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An assessment of integrated financial management information system implementation towards effective management practices in Nairobi and Lamu Counties

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AN ASSESSMENT OF INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM IMPLEMENTATION TOWARDS EFFECTIVE MANAGEMENT PRACTICES IN NAIROBI AND LAMU COUNTIES

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the thesis itself.

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June 2016

APPROVAL

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DEDICATION

To my wife; Caroline Wawira Njiru

Daughter; Tara Karimi Njiru

Son; Kyle Mwaniki Njiru

ABBREVIATIONS AND ACRONYMS

BPR	Business Process Re-engineering
CRA	Commission of Revenue Allocation
ERP	Enterprise Resource Planning
GoK	Government of Kenya
ICT	Information and Communication Technologies (ICTs)
IFMIS	Integrated Financial management Information System
IPPD	Integrated Payroll Personnel Database
LAIFOMS	Local Authorities Information and Financial Operations Management
OECD	Organisation for Economic Co-operation and Development
PFM	Public Financial Management

DEFINITION OF TERMS

Corporate Governance: "Corporate governance practice is an internal mechanism for monitoring management. Good corporate governance is an effective tool for helping a firm to attain better performance" (Ghabayen, 2012).

County/ Devolved Government: "Means the transfer of powers from a higher or central order of government to a regional or local order of government" (Dacks, 1990)

Effective Public Service management: "This is a label used to describe a management culture that emphasizes the centrality of the citizen or customer, as well as accountability for results. It captures most of the structural, organizational and managerial changes taking place in the public services of a country, and a bundle of management approaches and techniques borrowed from the private-for-profit sector" (Pollitt, 2003)

Fiscal discipline: "Fiscal discipline is defined as the capacity of a government to maintain smooth financial operation and long-term fiscal health with respect to budgeting and mechanisms to maintain fiscal health and stability over business cycles" (World Bank, 2005).

IFMIS: "A financial management information that tracks financial events and summarizes financial information" (Bartel, 2009)

Public Service: "Public services are those which public bodies (such as central or local government) either provide themselves or commission others to provide" (World Bank, 2005).

Employee performