIS - Executive Information Systems

HMRC -Her MajestyRevenue and Customs

ICPAK – Institute of Certified Public Accountants of Kenya

ICT – Information Communication Technology

IFMIS - Integrated Finance Management Information System

IMF – International Monetary Fund

IRS - Internal Revenue Service

IS - Information System

KRA - Kenya Revenue Authority

LAIFOMS - Local Authority Financial and Operations Management System

LAN – Local Area Network

MIS - Management Information System

OCOB – Office of Controller of Budget

PBC - Perceived Behavioral Control

PEOU - Perceived ease-of-use

PFM - Public Finance Management

PU - Perceived usefulness

ROK – Republic of Kenya

SA – South Africa

SARS - South African Revenue Service

SPSS – Statistical Package for Social Sciences

TAM - Technology Acceptance Model

TAM - Technology Acceptance Model

TPB - Theory of Planned Behavior

UK – United Kingdom

USA – United States of America

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Public revenue collection is an integral component of fiscal policy and administration. It is the main instrument through which government funding is ensured. With growing donor fatigue and dwindling domestic revenue reserves in most developing countries, the need to strengthen national revenue collection systems has become particularly imperative. Yet, devising efficient means of collecting tax revenue remains a daunting challenge, especially in developing countries. Tax revenue collection should comply with best practices of equity, ability to pay, economic efficiency, convenience and certainty (Visser& Erasmus, 2005).

In most countries, public revenues are deposited into the Exchequer Account of the Consolidated Revenue Fund which serves as the national purse. The public revenue are broadly conceptualized within the tax reform initiatives of the 1990s that were promoted by the IMF and World Bank. These reform measures sought to revamp and strengthen revenue administration, enhance voluntary compliance, expand the tax base and address corruption-induced revenue leakage. In most countries, the responsibility of National revenue collection has since the 1990s been hived off to semi-autonomous revenue authorities which exercise direct control over the import, export, manufacture, movement, storage or use of certain goods (Fjeldstad& Moore, 2008). In the UK, the Her MajestyRevenue and Customs (HMRC), in the USA, there is the Internal Revenue Service (IRS) created through the Internal Revenue Service Restructuring and Reform Act of 1998. In SA, the South African Revenue Service (SARS) was established in 2002 under Section 195 of the SA Constitution. In Kenya national revenue is collected through the Kenya Revenue Authority (KRA).

The recent move to adopt decentralization has led a paradigm shift on governance, revenue collection and management. Kenya through the 2010 constitution adopted the devolution system of decentralization. Devolution entails the transfer from the central government to local governments the power to plan, mobilize resources and implement

development programs (Prud'homme, 2003). The demand for devolution in Kenya arose from persisting perceptions and actual evidence of inequalities across Kenyan regions, which some people linked to the failure of over centralized budgeting and governance (Nyanjom, 2011)

In the devolved system of governance, Revenue is shared by the commission for revenue allocation (CRA) between the central government and the county governments. CRA provides that, 34% of the total revenue be allocated to the county government, 65.5% to the national government and 0.5% be allocated as equalization fund to the deeply marginalized regions. These figures are to be calculated based on the latest audited government accounts (CRA, 2013). The county revenue allocation is then budgeted and appropriated by the county government based on the principles set out in the Public Finance Management (PFM) Act of 2012. County governments are required to raise revenues to bridge gaps between the county budgets and the equitable share from the national government. Guidelines on the revenue collection and allocation are based on the county finance bills.

Formerly county revenues were collected by the Local Authorities however with the new constitution dispensation the Local Authorities were amalgamated into the new county governments. As a result majority of the county governments inherited the local authority revenue collection structures that were porous and inefficient in revenue collection. To install sanity, Article 136(2), of the PFM Act 2012 required counties to freeze former Local Authorities bank accounts as from 1st March 2013 and the revenues banked in County Revenue collection accounts and periodically swept to the County Revenue Fund (CRF) as per PFM Act, 2012 requirement. Further, all counties were required to install the integrated Finance Management Information System in revenue collection, tracking of expenditure and budget monitoring (ROK, 2012).

An audit report by the office of the controller of budget on the fourth quarter of the financial year 2012/2013 revealed that during the period under review the county used LAIFOMS (Local Authority Financial and Operations Management System) to manage

the finances allocated to the county, as opposed to the IFMIS and G pay systems which were more advanced and efficient in revenue collection and tracking. The county revenues in the same period were significantly low at 66% of the target revenues which was attributable to the channels and modalities of payment of levies previously charged by defunct local authorities (ROK, 2014).

The local revenue collections compared to the annual targets has continued to underperform. The counties are requested to address this issue urgently to ensure that planned activities for each financial year are implemented as planned. Although the IFMIS system has been installed in all the counties during the period under review, its utilization has remained a big challenge, a problem attributed to unreliable connectivity and inadequate capacity of the users. The slow operationalization of the IFMIS system has negatively affected the efficient and effective tracking and reporting of expenditures by the OCOB (ROK, 2014).

County Government of Nakuru relies heavily on revenues from property rates which were identified as the major sources of local revenue in addition to Single Business Permits, user charges and fees such as parking fees among others (ICPAK, 2014). The county's budget according to the County Government of Nakuru Finance Act 2013 was approximately KSh10 billion out of whichKSh5.9 billion allocated to the county by the Commission on Revenue Allocation as equitable share of the national revenue, the balance of Kshs 4.1 billion would be raised through revenue collection. Further, out of the Kshs 5.9 billion from the National treasury Ksh4.2 billion would go to personnel emoluments leaving only Kshs 1.7 billion for development. Therefore efficiency in revenue collection remains one of the key determinants of development of infrastructure in the county.

Technology adoption was featured significantly in the Nakuru County Finance Bill (2013), among measures spelt out by the county to ensure all revenue is collected and remitted. Some of the measures include: making use of ICT for collection and management of revenue through online and real-time monitoring of cash flow in addition

to the automation of cash receipts. Secondly the county outlines measures for making entry of all accountable documents within the information system. In property revenue collection, the bill proposed the automation in the submission of building plans and management of property. Further the bill proposed for digitization of all county mutations to allow prompt management of property liable to property tax, and automation of parking, market, and barrier fee collection among others to enhance revenue collection and administration efficiency (ROK, 2013).

To date, automation in county revenue continues with remarkable efforts observed in the direct bank deposit of revenues for single business permits, property rates among others. However, CESS fees, parking fees, market fees, house rents, county parks and other fees which contribute over 50% of the county revenues continue to operate on manual receipt system and are collected on daily basis by revenue collection clerks (ROK, 2014). An audit report by the office of the controller of budget revealed that Nakuru County had put in place the Integrated Finance Management Information System (IFMIS) as per the requirements of the Public Finance Management (PFM) Act, 2012 however, the report cited limitations in the level of application of the system. The report further cited declining local revenue collections which was partly attributed to revenue leakages due to inadequate application of the IFMIS (ROK, 2014).

According to (Bird 2010; Martinez-Vázques& Smoke, 2010) in a decentralized governance system, a sound revenue system for local governments is an essential pre-condition for the success of fiscal decentralization. This is essential because, in addition to raising revenues, local revenue mobilization has the potential to foster political and administrative accountability by empowering communities (Shah, 1998). Information System (IS) is a management mechanism that helps people collect, store, organize, and use information. According to (Duff &Asad,1980), Management Information System (MIS) is a collection of people, procedures, a base of data, hardware and software that collects, processes, stores and communicates data for transaction processing at operational level and analyses information for Managerial decision making. Electronic revenue collection system has many benefits; nonetheless, the inherent weaknesses and

insecurity of the e-revenue collection system have thwarted the benefits (Lai, 2006). Worldwide, many studies found tax users' resistance to use e-revenue collection system remains a widespread problem (Hung *et al*., 2006). Acceptance of electronic taxpayer system is deemed a necessary condition for the success of the MIS in e-revenue collection management system. A decentralized, automated revenue collection system allows for increased and timely access to information that would otherwise take too much time and effort to generate from the available hard copy records (Sohne, 2003).

1.2 Statement of the Problem

Article 201 of the Constitution of Kenya (CoK) stipulates the need for openness, accountability and public participation in public finance, in addition to clarity in fiscal reporting. These are principles applied both in the county and national finances (ROK, 2010). Section 107 of the Public Finance Management (PFM) Act, 2012 requires the County Treasury to enforce fiscal responsibility principles in managing the county government's public finances. Audit reports by the office of the controller of budget in 2012, 2013 and 2014 revealed that the county's revenues fell significantly below the targets at 66%. Despite that, the county has already put in place the IFMIS and e-pay systems in accordance with the requirements of the PFM Act 2012, its level of utilization remains low. Over 50% of the county revenues are collected using the manual receipt system.

As a result, there are possiblerevenue leaks which hinder the county from achieving its revenue targets which has a long term effects on development. In addition, empirical evidence point out thatpoor infrastructure (ICPAK, 2014), willingness to accept change, staff technical capacity (ROK, 2014) can influencethe utilization of ICT in revenue collection. Similarly, theoretical evidence shows that perceived ease of use and perceived usefulness play key roles in utilization of new technologies (King, & He, 2006; Bagozzi&Warshaw, 1989). However, it is not clear whether these factors are responsible for the situation in the County Government of Nakuru, Kenya. The purpose of this study therefore was to investigate the factors affecting utilization of information systems in revenue management in the County Government of Nakuru.

1.3 Objectives of the Study

1.3.1 General Objective

The main objective of the study was to assess the factors affecting the utilization information systems in revenue management in county governments, a survey of Nakuru County Government.

1.3.2 SpecificObjectives

The study was guided by the following specific objectives;

i. To establish the effects of user perceptions on utilization of MIS in revenue management in Nakuru County Government, Kenya.
ii. To establish the effects of ICT infrastructure on the utilization of revenue MIS in revenue management in Nakuru County Government, Kenya.
iii. To assess the effects staff technical capacity on utilization of MIS in revenue management in Nakuru County Government, Kenya.
iv. To investigate how resistance to change affects utilization of MIS in revenue management in Nakuru County Government, Kenya.

1.4 Research Hypotheses

The following hypotheses were tested at significance level of alpha (α) equal to 0.01.

$H0_1$: User perceptionhas no significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya

$H0_2$: ICT infrastructure does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya.

$H0_3$: Staff technical capacity does not significantly affect utilization of MIS in revenue management in the County government of Nakuru, Kenya.

$H0_4$: Resistance to change does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya

1.5 Justification of the Study

County governments have been identified as the new frontiers for development in this country thus a lot of public funds are discharged through the county treasuries as well as revenues collected. The government has put in place information systems for managing county funds. However, revenue collection and management is primarily the role of county governments. Previously, revenue leaks have been cited in county revenue collections and managements despite the MIS in place to avert this. Therefore it was necessary to assess the factors that affect the utilization of MIS in revenue management in County Governments. The recommendations would be significant in enhancing governance in the county governments through prudent management of revenues.

1.6 Significance of the Study

The results from this study could be used by county government and officials in charge of revenue collection to change from traditional manual system and utilize the information management system to improve revenue collection hence better service delivery to citizens. The findings could also assist policy makers to draft the required policy documents related to e-revenue collection system to assist county governments and users get value for money and services which comes with the system. The study could also be of relevance to scholars as it would provide the reference base for e-revenue collection system for counties since county government structures are still new in Kenya and more scholars may want to understand the revenue collection issues for various counties in Kenya.

1.7 Scope of the Study

The study was conducted in Nakuru County Government from 16th may 2016 to 8th June 2016 in the Revenue collection department. It coveredthe entire 11 sub - counties in Nakuru County. It assessed the staff capacity, ICT infrastructure, staff perceptions and resistance to change and how they influence utilization of MIS.

1.8 Limitations and delimitation of the Study

Not much research has been done in the utilization of management information system in revenue collection in county governments since they are new establishments in Kenya. Therefore empirical studies used in the research were borrowed from other public institutions that have already implemented the MIS in their operations and revenue collection in Kenya and other economies. Also the researcher faced reluctance of employees in giving information in fear of losing jobs due to automation of revenue collection. To mitigate this, the researcher ensured that respondents are assured of confidentiality in handling of the research findings.

1.9 Operational Definition of Terms

ICT infrastructure -these are the basic facilities such as laptops,desktop computers, printers, servers used by employees in the county government.This study adopts the same meaning(Fares, 2007).

Information and Communication Technology (ICT) – these are technologies that provide access to information through telecommunications such as computers, the internet, broadcasting technologies (radio and television), and use of the telephone systemsby employees in the county government (Tapscott, 1996). This study adopts the same meaning.

Information System (IS) – this refers to a management mechanism that helps people collect, store, organize, and use informationin the county government (Kun, 2008). This study adopts the same meaning.

Management Information System (MIS) - it refers to a computerized information-processing system designed to support the activities in the county government(Rhodes, 2010).This study adopts the same meaning.

Resistance to change - refers to the employee foot-dragging and low inertia and petty sabotage in implementation of new systemsin the county government(Klarner et al, 2011). This study adopts the same meaning

Revenue Management - it refers to the process of collection, remitting, reporting and auditing ofrevenue in County Governments(Kun, 2008). This study adopts the same meaning.

Revenue - is the money received from taxation, fees, fines, inter-governmental grants or transfers, securities sales, mineral rights and resource rights, as well as any sales that are made inCounty Governments (Rhodes, 2010). This study adopts the same meaning.

Staff technical capacity -refers to the practical skills, knowledge and experience required to successfully utilize an information system inCounty Governments (Zwick, 2002).This study adopts the same meaning.

User Perceptions - is the organization, identification, and interpretation of sensory information in order to represent and understand the environment. In this study it referred to staff opinions and attitudes towards the use of MIS in Revenue Management, in County Governments (Van-Akkeren&Cavaye, 1999). This study adopts the same meaning.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of literature on use of Management Information System in revenue management in County Governments. The chapter begins by discussing the theories related to technology adoption, theoretical literature. The study then proceeds to discuss empirical review of the past studies on e-revenue collection using MIS and identifies the gaps in research. It then discusses the conceptual framework which the researcher will use to analyze the data.

2.2 Theoretical Review

This study was guided by two theories relating to new technology utilization: The Technology Adoption Model which explains the motivating factors behind adoption of new technology and the theory of planned behavior showing how human actions are guided.

2.2.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. Broadly, TAM theorizes that the intensity of an individual's intention to use a technology can be explained jointly by his or her perception about the technology's usefulness and attitude towards the technology use (Chau& Hu, 2001). The theory was developed by Davis (1989) from Theory of Reasoned Action. It is one of the most influential research models in studying the factors affecting the of MIS usage in revenue management (Fu, Chao &Farn, 2006).

The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (PU) and Perceived ease-of-use (PEOU) (Bagozzi&Warshaw, 1989). The model is shown on Figure 2.1.

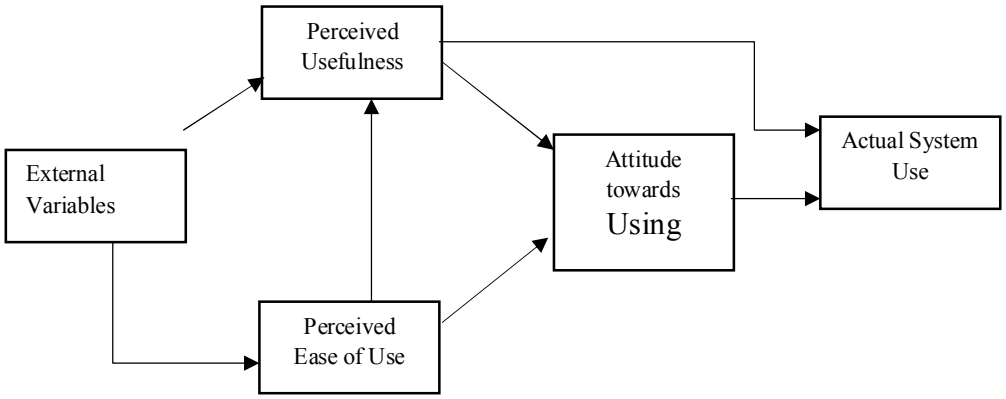

Figure 2.1: Technology Acceptance Model (TAM)
Source: Bagozzi and Warshaw (1989)

Venkatesh& Davis (2000) extended the model to include other factors categorized into two: social influence processes (subjective norm, voluntariness, and image) and cognitive instrumental processes (job relevance, output quality, result demonstrability, and perceived ease of use) as significant factors in influencing user acceptance. The extended model, referred to as TAM2, was tested using longitudinal data collected regarding four different systems at four organizations (N = 156), two involving voluntary usage and two involving mandatory usage. Model constructs were measured at three points in time at each organization: pre implementation, one month post implementation, and three months post implementation.

King and He (2006) in a statistical meta-analysis of the technology acceptance model (TAM) as applied in various fields analyzed 88 published studies that provided sufficient data to be credible. The results showed that TAM was a valid and robust model that has been widely used, but which potentially has wider applicability. The original TAM according to (Fu, et. al., 2006) was developed using the setting of MIS usage within organizational boundaries, where availability of technological resources, training, MIS experience, and the expertise of users were homogenous to some extent.

TAM would be used to guide in the conceptualization of the utilization of Revenue Collection Management Information System in County Government of Nakuru. As guided by the theory, utilization would be measured in terms of the actual use. On the other hand the contributing factors will be conceptualized in terms of social influence processes such as user perceptions and political situation in cognitive instrumental processes such as ICT infrastructure and county government structure.

2.2.2 Theory of Planned Behavior (TPB)

The theory of planned behavior (TPB) was developed by Ajzen in 1988. The theory proposes a model which can measure how human actions are guided. It predicts the occurrence of a particular behavior, provided that behavior is intentional. TPB is a development TPB extends from TRA by incorporating an additional construct, namely perceived behavioral control (PBC), to account for situations in which an individual lacks substantial control over the targeted behavior (Ajzen, 1991). According to TPB, an individual's behavior can be explained by his or her behavioral intention, which is jointly influenced by attitude, subjective norms, and perceived behavioral control as shown on Figure 2.2 (Chau& Hu, 2001).

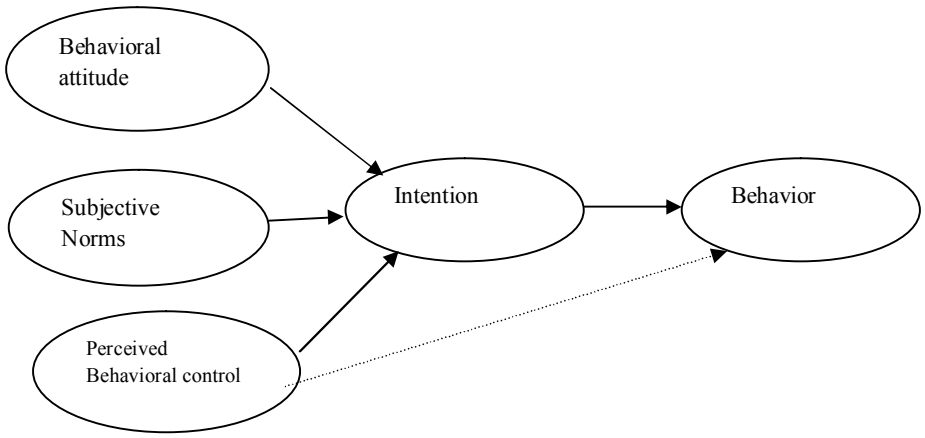

Figure 2.2: Theory of planned behavior (TPB).

Source: Ajzen (1991)

Background information on the use of MIS at County Government of Nakuru shows that the technology has already been put in place and has been partially utilized. The extent of

usage could however be attributed to the attitude of the users towards technology. This theory therefore helps to conceptualize users perceptions as a potential causative factor in the utilization of MIS in revenue management.

2.2.3 Concept of Electronic Revenue Services

E-revenue services is the application of information technology and other web based Management Information System in the provision of government tax services with an aim of minimizing the burden of centralized public administration and the business activities to its citizens in tax payments. Electronic tax or e-revenue collection management system on the other hand is a system for submitting tax documents to a revenue service electronically, often without the need to submit any paper documents. Electronic tax systems are an e-government application that is being utilized with increasing frequency all over the world. Such systems are particularly favorable for governments because they avoid many of the mistakes taxpayers make in manual paying of tax, and they help to prevent tax evasion by data matching. The data houses developed using electronic tax filings can allow government revenue inspectors to analyze declarations more thoroughly, and enable policy makers to develop fairer and more effectively (Kun, 2008).

2.2.4 Digitization of Government Procedures

The advent of the internet, digital connectivity, and use of e-commerce and e-business models in the private sector are pressuring county governments to rethink hierarchical and bureaucratic organizational models (Ndou, 2004).

Moreover, the increasing expectation of the citizens and the better service delivery of the private sectors are demanding the bureaucracy to be time responsive in government services dispensation to the public. As a result, the recent decades have experienced the paradigm shift in the role of government, where the government's role is redefined as to empower rather than serve customer, to shift from hierarchy to teamwork and participation, to be mission oriented and customer focused, and to focus on prevention rather than cure (Osborne &Gaebler 1992).

As early of 1980s, the need to reform the bureaucracy was highly discussed all-round the globe and as the result the governments of developed and developing countries faced the challenge of transformation and the need to modernize administrative practices and management systems (Tapscott 1996). In this regard, information communication and technology (ICT) is seen as a tool to support the work of governmental institutions and agencies with the objectives of delivering public services and information in a more convenient, citizen-centric and cost effective manner. In other words, ICT can be an effective tool to ensure increased accessibility, inclusivity and flexibility of government services in revenue collection through automated tax collection.

Government services have been regarded as synonymous with bureaucracy in both developing and industrialized countries (Manly, 2005). The tenets of Weberian bureaucracy include such factors as organized hierarchy, development of standardized and impersonal procedures, formal division of labor and responsibility, and emphasize efficiency in all procedures (Kun, 2008). All countries have bureaucratic state mechanisms; and while many commercial organizations are strongly inspired by the tenets of bureaucracy, their efficiency varies widely.

Whatever the level of efficiency of the bureaucracy, the availability of computers to people from all walks of life has brought them better and more convenient access to public services. Additionally, through the Internet and computer technology, governments can provide services in the original positive sense of Weberian bureaucracy. In other words, e-government can facilitate public service offerings in a truly standard, impersonal, efficient, and convenient manner for both service provider (the government) and service recipient (the citizens). In some cases a government agency can also be a service recipient of an e-government service. In economic terms, the ability of citizens to access government services anytime, anywhere helps to mitigate the transaction costs inherent in all types of government services (Kun, 2008).

Layne and Lee (2001) propose a four stage model for e-government maturity: Catalogue: Online presence, catalogue presentation, downloadable forms.Transaction: Services and

forms on-line, working database supporting online transactions. Vertical integration: Local systems linked to higher-level systems. Horizontal integration: Systems integrated across different functions, real one-stop shopping for citizens. Although the model is based on the e-government experiences in the US context, the authors assert that it is applicable to other countries' stages of growth.

For web-based information systems to remain useful, they must contain new, enhanced attributes. Belanger, *et al* (2006) argues that they are several success criteria for a web site depending on the variety of goals such as selling, informing and advertising. The authors further argue that web site success is audience specific and it should take account of diverse perspectives of users and owners. It should be noted that sometimes these perspectives might be even competing. For example, in electronic tax filing systems for government revenue collection, users are usually unenthusiastic to pay tax and the site owner (government) is eager to collect it.

According to Palmer (2002) electronic revenue systems can be evaluated in terms of usability, design and performance including download delay, navigability, site content, interactivity, responsiveness, user satisfaction, the likelihood of return to the website or online system and frequency of use. According to Harold (2011), Computer-generated returns, transmitted electronically, generally are easier to process than paper returns; since the information on the forms doesn't have to be keyed in, number by number, by staff into the Service's computers hence there is less chance of errors. Electronic transmittal is instantaneous, bypassing the frustrating vagaries of the postal system and the client receives confirmation that the return was received accurately (Harold, 2011).

2.2.5 Information and Service Quality

From information quality and tax payment service perspective, personalization, completeness, relevance, ease of understanding, and security quality dimensions are used to measure management information system quality (DeLone and McLean, 2003). While, based on Chang *et al*. (2005), information quality has been defined by the degree to which users are provided with quality information regarding their needs. In practices, the

e-revenue collection management system benefits taxpayers because tax payable to county government can be paid electronically on real time basis which saves taxpayers' time (Anna and Ng, 2010).

System quality on the other hand refers to the desired characteristics of electronic information system by using usability, availability, reliability, adaptability, and response time quality dimensions (DeLone and McLean, 2004). Although, utilization of e-revenue collection management system may seem to benefit taxpayers in many ways and also offer potential benefits to improve administrative commitments towards efficiency and quality of service delivery, the understanding and influencing citizens' acceptance of the electronic system is still critical. According to Ambali (2009), in line with the era of fast moving world, better services from respective governments or agencies to their citizens are highly needed. Therefore, creating a fast, reliable and safe service should be the main priorities of any governments in the world. Thus, adapting technology into the public service delivery systems is one of the ways to create such a fast reliable and safe service delivery.

User satisfaction is a dimension of measuring quality that applicable in all forms of services. This is critical element in the success of any government system either traditional or online mode of operations. Ambala (2009) suggested a need for improvement in the implementation of the online e-revenue collection management system to ensure that the system conform to the public e-filers' satisfaction and government targets in revenue mobilization. He also said that the overall level of the e-revenue collection management system usage among taxpayers is still low, despite many campaign activities by government to increase the level of e-revenue collection management system usage in government ,e –revenue services due to unsatisfied tax payers. In order to make sure e-revenue collection management system can fully satisfy users, MIS must be useful to users, easy to use and secure. According to Zaherawati*et al*. (2009), perception towards e-revenue collection management system is influenced by the way users understand the usefulness of the system.

2.2.6 Role of MIS in Decision Making

It is inherent to state that decision making is an integral part of any government business (The maniac, n.d, 2000). In order for decision to be made adequately, it is vital for there to be a good information system since decisions are based on information available.MIS used in revenue collection have programs are endowed with the capacity to give real-time updates of the county government transaction regarding revenue. By real-time, revenue officers in charge simply refer to immediate updates of occurrences in a system. These immediate updates help managers to take necessary actions as soon as is deemed appropriate especially during the discovery and management of crises. This is important for county governments in the modern-day generation where any slight lapse in decision making can lead to very huge losses (Allen, *et al*., 2010).

On another level, a good number of MIS play the role of record keeping or institutionalization of government data bases that can easily keep confidential or invaluable information. Decision making often calls for the reading of certain past work (Jahangir, 2005). This is where record-keeping and reporting comes in handy. On the flipside, databases normally function towards providing future places of information retrieval.

In contributing to the arguments regarding role of MIS in improving decision making, Rhodes (2010) also adds that: Management information systems in revenue collection also gives managers quick access to information. This can include interaction with other decision support systems, information inquiries, cross-referencing of external information and potential data mining techniques. MIS can also compare strategic goals with practical decisions, giving revenue managers a sense of how their decisions fit organizational strategy.

According toCapGemini(2010) the computerization of taxation services is one area in which all European countries score highly because all services pertaining revenue collection is available online for easy access by citizens. One aspect of collecting revenue on-line is making the process attractive to citizens by making all the relevant revenue

services online for easy access anywhere and everywhere. Automated revenue system helps to improve revenue mobilization. MIS for revenue collection is based on the electronic payment system through applications such as toll revenue collection, automatic fare collection, bus revenue system and parking system.

Additionally, by automating revenue collection, service providers have better audit trail since all transactions captured can be detailed by time, whom and where. This prevents revenue loss through abuses as all transactions are recorded electronically and reports generated.With e-government, information about the services offered by the government through different departments can be disseminated fast up to the grass root levels by use of online and real-time MIS. This is intended to avail and improve the delivery of government services to all citizens wherever and whenever needed (CAFRAD. 2005).

2.3 Empirical Literature Review

This section highlights previous studies conducted in relation to the current study. Further the section discusses the findings and highlights the gaps in research in relation to the current study.

2.3.1 User Perceptions on Utilization of MIS

Users' perceptions influence to a great extent the rate and the level of technology utilization. According to Van-Akkeren and Cavaye, (1999) the perceived usefulness and perceived ease of use influence the perception of the users while the perceptions predict attitudes toward the technology utilization. Then the attitude develops the intentions to use and the intentions cause actual system usage. The beliefs, attitude and intention to use come in place when a user is presented with a new technology. These influence the users" decision regarding how and when they will use it (Davis *et al,* 2002).

Technology acceptance is an individual's psychological state with regard to his or her voluntary or intended use of a particular technology (Gattiker, 1990). And external factors to impact a person's attitude toward a behavior indirectly by influencing his or her salient beliefs about the consequences of performing the behavior (Fu, et. al., 2006). The

technology adoption model which guides this study defines perception a key driver to adoption of the theory. The model identifies perceived ease of use and perceived benefits as key factors affecting utilization of MIS in revenue management. This implies that success in its utilization requires overcoming the user perception towards it.

Mehrtens*et al*. (2001) developed an internet adoption model comprising of three similar factors - perceived benefits, organizational readiness and external pressures. According to Mehrtens*et al*. (2001), perceived benefits are determined by efficiency, effectiveness and improved image in use of Internet. Organizational readiness for Internet adoption is personified in the SME owner and also determined by the adequacy of the infrastructure. And external pressure is primarily from customers, suppliers and employees.

Zwick (2002) posits that the effectiveness and success of ICT systems depends not only on the technology itself, but also on the ways in which the users are introduced to the concept. The support of employees in introduction of new innovations is highly dependent on the type of innovation as well as the employees' perception to the inventions to be introduced.

Leidner, Carlsson, Elam, &Corrales (1999) drew on survey responses from managers using Executive Information Systems (EIS) across organizations in Mexico, Sweden, and the United States. Their study examined whether cultural differences influence perceptions of the relationship between EIS use and decision-making outcomes. The study found significant differences, predicted by cultural factors, in the impact of EIS use on senior management decision-making. Hofstede (2000) investigated the specific attributes of organizations that influence ICT adoption speed. The findings established that cultural variables that is individualism and uncertainty avoidance might be used to predict the ease and speed of changes.

A study conducted by Nchunge, Sakwa&Mwangi (2012) to assess user's perception on ICT adoption for education support in schools, a comparison of public and private schools was done in Thika District, Kenya. The findings revealed that on average, the

respondents in public schools were not sure whether they preferred manual pedagogy skills as opposed to electronic modes of curricula delivery. The users in public schools were evasive on whether to adopt electronic mode of delivery or not. On the other hand, in the private schools, electronic mode of delivery was perceived to be more beneficial to schools as compared to manual mode. The high number of uncertainty and manual preference was associated with prolonged delay in acceptance and use of emerging technologies in class. The perceptions that ICT would deny students the physical attention further derailed its adoption in teaching. This study focused on schools whereas the current study focuses on the county government. However, both are perceived similar in that they were all public institutions.

2.3.2 ICT infrastructure on the utilization MIS

MIS is basically a data base that is anchored on efficient hardware and network infrastructure. However, appropriate infrastructure for ICT development, (i.e. internet, extranet, intranet and LAN networks) has been identified as one of the biggest challenges in the implementation of e-government services particularly in developing countries (Fares, 2007). Salmon (2004) argues that an e-government environment must provide government and citizens high degree of reliability and accessibility. Technological obstacles in government often occur in one of three basic components, namely hardware, software and bandwidth capacity. This strongly affects the process of e-revenue system adoption (Vencatachellum&Munusami, 2006). Also availability of stable power supply and power backups is a very important determiner for to implement MIS for provision of e-services. The county revenue collection is based far and wide in all corners of the county, therefore an efficient system must +provide good connectivity across the county. This may present a challenge especially in the rural areas of the county.

Bourn (2002), Dillon and Pelgrin (2002) and McClure (2000) in their studies agreed that governments' lack of technical infrastructure has been a significant barrier to the development of government organizations' capabilities to provide online services and transactions. Practically, Layne and Lee (2001) and Dillon and Pelgrin (2002) emphasize the importance of network capacity and communication infrastructure (infrastructure

layer) as an important foundation for integrating information systems across government organizations. IT should be in place before e-government services can be offered reliably and effectively to the public (McClure, 2000). Therefore, the key to success in an e-government strategy is to implement an adequate IT infrastructure that will support a users' experience of easy and reliable electronic access to government. For example, as discussed in earlier section, intranet and extranet should be maintained in public sector organization to provide reliable groundwork for required information systems and applications.

Snellen (2000) indicates that success of any management system lies with planned; acquisition of the right hardware, relevant software applications, structured ICT infrastructure, well trained users and integration of modules in a user friendly interface. Therefore, acquisition of management information systems requires allocation of enough resources by government to adopt it. Gardner (2000) on the other hand pointed out human resources, vendor and maintenance, culture, funding, education and training as key factors for management information use in developing countries. Therefore infrastructure was one on the inputs to successful MIS system in addition to the technical know-how of the staff.

Bonham *et al.,*(2001) pointed out that lack of adequate funding, limited and expensive Internet bandwidth, unstable power sources, lack of reliable ICT infrastructure and insufficient staff development affects government from implementing information communication systems to run online government services to the citizens. Implementation of management information systems requires both government and users to support its adoption in one way or another; its success cannot be realized without a commitment of county government management support. Further, security plays a significant role in enhancing utilization of MIS. Gefen, D. &Pavlou, P(2002) identified the most significant barriers for implementing e-government applications as computer security, privacy and confidentiality of the personal data. Revenue collection requires extensive security approaches to secure, process and protect the financial data.

In a study of 2015 government consumers conducted by Jupiter Research in New York in 2003, more than three-fourths are concerned about the security of their credit card information, and nearly two-thirds are worried about the privacy of personal information. McClure (2000) criticizes the weakness of information systems' security in public sector organisations. E-government is considered to only succeed when all its participants-including government agencies, private businesses and citizens-feel comfortable using electronic means to carry out private and sensitive transactions. As a result, investing in the best available privacy and security applications and tools is worthwhile, as a shortage of them could lead to failure of the entire e-government project. Gefen, D. &Pavlou, P (2002), in the study of online tax services, agree, and demonstrate the importance of trust in the public sector alleviating data privacy concerns and facilitating e-government diffusion. In addition, information management policy guidelines and standards must be reviewed periodically to ensure that they are adequate to the electronic services delivery world. The guidelines require that government web sites use privacy notices to ensure that citizens will know what personal information may be collected and how will be used.

2.3.3 Staff Technical capacity on utilization of MIS

Zwick (2002), posits that the effectiveness and success of ICT systems depends not only on the technology itself, but also on the ways in which the users are introduced to the concept. The support of employees in introduction of new innovations is highly dependent on the type of innovation as well as the employees' perception to the inventions to be introduced. According to IMF, (2010), the development of quality ICT human resources is a pre-requisite to the development of a viable ICT sector to integrate Revenue collection system. It ensures that ICT development, implementation and exploitation are an integral and sustainable component of development specifically for Kenyan government and more so the county government in Kenya.

Leidner, Carlsson, Elam, &Corrales (1999) drew on survey responses from managers using Executive Information Systems (EIS) across organizations in Mexico, Sweden, and the United States. Their study examined whether cultural differences influence perceptions of the relationship between EIS use and decision-making outcomes. The

study found significant differences, predicted by cultural factors, in the impact of EIS use on senior management decision-making. Hofstede (2000) investigated the specific attributes of organizations that influence ICT adoption speed. The findings established that cultural variables that is individualism and uncertainty avoidance might be used to predict the ease and speed of changes.

Otieno et al., (2013)conducted a study to establish the effect of information systems on revenue collection by local authorities in Homa Bay County, Kenya and found out thatdespite the council having essential ICT equipment for implementation of electronic services, its level of adoption was far much less implying that the human factor played a significant role. The lower levels of the quality of services offered by the council could be attributed to the low commitment that the council had on using Revenue Information System. It was also evident that the council did not base their decision making on the records provided by the information system. This therefore meant that most records provided by the information systems were formality since the government is advocating for the use of ICT in the public service provision. As a result of the poor commitment to harness the potential of ICT in revenue collection, the complaints made by the clients did not decline even after the council had begun to employ use of ICT. Lack of commitment of the technical staff therefore resulted led the council not to achieve the intended objectives on the benefits of information systems in revenue collection. This study was done before the proper institutionalization of the county governments although majority of the systems and staff who implemented these policies in the councils were later absorbed into the counties.

A study conducted in the Municipal Council of Nyeri (Maina, 2013)to assess the factors affecting revenue collection in local authorities in identified that government policies influenced the implementation of revenue collection. One of the key challenges related to the government policies was the integration of manual revenue collection systems with the automated LAIFORMS. Government regulations on the use of the automated systems affected the flexibility of the system greatly.

2.3.4 Resistance to change on utilization of MIS

Klarner et al (2011)states that, according to the traditional understanding, employees have to adapt to organizational change and learn new strategies to achieve redefined goals while being resilient to setbacks during change.Employees' adaptive behavior is driven by their emotions. Prior studies on employees' emotions during change often characterize emotions in terms of hedonic tone or pleasantness. They are classified as either positive emotions, such as joy and excitement, or negative emotions, such as fear and grief. In the context of organizational change, positive emotions include being confident about change and enhance trust, leading to commitment and emotional engagement, while negative emotions include feeling stressed or insecure about change, leading to mistrust and resistance.

In another study conducted in 2008, Jones et al (2008)investigated employees' subjective experience of organizational change and how perceptions of change differed across levels of the organization. Three broad categories of issues were identified: emotional and attitudinal issues, change process issues and outcome issues. All participants emphasized their positive attitudes toward the change, yet they also highlighted the problematic nature of achieving effective communication, conflict and negative attitudes to the change. There was a strong emphasis on planning challenges. The interviews highlighted the uncertainty associated with the change, but participants focused on both positive and negative outcomes.

Attitudes are structured along three dimensions, labeled as cognitive attitudes (beliefs), emotional attitudes (individual feelings), and intentional or conative attitudes (evaluations based on past or intentional behavior). Each dimension ranges from positive to negative, as Nelissen and van Selm. (2008). Logan et al (2007)considers that even when structural changes are desirable from a financial or operations perspective, negative employee reactions can be influential to the degree of success of the planned change. Social identity theory principles appear important to the success of change, as threats to self-esteem and social identity may be underlying factors in the unconstructive behavior of employees who experience structural organizational change.

In a study conducted in 2010, Mayer et al (2010) the authors aimed to examine how people-organization culture fit relates to employee affective commitment and intention to stay with an organization during the early stages of an organizational change. There are four basic patterns to be underlined. The first involves the fairly consistent evidence for positive relations, both within and across time, between ratings of perceived human relations and open systems culture with the criteria of commitment and intention to stay. Second, the strongest support for the fit hypotheses was obtained in analyses involving the rational goal and internal process components of culture. Therefore, it is possible that employees were particularly sensitive to the current culture and their preferences regarding these two components. Third, the strongest and most consistent relations with culture were obtained for the criterion of commitment. Although culture ratings were related to intention to stay in some analyses, the strength of the relations was generally weaker. It appears, therefore, that perceptions of culture relate more strongly to employees' desire to maintain a relationship with the organization than with their actual behavioral intentions. Finally, although not predicted, the authors found some evidence that culture congruence was associated with higher levels of commitment when the ratings of perceived and preferred culture were both high than when they were both low.

In addition, within a study conducted by Turner et al (2007)emphasized several insights to managers that could help improve change implementation efforts. Improving employee commitment to change initiatives can have a profound impact on the success of company efforts. Affective commitment to change influences important perceptions, namely, individual learning, improved performance, and implementation success. Normative commitment to change had some influence as well, but to a lesser degree than affective commitment to change.

2.4 Research Gaps

Studies on adoption of ICT in improving service delivery in public institutions show that, MIS have been adversely proposed in service delivery due to their ability to enhance efficiency, transparency and accountability in public service delivery. However its level of adoption remains low in many public institutions. Reasons cited include infrastructure,

perceptions, technical know-how, and organization structure. However, there are no comprehensive studies on the interaction between different variables cited. There is no model developed to explain the tenets of technology adoption in public institutions alone. In Kenya, although the use of ICT in revenue collection and management is a requirement under the new constitution and PFM Act, there are no studies to determine the extent of its adoption and the influence of the contributing factors. In Nakuru County, there are ICT systems in place but the level of adoption especially in revenue collection remains low. There is no single study to explain the low adoption. This study will therefore investigate and document the factors affecting the utilization of MIS in revenue management in the County Government of Nakuru.

2.5 Conceptual Framework

The conceptual model developed on Figure 2.3 shows the interaction between variables of the study. It links the dependent variables, independent variables and intervening variables. Further it shows the parameters to be used in measuring the variables such as ICT infrastructure, MIS utilization in Revenue management, Resistance to change, Political Situation, User perceptions and Staff technical capacity.

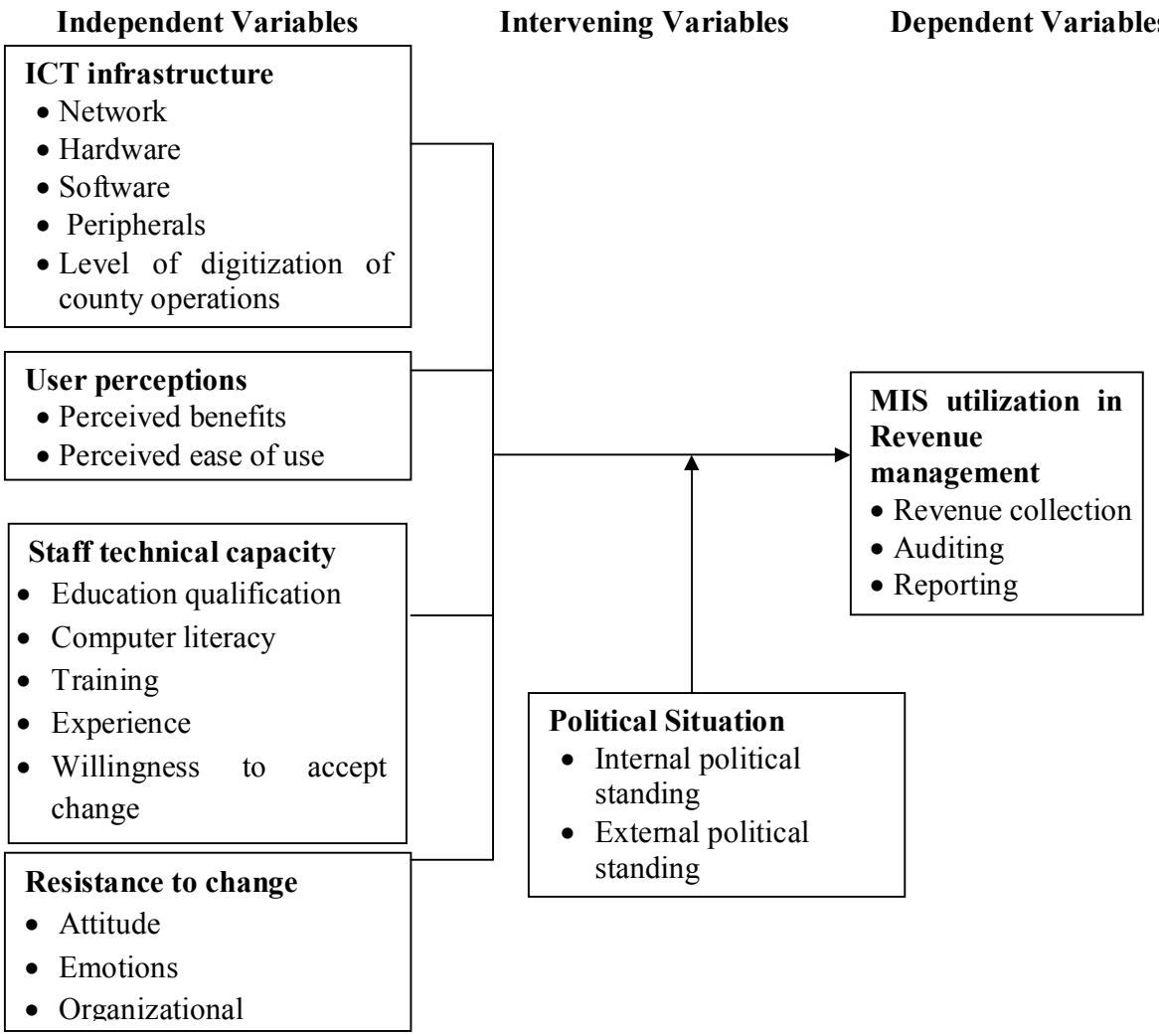

Figure 2.3: Conceptual Framework

Source: Author (2015)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides information on the research design, target population for the study, sampling design and sample size, tools for data collection, and procedures for data analysis. It discusses the methodology used in conducting the research.

3.2 Research Design

This study adopted descriptive research design. This design involves observing and describing behavior of subjects without influencing them in any way. The design gathers that data describes the existing conditions, identifying the standards against which existing conditions can be compared and determining the relationship that exists between specific events (Orodho, 2005). This study was designed to assess the factors affecting utilization of MIS in revenue management without manipulating variables hence the design was appropriate. It involved collection of data about the utilizations of MIS in revenue collection, the contributing factors and classification of data, analysis, comparison and interpretation of data, guided by theories, so as to meet the objectives of the study. This according to (Kombo& Tromp 2006) is best implemented using a descriptive research.

3.3 The Study Area

The study was carried out at the Nakuru County is one of the 47 counties of the Republic of Kenya provided in the Constitution of Kenya 2010. In two audit reports by the office of the Auditor General, County Government of Nakuru has been found to have declining revenue collected majorly because of non-compliance and revenue leaks in the manual revenue collection system. Similarly, the county has already implemented the FMIS in accordance with the requirements of the PFM Act but the level of utilization has been blamed for the challenges. This made County Government of Nakuru an appropriate location for assessment of the factors affecting utilization of MIS in Revenue collection (ROK, 2014; ROK, 2013b).

3.4 Study Population

The target population for this study was made up of all the staff involved in revenue collection and Management in Nakuru County Government. In total, the county employs 351 in offices directly or indirectly dealing with revenue collection and management. These include sub county administrators, ICT staff, revenue supervisors, revenue collectors and business licensing officers. The study target population therefore comprised of the 351 staff involved directly in revenue collection and management with or without the MIS. Distribution of the target population is shown on Table 3.1.

Table 3.1

Distribution of Target Population.

Staff category	**Population**	**Percentage**
Sub-County Administrators	11	3.13
ICT Staff	36	10.27
Revenue Supervisors	32	9.12
Revenue Collectors	254	72.37
Business Licensing Officers	18	5.14
Total	**351**	**100.00**

Source: Nakuru County Government (2015)

3.5 Sampling Design and sample size

The study used stratified random sampling technique to select staff from each department to category to participate. This implies that random sampling was conducted among staff in each category. The population was divided into five strata: Sub-County Administrators, ICT staff, Revenue supervisors, Revenue collectors and Business licensing officers from which samples were drawn. According to Graveter&Forzzano(2003), stratified random sampling has a higher statistical precision

compared to simple random sampling. This is because the variability within the subgroups is lower compared to the variations when dealing with the entire population. Because this technique has high statistical precision, it also means that it requires a small sample size which can save a lot of time, money and effort of the researchers.

According to (Mugenda, &Mugenda, 2003) in a survey research a sample of 10 – 30% is sufficient to provide statistical inferences about the population. The study was guided by the formula by Nassiuma (2000) in the determination of an appropriate sample size as shown below:

$$\mathrm{n} = \frac{\mathrm{Ncv}^2}{\mathrm{cv}^2 + (\mathrm{N}-1)\mathrm{e}^2}$$

Where n= represents appropriate sample size, N is the Target Population while $C_v$is the Coefficient of variation in which this study took is between 21% to 30%, and e is the error margin in which the current study was done at 0.05.

$$\mathrm{n} = \frac{351 * 0.5^2}{0.5^2 + (351-1)0.05^2} = 78$$

Therefore the sample size will comprise of 78. The sample distribution will be obtained using the stratified random sampling technique as follows:

$$n_i = (\frac{n}{N})N_i$$

Where:

$n_{i=}$Sample of strata i

$N_{i=}$Population of Strata i

The sample was proportionately distributed in the five strata as shown on Table 3.2.

Table 3.2

Sample Distribution

Staff category	Population	SampleSize
Sub-County Administrators	11	3
ICT Staff	36	8
Revenue Supervisors	32	7
Revenue Collectors	254	56
Business Licensing Officers	18	4
Total	**351**	**78**

3.6 Data Collection Instruments

In order to assessthe factors affecting utilization of MIS in revenue management in County Government of Nakuru, self-administered questionnaires were distributed among sampled staff in the five stratums. Questionnaires allow collection of data from a large number of subjects and provide for investigation with an ease of accumulation of data (Graveter&Forzano, 2003). One set of a structured questionnaire was administered to all the sampled staff as the main data collection instrument. The questionnaires had both open and close-ended questions. The close-ended questions provided more structured responses to facilitate tangible recommendations. The open ended questions provided additional information that may not be captured in the close ended questions.

3.7 Validity and Reliability of Instrument

3.7.1 Validity

Adams, Jackson, & Marshall (2007) defines validity as the strength of conclusions and inferences of a research, which is dependent on the degree of accuracy in measuring what is intended in the research. Orodho (2005) defines validity as accuracy or truthfulness of a measurement in terms of the likelihood that research questions were misunderstood or misinterpreted and on whether the research instruments provides adequate coverage of research objectives.

To ensure validity in this study, an item analysis was done to see whether the objectives and items in the instruments measure actually what the study intended to do. Validity test were computed using content validity index (CVI) basing on four (4) point scale of relevant, quite relevant, somewhat relevant, and not relevant. The proportions of relevant and quite relevant werecomputed from three experts. The proportions above 0.5 indicated that the questions were relevant to the study variables.

3.7.2 Reliability

According to Mugenda and Mugenda (2003), a research instrument is termed as reliable if it yields consistent results after repeated trials. Reliability of the questionnaire was achieved by administering pilot questionnaires selected staff of Nakuru County. Selection

was done carefully not to include staff whowere to participate in the actual study. Pilot questionnaires were then analyzed using Cronbach's reliability coefficient in the statistical package for social scientists (SPSS). The overall reliability coefficient obtained was 0.78. The judgment on reliability of instruments was informed by Fraenkel&Wallen (2000) who state that an alpha value of 0.7 and above is considered suitable to make group inferences that are accurate enough. Thus the tools were found to the be fit for the study.

3.8 Data Collection Methods

Before conducting this research authorization letter was obtained from the School of Business and Economics, Kabarak University. The researcher then visitedtheNakuru County Revenue Office for request for authorization to enable researcher administer the questionnaires. The authority letter clearly indicated research area, purpose of research, and expected end date. The questionnaires were then administered using the drop and pick later method. Staff issued with questionnaires weregiven five days to complete before they were collected.

3.9 Data Analysis

Data analysis involved cleaning, sorting, coding and entry of raw data into statistical software for the purpose of analysis and interpretation by use of statistical package for social science (SPSS). Descriptive statistics that is frequency distribution, percentages, were used to analyze the responses on individual items in the questionnaire. These findings were then presented using graphs and tables. Chi-square analysis, Pearson correlation analysis andMultiple Regression analysis were used to assess the relationship between the factors and utilization of MIS in revenue management and to make statistical inferences.

The regression analysis was based on the model below:

$$Y = \alpha_0 + \beta_i X_i + \beta_{ii} X_{ii} + \beta_{iii} X_{iii} + \beta_{iv} X_{iv} + e$$

Where: Y = Utilization of MIS in revenue management

$\beta_i, \beta_{ii}, \beta_{iii}, \beta_{iv}$ = Coefficients of the independent variables

X_i = User perceptions

X_{ii} = ICT Infrastructure

X_{iii} = Staff Technical Capacity

X_{iv} = Resistance to change

α_0 = Constant

e = Error term

3.10 Ethical Issues

The study ensured ethics in the entire process by ensuring the following: Respondents were assured that the given information would solely be used for the purpose of achieving the research objective. Any personal information meant for research purposes was kept strictly confidential. Respondents' rights to decline to fill the questionnaire were also respected. The researcher also sought permission from the relevant authorities before embarking on the research.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

The study sought to assess the factors affecting the utilization of management information systems in revenue management at the county government of Nakuru by seeking opinions from the staff involved in revenue collection and management at the county. This chapter presents the results of the study and the analysis of findings. Further, the findings are discussed.

4.1.1 Response Rate

The study issued a total of 78 questionnaires to staff of the county government. Of the total questionnaires 74 were successfully filled and returned, thus the return rate for the study was 93.6%. This was achieved through continuous efforts by the researcher to follow with the selected respondents to ensure that they filled and returned the questionnaires.

4.2 General Information of Respondents

The study sought some general information about the respondents which included: their gender, age, job designation in the County and the highest education qualification. Findings on these parameters are discussed in the following sections.

4.2.1 Gender of the respondents

The gender of respondents was the first parameter to be determined in this study. Gender was categorized into two as either male or female, the finding were then presented on

Figure 4.1.

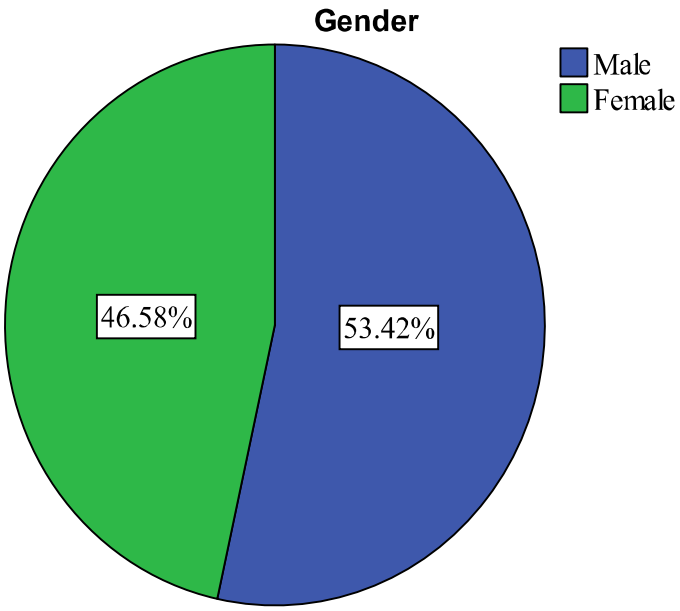

Figure 4.1: Gender of the Respondents

The findings revealed that the gender of staff in revenue collection and management in the county government of Nakuru was mainly male forming 53.42% while female gender formed 46.58%. This shows that male gender had a higher proportion although none of the genders was dominant based on the constitutional definition of gender equality which requires that no one gender forms more than two thirds of the population in any public institution in Kenya.

4.2.2 Age Distribution

The age distribution of county revenue management staff who took part in the study is presented on Table 4.

Table 4.1

Age Distribution of respondents

			Age				
			18 - 30 years	**31 - 40 years**	**41 - 50 years**	**51 - 60 years**	Total
Gender	Male	Count	17	4	6	12	39
		% within Gender	43.6%	10.3%	15.4%	30.8%	100.0%
	Female	Count	9	13	5	7	34
		% within Gender	26.5%	38.2%	14.7%	20.6%	100.0%
Total		Count	26	17	11	19	73
		% within Gender	35.6%	23.3%	15.1%	26.0%	100.0%

The age distribution presented on Table 4.1 indicates that 35.6% of the staff charged with revenue collection and management was aged between 18 – 30 years while 23.3% were aged between 31 – 40 years. In addition, 15.1% were aged 41 – 50 years while 26.0% were aged between 51-60 years. This implies that majority 58.9% of the county staff were aged below 40 years and 41.1% aged above 40 years. A study by Czaja et al., (2006) indicated that the older adults were less likely than younger adults to use technology in general, computers, and the World Wide Web therefore in the case of the County Government of Nakuru, the higher population of the young age of staff implies

that it would have been easier for the County to embrace technology in revenue management.

4.2.3 Designation of Staff in Revenue Management

The study also determined the designation of staff by analyzing their positions in the county government revenue management. The findings are presented in Figure 4.2.

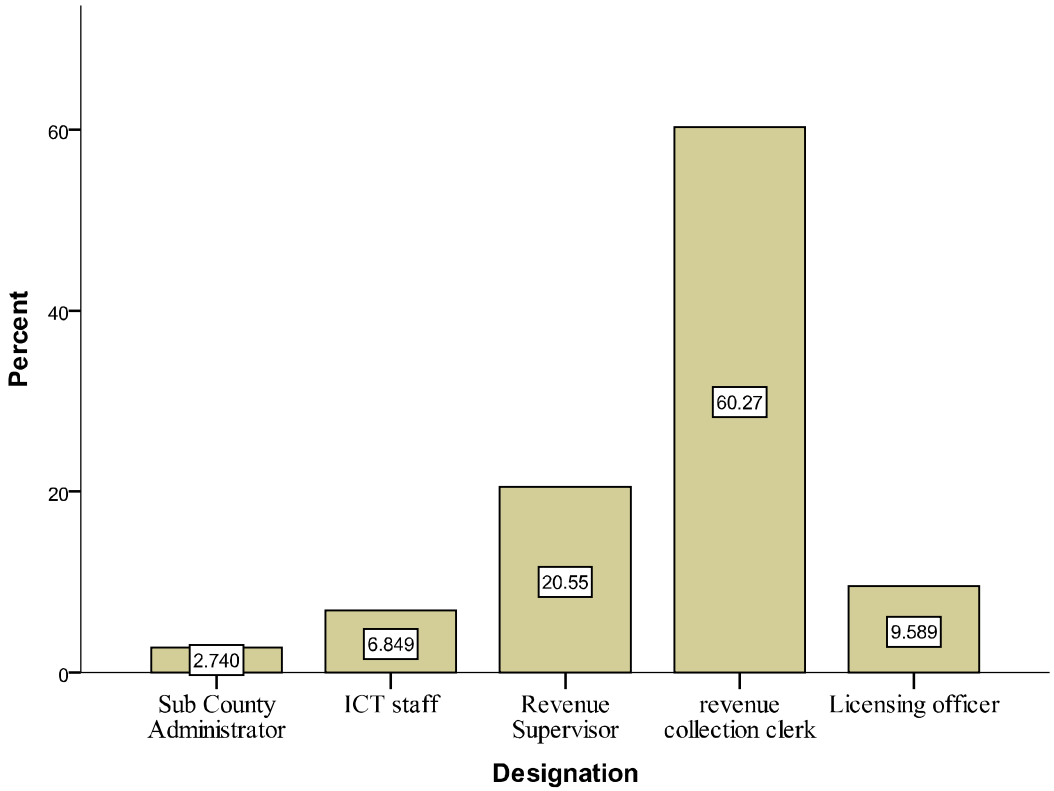

Figure 4.2: Designation of Staff in Revenue Management

As shown on the findings in Figure 4.2, majority of the staff who participated in the study (60.27%) were revenue collection clerks followed by revenue supervisors who were 20.55% as well as licensing officers forming 9.59%. The rest of the staff was ICT staff (6.85%) and Sub – County Administrators (2.74%). The distribution of staff shows that participants of the study were drawn from across the departments involved in revenue

collection and management therefore opinions were sought on the subject matter from a wider staff perspective.

4.2.4 Highest Education

The education level of the revenue management staff was also determined in the study as presented on the findings in Figure 4.3.

4.3 User Perceptions on Utilization of MIS in Revenue Collection

The study's first specific objective was to establish the effects of user perceptions on utilization of MIS in revenue management in Nakuru County Government. Therefore, the study first sought to determine the perceptions of the county government revenue management staff on the utilization of MIS in revenue collection, the responses are presented in Table 4.2.

Table 4.2

User Perceptions on Utilization of MIS in Revenue Collection

User Perceptions	SA	A	N	D	SD	$\chi 2$	p
a) Use of MIS will improve the quality of services offered by County Government of Nakuru	46 (63.0)	12 (16.4)	5 (6.8)	7 (9.6)	3 (4.1)	224.9	0.00
b) MIS in revenue collection helps in sealing off all loophole of revenue leakages	25 (34.2)	34 (46.6)	4 (5.5)	0 (0.0)	10 (13.7)	149.3	0.00
c) Using MIS in revenue collection in the county is an attractive idea	28 (38.4)	27 (37.0)	9 (12.3)	6 (8.2)	3 (4.1)	244.7	0.00
d) I enjoy the personal satisfaction of using RMIS in the county	13 (17.8)	35 (47.9)	8 (11.0)	17 (23.3)	0 (0.0)	131.6	0.00
e) The use of MIS will help in enhancing efficiency in revenue collection in the county	31 (42.5)	29 (39.7)	4 (5.5)	6 (8.2)	3 (4.1)	277.5	0.00
f) Using MIS does not have a negative effect on the careers of revenue collection staff	13 (17.8)	17 (23.3)	23 (31.5)	17 (23.3)	3 (4.1)	221.3	0.00
g) Using MIS will make the revenue collection job easier than before	28 (38.4)	31 (42.5)	6 (8.2)	1 (1.4)	7 (9.6)	199.8	0.00
h) The MIS technology used is easy for staff to adopt with minimum training.	27 (37.0)	36 (49.3)	8 (11.0)	2 (2.7)	0 (0.0)	159.1	0.00

Key:SA– Strongly agree, A – Agree,N – Not sure, D – Disagree, SD – Strongly disagree

The findings on Table 4.2 shows that majority of the staff of the county government of Nakuru in Charge of revenue management strongly agreed (63.0%) that the use of MIS would improve the quality of services offered by County Government of Nakuru, a further 16.4% agreed. Those with a contrary opinion included 9.6% who disagreed and 4.1% who strongly disagreed that the use of MIS would enhance the quality of services offered by the county government. A chi square test on this opinion against the utilization MIS revealed that, this perception was highly associated with the staff level of utilization of MIS in revenue management activities ($\chi 2 = 224.9$, $p = 0.00$) since staff who were positive that MIS would enhance quality of service used the MIS more. Staff were also asked to indicate their opinion on the use of MIS in revenue management and whether this helped in sealing avenues for revenue leaks. The findings reveled that majority of the staff were confident that use of MIS would seal loopholes for revenue leaks where 34.2% strongly agreed and 46.6% agreed. However, 13.7% strongly disagreed that use of MIS would eliminate revenue leaks. This perception was significantly associated with the level of utilization of MIS among revenue management staff in the County Government of Nakuru ($\chi 2 = 149.3$, $p = 0.00$).

Majority of the revenue management staff also considered using MIS in revenue collection in the county as an attractive idea where 38.4% strongly agreed and 37.0% agreed. However, 12.3% were of a contrary opinion where 8.2% disagreed and 4.1% strongly disagreed. Further examination revealed a statistically significant association between staff perception on the attractiveness of using MIS and their involvement in the utilization of MIS in revenue Management activities ($\chi 2 = 244.7$, $p = 0.00$). The level to which individual staff enjoyed using MIS in revenue management was also examined

where 47.9% agreed and another 17.8% strongly agreed that that they enjoyed using MIS in revenue management activities. However, 23.3% disagreed that they enjoyed. The level to which staff enjoyed using MIS was significantly associated with their level of utilization of the platform in revenue collection activities of the county government ($\chi 2$ = 131.6, p = 0.00).

In light of whether the use of MIS was perceived to help in enhancing efficiency in revenue collection in the county, 42.5% of the staff who participated in the study strongly agreed while 39.7% agreed. However, 12.3% were of a contrary opinion where 8.2% disagreed and 4.1% strongly disagreed. Further examination revealed a close association between the perception that MIS enhanced efficiency and staff utilization of MIS in their duties ($\chi 2$ = 277.5, p = 0.00).

On the perception that using MIS did not have a negative effect on the careers of revenue collection staff, there were mixed opinion where only 23.3% of the staff agreed and 17.8% strongly agreed that MIS would not affect their career. On the contrary, 23.3% disagreed while 4.1% strongly disagreed meaning that 27.4% perceived MIS as a threat to their careers. Besides, 31.5% had mixed opinions on the same meaning. The staff perceptions on the impact of MIS on their careers was found to have a significant association with the way they utilized MIS in their duties ($\chi 2$ = 221.3, p = 0.00).

Majority of staff of the County Government of Nakuru perceived that using MIS would make the revenue collection job easier than before. This view was held by 42.5% of the staff who agreed and 38.4% who strongly agreed, 9.6% however strongly disagreed. The

view that MIS would make the revenue collection job easier was also significantly associated with staff utilization of MIS in the revenue management ($\chi 2 = 199.8$, $p = 0.00$). Finally on staff perceptions on MIS, the study sought to determine whether the staff viewed the MIS technology used as easy for staff to adopt with minimum training. The findings revealed that 49.3% of the staff who participated agreed that the technology was easy to adopt while 37.0% strongly agreed, 11.0% were however not sure while a marginal percentage of 2.7% disagreed. Perceived ease of adoption of MIS technology was also found to have a significant association with the utilization of MIS in revenue collection ($\chi 2 = 159.1$, $p = 0.00$).

4.4 ICT Infrastructure on Utilization of MIS in Revenue Management

The second objective for the study sought to establish the effects of ICT infrastructure on the utilization of revenue MIS in revenue management in Nakuru County Government, Kenya. To begin with, the study sought to determine whether overall the ICT infrastructure in revenue management was adequate. The responses as shown on

Figure 4.3.

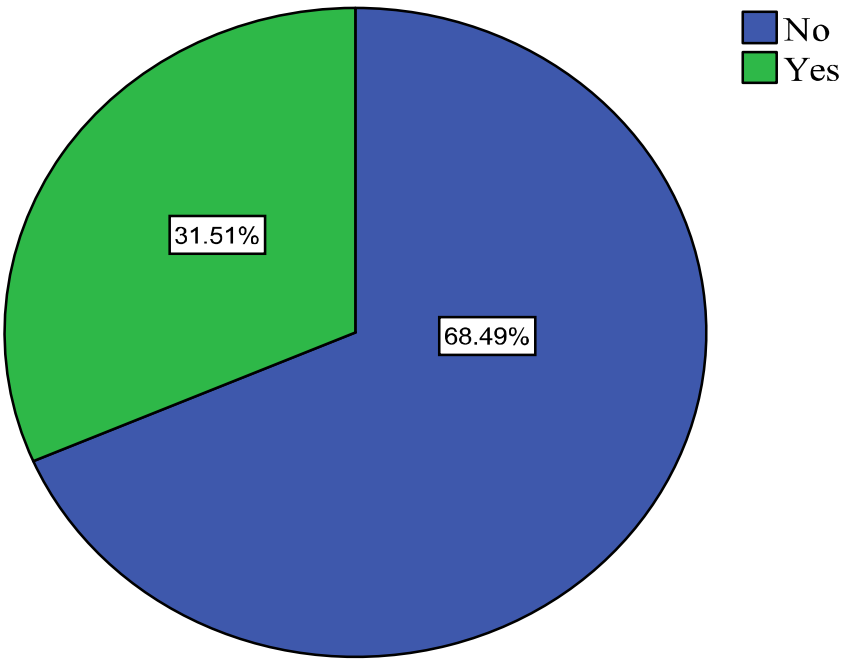

Figure 4.3: Whether ICT Infrastructure

A vast majority of the staff involved in revenue management in the county government of Nakuru (68.49%) perceived the ICT infrastructure as inadequate to support the adoption of MIS in revenue management. The study further explored the specific ICT infrastructure to determine their level of adequacy in the county government of Nakuru. The findings are presented in Table 4.3.

Table 4.3

ICT Infrastructure on Utilization of MIS in Revenue Management

ICT Infrastructure	SA	A	N	D	SD	$\chi 2$	p
a) Desktop Computers	19	22	18	9	5	188.6	0.00
	(26.0)	(30.1)	(24.7)	(12.3)	(6.8)		
b) Laptops	14	25	11	18	5	177.2	0.00
	(19.2)	(34.2)	(15.1)	(24.7)	(6.8)		
c) Printers	20	21	15	17	0	156.6	0.00
	(27.4)	(28.8)	(20.5)	(23.3)	(0.0)		
d) Server	19	22	15	17	0	132.0	0.00
	(26.0)	(30.1)	(20.5)	(23.3)	(0.0)		
e) Computer Network	18	20	10	14	11	176.1	0.00
	(24.7)	(27.4)	(13.7)	(19.2)	(15.1)		
f)Application	11	23	23	10	6	194.1	0.00
Softwarese.g. ERP	(15.1)	(31.5)	(31.5)	(13.7)	(8.2)		
g) ICT support centre	27	13	20	13	0	146.3	0.00
	(37.0)	(17.8)	(27.4)	(17.8)	(0.0)		
h) Internet Services	28	13	17	11	4	189.8	0.00
	(38.4)	(17.8)	(23.3)	(15.1)	(5.5)		
i) Website	15	20	32	6	0	177.6	0.00
	(20.5)	(27.4)	(43.8)	(8.2)	(0.0)		
j)Computer security	18	19	22	11	3	173.6	0.00
systems	(24.7)	(26.0)	(30.1)	(15.1)	(4.1)		

Key:SA– Strongly agree, A – Agree, N – Not sure, D – Disagree, SD – Strongly disagree

Concerning the adequacy of the ICT Infrastructure used to support the implementation of MIS in revenue management, 30.1% rated the desktop computers as adequate while 26.0% as very adequate, 24.7% were of the vie that desktop computers were average. On the other hand, 12.3% viewed the desktop computers as inadequate and 6.8% very inadequate. The perceived adequacy of desktop computers was significantly associated with utilization of MIS in revenue collection ($\chi 2 = 188.6$, $p = 0.00$). Laptop computers were rated adequate by 34.2% and very adequate by 19.2% while 15.1% rated them

average however, 24.7% felt that laptops were inadequate while 6.8% cited very inadequate. The adequacy of laptops was significantly associated with the utilization of MIS in revenue management ($\chi 2 = 177.2$, $p = 0.00$). Printers according to 27.4% were very adequate and adequate according to 28.8%, 20.5% rated them average while 23.3% felt that printers were inadequate. The level of adequacy of printers was significantly associated with the utilization of MIS in revenue management ($\chi 2 = 156.6$, $p = 0.00$). Computer server were rated as adequate by 30.1% and very adequate by 26.0%, 20.5% rated the servers average on adequacy while 23.3% considered the servers as inadequate to sustain the MIS operations. The rating on the adequacy of computer servers was significantly associated with the MIS utilization at the county government of Nakuru ($\chi 2 = 132.0$, $p = 0.00$).

Another parameter considered as ICT infrastructure in the study was computer networking. Networking according to 24.7% was very adequate while 27.4% rated it as adequate. On the contrary, 19.2% considered computer networking as inadequate while 15.1% cited networking as very inadequate. The level of networking was significantly associated with utilization of MIS in revenue management ($\chi 2 = 176.1$, $p = 0.00$). Application softwares for use in revenue management were considered adequate by 31.5% while 15.1% cited software as very adequate and 31.5% average. On the contrary, 13.7% considered the application softwares inadequate while 8.2% considered softwares very inadequate. The level of adequacy of application softwares was significantly associated with utilization of MIS in revenue management ($\chi 2 = 194.1$, $p = 0.00$).

The ICT support centre for the revenue management department in the county government of Nakuru was considered to be very adequate according to 37.0% of the staff and adequate by 17.8%. 27.4% rated that ICT support on average while 17.8%

found ICT support to be inadequate. The adequacy of ICT support was significantly associated with the utilization of MIS in revenue collection in the County Government of Nakuru ($\chi 2 = 146.3$, $p = 0.00$).

The Internet services in revenue management departments was very adequate according to 38.4% of the staff and adequate according to 17.8%, 23.3% rated it average. On the contrary, 15.1% considered the internet as inadequate while 5.5% considered internet as very inadequate. The rating on adequacy of internet services was significantly associated with the rating on the utilization of MIS in revenue management ($\chi 2 = 189.8$, $p = 0.00$). Regarding the websites for hosting the revenue management information systems, 43.8% of the staff rated it at average while 27.4% rated it as adequate, 20.5% rated it very adequate. A smaller proportion of 8.2% rated the websites as inadequate. Computer security was rated at an average by 30.1% of the staff in the revenue management in the county government while 26.0% rated it adequate and 24.7% as very adequate. On the contrary, 15.1% rated computer security as inadequate while 4.1% rated it as very inadequate. The rating on the county government website for revenue collection and computer security were found to have a significant association with the level of utilization of MIS in revenue management at ($\chi 2 = 177.6$, $p = 0.00$) and ($\chi 2 = 173.6$, $p = 0.00$) respectively.

4.5 Technical Capacity on Utilization of MIS in Revenue Management

The third objective of the study was to assess the effects staff technical capacity on utilization of MIS in revenue management in Nakuru County Government, Kenya. Table 4.4 presents the findings.

Table 4.4

Technical Capacityon Utilization of MIS in Revenue Management

Technical Skills	**SA**	**A**	**N**	**D**	**SD**	**$\chi 2$**	**p**
Information Technology skills	19	41	0	12	1	87.3	0.01
	(26.0)	(56.2)	(0.0)	(16.4)	(1.4)		
Management Information	13	22	32	6	0	150.1	0.00
System Skills	(17.8)	(30.1)	(43.8)	(8.2)	(0.0)		
Skills on use of MIS in	16	22	23	12	0	170.1	0.00
revenue collection	(21.9)	(30.1)	(31.5)	(16.4)	(0.0)		
Skills on MIS application	14	31	13	15	0	150.5	0.00
programs in Revenue	(19.2)	(42.5)	(17.8)	(20.5)	(0.0)		
management							
Analysis of data in MIS	27	15	22	9	0	150.5	0.00
	(37.0)	(20.5)	(30.1)	(12.3)	(0.0)		
Preparation of reports using	21	12	23	17	0	157.0	0.00
MIS	(28.8)	(16.4)	(31.5)	(23.3)	(0.0)		
Usage of MIS decision making	28	15	10	20	0	121.2	0.00
	(38.4)	(20.5)	(13.7)	(27.4)	(0.0)		
Experience in the use of MIS	23	22	11	17	0	136.2	0.00
	(31.5)	(30.1)	(15.1)	(23.3)	(0.0)		

Key: SA– Strongly agree, A – Agree, N – Not sure, D – Disagree, SD – Strongly disagree

The staff of the County Government of Nakuru charged with the responsibility of revenue management rated themselves differently on their technical capacity associated with the use of MIS. To begin was the information technology skills where 56.2% rated themselves to have adequate skills while 26.0% rated themselves very adequate. However, 16.4% considered their IT skills as adequate. The self-ratings on adequacy of IT skills was significantly associated with utilization of MIS in revenue management ($\chi 2 = 87.3$, $p = 0.01$).

On Management Information Systems skills which are key in operationalizing MIS, 43.8% rated themselves average on these skills while 30.1% rated themselves as having adequate skills and 17.8% very adequate skills. Those who considered themselves as inadequate on MIS skills constituted 8.2% of the staff the level of MIS skills were significantly associated with utilization of MIS in revenue management ($\chi 2 = 150.1$, $p = 0.00$). Skills on use of MIS in revenue collection were rated average by 31.5%, adequate in 30.1% and very adequate in 21.9% of the respondents. These skills were also significantly associated with the utilization of MIS in revenue management ($\chi 2 = 170.1$, $p = 0.00$).

Skills on MIS application programs in Revenue management were rated adequate among 42.5% of the staff in revenue management and very adequate in 19.2%, 17.8% rated themselves on average. However, 20.5% of the staff considered themselves inadequate in skills on application of MIS in revenue management. There was a significant association between rating on skills for MIS application in revenue management and utilization of

MIS in revenue management among staff in the County Government of Nakuru ($\chi 2$ = 150.5, p = 0.00). Skills on analysis of data in MIS were very adequate 37.0% and adequate in 20.5%. Analysis skills were average among 30.1% of the staff, however, 12.3% cited that they had inadequate skills to analyze MIS data. Skills for analysis MIS data were also statistically significantly associated with utilization of MIS in revenue management ($\chi 2 = 150.5$, p = 0.00).

Skills on preparation of reports using MIS were rated very adequate among 28.8% of the staff and adequate in 16.4% while 31.5% rated themselves average. On the contrary, 23.3% rated themselves as inadequate. Report preparation skills were significantly associated with utilization of MIS in revenue management among staff in the county government of Nakuru ($\chi 2 = 157.0$, p = 0.00). The ability to use MIS in decision making was rated very adequate by 38.4% and adequate by 20.5% while 13.7% considered their skills as average. However, 27.4% considered their decision making skills using revenue MIS as inadequate. The study further revealed a significant association between skills on the usage of MIS decision making and utilization of MIS in revenue management ($\chi 2$ = 121.2, p = 0.00). Lastly on capacity, the study considered staff experience in the use of MIS and found out that 31.5% considered their experience as very adequate, 30.1% adequate while 15.1% considered their experience as average. On the contrary, 23.3% considered their experience as inadequate. The level of experience of staff on MIS was also significantly associated with the use of MIS in revenue management among staff in the county government of Nakuru ($\chi 2 = 136.2$, p = 0.00).

4.6 Resistance to change on adoption of MIS in Revenue Management

The fourth objective of the study sought to investigate how resistance to change affects utilization of MIS in revenue management in Nakuru County Government, Kenya. This section presents the findings on the indicators of resistance to change among staff managing revenue in the county government of Nakuru and their level of association with utilization of MIS in Revenue management. The general perception of all the staff on the use of MIS in revenue management is presented on Figure 4.3.

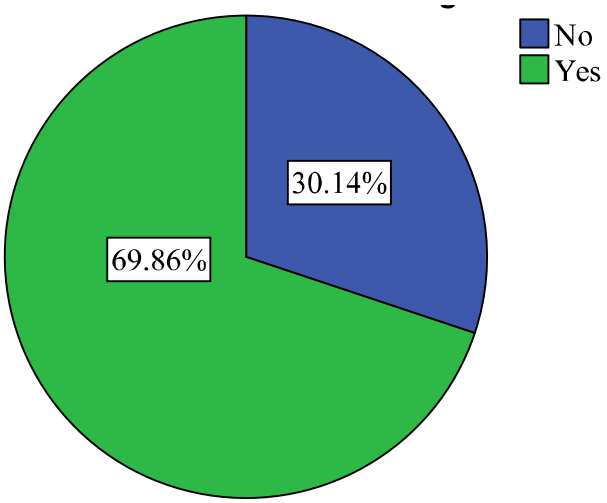

Figure 4.4: General perception on embracing use of MIS in revenue Management

In the wider Government of Nakuru County, use of MIS in revenue management was well embraced according to 69.86% of the staff who participated. However, 30.14% did not welcome the use of MIS in revenue management. This shows that nearly one third of the population in the County Government of Nakuru did not embrace MIS in revenue management positively.

Table 4.5

Level to which staff embrace MIS in Revenue Management

Statements	SA	A	N	D	SD	$\chi 2$	p
a) Personally I like the MIS more as compared to the method we used previously.	36 (49.3)	16 (21.9)	8 (11.0)	9 (12.3)	4 (5.5)	241.5	0.00
b) The use of information systems is better in revenue reporting as compared to the previous method.	21 (28.8)	35 (47.9)	14 (19.2)	3 (4.1)	0 (0.0)	170.5	0.00
c) To me, the changes brought about by the MIS are good.	27 (37.0)	30 (41.1)	13 (17.8)	3 (4.1)	0 (0.0)	177.9	0.00
d) I fully support the county in implementing MIS in revenue management	17 (23.3)	38 (52.1)	5 (6.8)	13 (17.8)	0 (0.0)	163.9	0.00
e) MIS has enhanced the efficiency in revenue reporting in the county as compared to the previous method.	28 (38.4)	16 (21.9)	9 (12.3)	20 (27.4)	0 (0.0)	182.6	0.00
f) I am willing to support the full implementation of MIS in revenue management in this county.	29 (39.7)	20 (27.4)	11 (15.1)	13 (17.8)	0 (0.0)	157.8	0.00

Key:SA– Strongly agree, A – Agree, N – Not sure, D – Disagree, SD – Strongly disagree

At personal level 49.3% of the staff strongly agreed and 21.9% agreed that they liked MIS more as compared to the methods used previously in revenue collection and management. However, 12.3% disagreed and 5.5% strongly disagreed meaning that 17.8% did not like the MIS integrated system compared to the previous manual system of revenue management. This view was significantly associated with individuals level of

utilization of MIS in revenue management activities ($\chi 2 = 241.5$, $p = 0.00$). On revenue reporting, 47.9% agreed and 28.8% strongly agreed that the use of information systems is better in revenue reporting as compared to the previous manual method 4.1% disagreed while 19.2% were not able to tell which of the two systems was better. This perception was also significantly associated with the level of utilization of MIS in revenue management ($\chi 2 = 170.5$, $p = 0.00$).

The study further sought to determine how staff perceived the change from manual to MIS integrated revenue management. According to the findings, 41.1% agreed and 37.0% strongly agreed that the changes brought about by the MIS were good to them, 17.8% were however unable to tell whether the changes were good to them or not while 4.1% disagreed. The perception on whether the change was good or not was significantly associated with staff level of utilization of MIS in revenue management ($\chi 2 = 177.9$, $p = 0.00$). Majority of the staff support the county government decision to embrace the use of MIS in revenue management where 52.1% agreed while 23.3% strongly agreed, 6.8% were not decided while 17.8% disagreed. The support on the county governments' efforts by the staff was statistically significant in influencing individuals staffs' decision to utilize MIS in revenue management ($\chi 2 = 163.9$, $p = 0.00$).

Majority of the staff viewed that MIS has enhanced the efficiency in revenue reporting in the county as compared to the previous method. This was based on the opinion of 38.4% of the staff who strongly agreed and 21.9% who agreed. However, 12.3% were not decided while 27.4% disagreed. The view that MIS enhanced the efficiency was

significantly associated with the utilization of MIS in revenue Management ($\chi 2 = 182.6$, $p = 0.00$). Going forward 39.7% of the staff strongly agreed and 21.9% agreed that they were willing to support the full implementation of MIS in revenue management in this county. On the contrary 27.4% disagreed while 15.1% were not decided. The decision to support full implementation of MIS in revenue management was significantly associated with individuals level of utilization of MIS in revenue management activities ($\chi 2 = 157.8$, $p = 0.00$).

4.7 Utilization of MIS in Revenue Management

The study sought to assess the various factors that influenced the utilization of MIS in revenue management in the county Government of Nakuru. The level of utilization was determined by analyzing the extent to which MIS was used in the different functions of revenue collection and management. The findings are presented in Table 4.6.

Table 4.6

Utilization of MIS in Revenue Management

MIS utilization in Revenue Management	SA	A	N	D	SD
a) Electronic-billing	46	16	7	4	0
	(63.0)	(21.9)	(9.6)	(5.5)	(0.0)
b) Revenue collection and entry	37	15	17	4	0
	(50.7)	(20.5)	(23.3)	(5.5)	(0.0)
c) Auditing	22	28	19	4	0
	(30.1)	(38.4)	(26.0)	(5.5)	(0.0)
d) Reference to customer payment details	39	20	9	5	0
	(53.4)	(27.4)	(12.3)	(6.8)	(0.0)
e) Registration of all businesses in the county	39	27	7	0	0
	(53.4)	(37.0)	(9.6)	(0.0)	(0.0)
f) Registration and valuation of property rates/land rates	39	18	11	2	3
	(53.4)	(24.7)	(15.1)	(2.7)	(4.1)
g) Generation of online and real-time business permits	28	33	12	0	0
	(38.4)	(45.2)	(16.4)	(0.0)	(0.0)
h) Payment of services via electronic channels and mobile money	15	28	21	9	0
	(20.5)	(38.4)	(28.8)	(12.3)	(0.0)
i) Access of information and service anywhere anytime	20	21	23	9	0
	(27.4)	(28.8)	(31.5)	(12.3)	(0.0)
j) Online customer care service via internet and call integrated call centre	26	22	12	13	0
	(35.6)	(30.1)	(16.4)	(17.8)	(0.0)
k) Prepaid cards for various taxes	17	23	17	14	2
	(23.3)	(31.5)	(23.3)	(19.2)	(2.7)
l) Generation of county and customer account statements-history of payments of taxes	26	26	20	1	0
	(35.6)	(35.6)	(27.4)	(1.4)	(0.0)
m) Generation of real time reporting for county government and citizens	32	19	8	11	3
	(43.8)	(26.0)	(11.0)	(15.1)	(4.1)

Key:SA– Strongly agree, A – Agree, N – Not sure, D – Disagree, SD – Strongly disagree

Majority of the staff 63.0% used MIS in electronic billing fully while 21.9% used it partially, 9.6% cited that MIS in electronic billing was used sometimes while 5.5% rarely used electronic billing. None indicated that electronic billing was never used. In revenue collection and entry, 50.7% of the staff indicated that MIS was fully used while 20.5% cited partial usage. The remaining 23.3% cited usage sometimes while 5.5% cited rare usage. In auditing function, MIS was used fully according to 30.1% of the staff, partially according to 38.4% and sometimes according to 26.0%, 5.5% cited that the usage was rare. In making reference on payments in the county, 53.4% of the staff relied fully on MIS while 27.4.0% relied on MIS partially, 12.3% used MIS sometimes in making references while 6.8% rarely used MIS. In the registration of businesses 53.4% cited full reliance on MIS while 37.0% cited partial use while in registration of properties, 53.4% cited full usage and 24.7% partial use.

Other areas where MIS was used in revenue management include the generation of online and real-time business permits in which 38.4% of the staff cited full usage of MIS while 45.2% cited partial use. Payment of services via electronic channels and mobile money according to 20.5% of the staff relied fully on MIS while 38.4% cited partial usage, 28.8% indicated use of MIS sometimes. In remote Access of information and services, 27.4% of the staff cited full use of MIS while 28.8% cited partial use. Other revenue management function where staff used MIS include: Online customer care service via internet and call integrated call centre, use of prepaid cards, generation of county and customer account statements-history of payments of taxes, and generation of real time reporting for county government and citizens; the distribution on the level of utilization is shown on Table 4.6.

4.8 Inferential Analysis

The second stage of data analysis involved the use of inferential statistics to derive statistical inferences on the relationship between variables in the study. Two types of analyses done included correlation analysis to test the study hypotheses and regression analysis to test relationships between independent and dependent variables.

4.8.1 Correlation Analysis

Pearson correlation analysis was done between independent variables (user perceptions, ICT infrastructure, staff technical capacity and resistance to change) and the dependent variable (MIS utilization in revenue management) and the results presented on Table 4.7. The results were further used in testing the research hypotheses.

Table 4.7

Correlation Results

		User perceptions	**ICT Infrastructure**	**Technical capacity**	**Resistance to change**
User perceptions	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	73			
ICT Infrastructure	Pearson Correlation	.627**			
	Sig. (2-tailed)	.000			
	N	73			
Technical capacity	Pearson Correlation	.460**	.816**		
	Sig. (2-tailed)	.000	.000		
	N	73	73		
Resistance to change	Pearson Correlation	.816**	.672**	.443**	
	Sig. (2-tailed)	.000	.000	.000	
	N	73	73	73	
Utilization	Pearson Correlation	.537**	.653**	.621**	.486**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	73	73	73	73

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

Pearson correlation results on Table 4.7 indicates that there were statistically significant positive correlation between the four independent factors and the utilization MIS in revenue management in the county government of Nakuru. The results were further used to test the study hypotheses as follows:

The first hypothesis was:

$H0_1$: *User perception has no significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya*

The results of Pearson correlation analysis in Table 4.7 revealed a strong, positive and significant correlation between user perceptions and utilization of MIS in revenue management in the County Government of Nakuru ($r = 0.537$, $p < 0.01$). These results were also consistent with chi square tests on the individual elements of user perceptions and MIS utilization in revenue management in table 4.2. These results imply that user perceptions on MIS significantly affected the utilization of MIS in revenue management in the county government of Nakuru. Therefore the study rejects the hypothesis $H0_1$: User perception has no significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya. This compares to the technology adoption model which guides this study defines perception a key driver to adoption of the theory. The model identifies perceived ease of use and perceived benefits as key factors affecting utilization of MIS in revenue management.

The second Hypothesis of the study was:

$H0_2$: *ICT infrastructure does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya*.

The correlation test results on Table 4.7 revealed a strong, positive and significant correlation between the rating on the ICT infrastructure and utilization of MIS in revenue management in the County Government of Nakuru ($r = 0.653$, $p < 0.01$).. These test results were also consistent with the chi square test results in Table 4.3 between the

individual items of ICT infrastructure and MIS utilization in revenue management in the county government of Nakuru. The study therefore rejects the hypothesis **$H0_2$:** ICT infrastructure does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenyathis compares to Gardner (2000) on the other hand pointed out human resources, vendor and maintenance, culture, funding, education and training as key factors for management information use in developing countries. Therefore infrastructure was one on the inputs to successful MIS system in addition to the technical know-how of the staff.

The third hypothesis for the study was:

$H0_3$:*Staff technical capacity does not significantly affect utilization of MIS in revenue management in the County government of Nakuru, Kenya*.

However, the correlation test results on Table 4.7 revealed a strong, positive and significant correlation between the rating on the staff technical capacity and utilization of MIS in revenue management in the County Government of Nakuru ($r = 0.621$, $p < 0.01$). These test results were also consistent with the chi square test results in Table 4.4 between the individual items on staff technical capacity and MIS utilization in revenue management in the county government of Nakuru. The study therefore rejects the hypothesis **$H0_3$:** Staff technical capacity does not significantly affect utilization of MIS in revenue management in the County government of Nakuru, Kenya. This compares to Hofstede (2000) investigated the specific attributes of organizations that influence ICT adoption speed. The findings established that a cultural variable that is individualism and uncertainty avoidance might be used to predict the ease and speed of changes.

The fourth hypothesis for the study was:

H_{04}: *Resistance to change does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya*

The hypothesis was tested using Pearson correlation analysis. Resistance to change was measured by determining the extent to which staff embraced the change positively. The correlation test results on Table 4.7 revealed a strong, positive and significant correlation

between the rating embracing the change and utilization of MIS in revenue management in the County Government of Nakuru ($r = 0.486$, $p < 0.01$). These test results were also consistent with the chi square test results in Table 4.5 between the individual items on resistance to change/embracing change and MIS utilization in revenue management in the county government of Nakuru. The study therefore rejects the hypothesis **$H0_4$:** Resistance to change does not have a significant effect on utilization of MIS in revenue management in the County government of Nakuru, Kenya. This can be compared toLogan et al (2007)considers that even when structural changes are desirable from a financial or operations perspective, negative employee reactions can be influential to the degree of success of the planned change. Social identity theory principles appear important to the success of change, as threats to self-esteem and social identity may be underlying factors in the unconstructive behavior of employees who experience structural organizational change.

4.8.2 Regression Analysis

Further analysis to determine the relationships among independent and dependent variables was done using the multiple regression analysis to determine how the selected factors affected the utilization of MIS in revenue management.

The regression was based on the model:

The regression was based on the model below:

$$Y = \alpha_0 + \beta_i X_i + \beta_{ii} X_{ii} + \beta_{iii} X_{iii} + \beta_{iv} X_{iv} + e$$

Where:

Y	= Utilization of MIS in revenue management
$\beta_i, \beta_{ii}, \beta_{iii}, \beta_{iv}$	= Coefficients of the independent variables
X_i	= User perceptions
X_{ii}	= ICT Infrastructure
X_{iii}	= Staff Technical Capacity
X_{iv}	= Resistance to change
α_0	= Constant
e	= Error term

The findings were as shown on Tables 4.8, 4.9 &4.10 . Table 4.8 presents test results on the model summary.

Table 4.8

Regression Model Summary

Model	R	R Square	Adjusted R_2 Square	Std. Error of the Estimate
1	.695[a]	.483	.453	.38345

a. Predictors: (Constant), Resistance to change, Technical capacity, perceptions, Infrastructure

The results of Table 4.8 revealed that the $R^2 = 0.453$meaning that user perceptions, ICT infrastructure, staff technical capacity and resistance to change contributed 48.3% of the variations in the utilization of MIS in revenue management in the county Government of Nakuru. Table 4.9 shows the significance of the regression model in explaining the relationship between variables.

Table 4.9

ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.354	4	2.339	15.905	.000[a]
	Residual	9.998	68	.147		
	Total	19.352	72			

a. Predictors: (Constant), Resistance to change, Technical capacity, perceptions, Infrastructure

b. Dependent Variable: Utilization

According to the ANOVA results on Table 4.10(b) it can be seen the regression model developed through this study is significant in explaining the relationships between the selected factors and utilization of MIS in revenue management (F (4, 68) = 15.905 p = 0.00). Table 4.10 presents a Regression Model Coefficients

Table 4.10

Multiple Regression Results

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	VIF
1	(Constant)	1.988	.261		7.612	.000	
	Perceptions	.569	.097	.567	2.737	.018	3.109
	ICT Infrastructure	.456	.044	.483	2.499	.013	4.679
	Technical capacity	.379	.096	.360	2.861	.016	3.198
	Resistance to change	.330	.097	.321	2.305	.036	3.616

a. Dependent Variable: Utilization

From the regression model coefficients on Table 4.10, it can be concluded that all the factors contributed significantly to the utilization of MIS in revenue management in the County Government of Nakuru. User perceptions had a statistically significant effect on utilization of MIS in revenue management at the county government of Nakuru (β = 0.569, p <0. 05) VIF = 3.109 implied a moderate correlation between user perceptions and the other three predictor variables which shows that the relationship was significant.

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Secondly, there was a significant evidence that ICT Infrastructure affected the utilization of MIS in revenue Management (β = 0.456, p < 0.05); VIF = 4.679 therefore a moderate correlation exists between ICT infrastructure and the other predictor variables.

Staff technical capacity too significantly affected the utilization of MIS in revenue management (β = 0.379, p < 0.05) there was a moderate VIF = 3.198 therefore the relationship between staff technical capacity and utilization of MIS in revenue

management was not distorted by the other predictor variables although a correlation existed between them.

Finally the resistance to change among county government staff measured based on the level of embracing the changes by the introduction of MIS significantly affected the level of utilization of MIS in revenue management ($\beta = 0.330$, $p < 0.05$, VIF = 3.616.

The regression model therefore can be stated as:

$Y = 1.988+0.569\ X_i +0.456X_{ii} + 0..379X_{iii} +0.330X_{iv}$

Therefore

MIS utilization in the county Government of Nakuru = 1.988+0.569 User perception + 0.456 ICT Infrastructure + 0.379 Staff Technical Capacity +0.330Resistance to change

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter presents a summary of the research findings, conclusions and recommendations drawn from the study based on the research objectives.

5.2 Summary of Findings

The aim of the study was to analyze the factors affecting utilization of MIS in revenue management in the county government of Nakuru. Four factors were assessed: user perceptions, ICT infrastructure, staff technical capacity and resistance to change. The findings were as follows:

5.2.1 User perceptions on Utilization of MIS in Revenue Management

The findings on user perceptions and utilization of MIS revealed that majority of the staff of the county government of Nakuru in charge of revenue management were in agreement that MIS would improve the quality of services offered by County Government, MIS would help in sealing loopholes for revenue leaks and that using MIS in revenue collection in the county was an attractive idea. The level to which individual staff enjoyed using MIS in revenue management was also examined where majority were in agreement that they enjoyed using MIS in revenue management activities. However a sizable proportion of, 23.3% disagreed that they enjoyed.

MIS was perceived to help in enhancing efficiency in revenue collection in the county, and it did not have a negative effect on the careers of revenue collection staff, except for 23.3%. Majority of the staff of the County Government of Nakuru perceived that using MIS would make the revenue collection job easier than before and that MIS technology used was easy for staff to adopt with minimum training. The staff/user perceptions on MIS was found to have a positive and significant effect on MIS Utilization in the county government of Nakuru.

5.2.2 ICT infrastructure on the utilization of revenue MIS in revenue management

Concerning the adequacy of the ICT Infrastructure used to support the implementation of MIS in revenue management, majority of the staff rated the present infrastructure above average. These include: desktop computers, laptops, printers, computer server, computer networks, application softwares, ICT support centre, internet services, website, and computer security systems. The level of ICT infrastructure assessed were found to have a statistically significant effect on the level of utilization of MIS in revenue management.

5.2.3 Staff Technical Capacity on Utilization of MIS in Revenue Management

The staff of the County Government of Nakuru charged with the responsibility of revenue management rated themselves differently on their technical capacity associated with the use of MIS. Majority rated themselves above average information technology skills, On Management Information Systems skills, Skills on use of MIS in revenue collection, Skills on MIS application programs in Revenue management, skills on analysis of data in MIS, skills on preparation of reports using MIS, the ability to use MIS in decision making and experience in the use of MIS. However it was worth noting that a significant proportion of staff in revenue management ranging between 20 – 30% considered themselves as inadequate in Skills on MIS application programs in revenue management, preparation of reports using MIS, usage of MIS decision making and experience in the use of MIS. Both correlation and regression results revealed that the technical capacity of staff had a statistically significant effect on utilization of MIS in revenue management.

5.2.4 Resistance to Change on Utilization of MIS in Revenue Management

Resistance to change was assessed based on the level to which staff embraced the use of MIS in revenue management where the results revealed that at personal level majority of the staff liked MIS more as compared to the methods used previously in revenue collection and management.. Majority also indicated

That the use of information systems was better in revenue reporting compared to the previous manual method and that the changes brought about by the MIS were good to

them. The proportion of staff who supported the county governments' efforts of implementing MIS was also above average. Majority of the staff viewed that MIS has enhanced the efficiency in revenue reporting and that going forward majority of the staff were willing to support the full implementation of MIS in revenue management in this county. The level to which the staff embraced the implementation of MIS in revenue management significantly affected the utilization of MIS in revenue management by staff. However there was a concern on the proportion of staff (27.4%) who disagreed that MIS has enhanced the efficiency in revenue reporting in the county as compared to the previous manual methods.

5.3 Conclusions

The user perceptions significantly influenced the utilization of MIS in revenue management in the county government of Nakuru. However it was worth noting that there were staff who perceived enjoyable to use as well as a threat to their career in revenue management.

ICT infrastructure was found to have a statistically significant effect on the level of utilization of MIS in revenue management in the county government of Nakuru. Some of the essential infrastructure that facilitates the use of MIS include: desktop and laptop computers, computer server, computer networks, application softwares, ICT support Centre, internet services, website, and computer security systems.

Staff technical capacity comprising of skills competencies and experience played a significant role in enhancing the level of utilization of MIS in revenue management. However, although majority of the staff rated themselves above average on various skills, between 20 – 30% considered themselves as inadequate in skills on MIS application programs in revenue management, preparation of reports using MIS, usage of MIS decision making and experience in the use of MIS

Resistance to change by the implementing staff significantly affected the level of utilization MIS in revenue management in the county Government of Nakuru. Although

the resistance to change was minimum it was still present in the process of implementing MIS in the county government, a fraction of the staff considered that MIS has not enhanced the efficiency in revenue reporting in the county as compared to the previous manual methods.

5.4 Recommendations

The county government of Nakuru should consider obtaining regularly the opinions and perceptions of the staff on the implementation of MIS in order to put in place measures to eliminate negative perceptions about the systems.

The county government should enhance the investment in ICT infrastructure that supports the use of MIS in revenue management such as application softwares, interactive devices.

The county government of Nakuru should invest heavily on staff training for all its staff involved in revenue management on the utilization on MIS in revenue management especially on the weak areas which include: MIS application programs, preparation of reports and the use of MIS in decision making

The county government of Nakuru should enhance its staff sensitization campaigns on the benefits of MIS in revenue management as well as the indicators for evaluating the success of the system to inculcate positive attitude towards its implementation and success.

5.5 Recommendations for further Research

There is need for follow up studies in other counties that have embraced MIS in revenue collection and management in order to determine the standard best practices and the common factors that influence its adoption and utilization in different contexts. This will enable the generalization of results across counties in Kenya.

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APPENDIX I: LETTER OF INTRODUCTION

HARRIET MWENDWA
P.O. Box, 15142-20100,
Nakuru.
Date: 10th September, 2015

RE: RESEARCH

I hereby kindly ask you to provide information regarding this questionnaire to enable me carry out a research titled

FACTORS AFFECTING THE UTILIZATION OF INFORMATION SYSTEMS IN REVENUE MANAGEMENT IN COUNTY GOVERNMENTS:
A SURVEY OF NAKURU COUNTY GOVERNMENT

I am a student at Kabarak University, Nakuru. Any clarifications and additional information required can be served through the university or through the contact address provided.

Your assistance will be highly appreciated.

Thank you in advance.

Yours Faithfully

Appendix II: Research Questionnaire

SECTION A: BASICINFORMATION

1. Indicate your Gender:

   Male [ ] Female [ ]

2. Which of these categories describes your age?

   18 – 30 years [ ] 31 – 40 years [ ]

   41 – 50 years [ ] 51 – 60 years [ ]

   Above60 years [ ]

3. What is your Designation in the County?

   Sub-County Administrator [ ] ICT staff [ ]

   Revenue supervisor [ ] Revenue collection clerk [ ]

   Licensing officer [] Any other (Specify) ……

4. What is your highest education qualification?

   KCSE [ ] Certificate/Diploma [ ]

   Bachelor Degree [ ] Post graduate degree [ ]

SECTION 2: USER PERCEPTIONS ON MIS IN REVENUE MANAGEMENT

5. What is your opinion on the use of MIS in revenue management in County Government of Nakuru?

Use the scale 5 – Strongly agree, 4 – Agree, 3 – Not sure, 2 – Disagree, 1 – Strongly disagree

Statements	**5**	**4**	**3**	**2**	**1**
a) Use of MIS will improve the quality of services offered by County Government of Nakuru					
b) MIS in revenue collection helps in sealing off all loophole of revenue leakages					
c) Using MIS in revenue collection in the county is an attractive idea					

d) I enjoy the personal satisfaction of using RMIS in the county					
e) The use of MIS will help in enhancing efficiency in revenue collection in the county					
f) Using MIS does not have a negative effect on the careers of revenue collection staff					
g) Using MIS will make the revenue collection job easier than before					
h) The MIS technology used is easy for staff to adopt with minimum training.					

6. How else do you view the use of MIS will affect your job in revenue collection at County Government of Nakuru?

_____

_____

SECTION 3: ICT INFRUSTRUCTURE

7 In your view, does the County Government have enough ICT infrastructure to support the adoption of MIS?

Yes [ ] No [ ]

8. How do you rate the adequacy of the following ICT infrastructure and equipment supporting the use of MIS in County Government of Nakuru?

Use the scale 5 – Very adequate, 4 – Adequate, 3 – Average, 2 – Inadequate, 1 – Very inadequate.

ICT Infrastructure	5	4	3	2	1
a) Desktop Computers					
b) Laptops					
c) Printers					
d) Server					
e) Computer Network					
f) Application Softwarese.g ERP					
g) ICT support centre					
h) Internet Services					
i) Website					
j) Computer security systems					

SECTION 4: STAFF TECHNICAL CAPACITY

9. On a scale of 1 – 5, rate yourself on the adequacy of the following skills used in MIS. Use the Scale *5 – Very adequate, 4 – Adequate, 3 – Average, 2 – Inadequate, 1 – Very inadequate.*

Skills	5	4	3	2	1
Information Technology skills					
Management Information System Skills					
Skills on use of MIS in revenue collection					
Skills on MIS application programs in Revenue management					
Analysis of data in MIS					
Preparation of reports using MIS					
Usage of MIS decision making					
Experience in the use of MIS					

10. Indicate any other skills you possess pertaining to MIS?

_____

SECTION 5: RESISTANCE TO CHANGE

11. Generally, are the staffs of Nakuru County Government embracing the use of MIS in revenue management positively?

Yes [ ] No [ ]

12. What is your own view on the changes brought about by use of MIS on the operations of Nakuru County Government? Rate your opinion by indicating the level of agreement on the scale: 5 - Strongly agree; 4 – Agree; 3 - Not decided; 2- Disagree; 1 - Strongly Disagree

Statements	**5**	**4**	**3**	**2**	**1**
g) Personally I like the MIS more as compared to the method we used previously.					
h) The use of information systems is better in revenue reporting as compared to the previous method.					
i) To me, the changes brought about by the MIS are good.					
j) I fully support the county in implementing MIS in revenue management					
k) MIS has enhanced the efficiency in revenue reporting in the county as compared to the previous method.					
l) I am willing to support the full implementation of MIS in revenue management in this county.					

SECTION 6: UTILIZATION OF MIS IN REVENUE MANAGEMENT

13. How often is the revenue collection information system used in performing the following tasks of revenue collection in the County Government of Nakuru.*Use the scale 5 – Fully used, 4 – Partially, 3 – Sometimes, 2 – Rare, 1 – Never.*

MIS utilization inRevenue Management	**5**	**4**	**3**	**2**	**1**
a) Electronic-billing					
b) Revenue collection and entry					
c) Auditing					
d) Reference to customer payment details					
e) Registration of all businesses in the county					
f) Registration and valuation of property rates/land rates					

g) Generation of online and real-time business permits					
h) Payment of services via electronic channels and mobile money					
i) Access of information and service anywhere anytime					
j) Online customer care service via internet and call integrated call centre					
k) Prepaid cards for various taxes					
l) Generation of county and customer account statements-history of payments of taxes					
m) Generation of real time reporting for county government and citizens					

THANK YOU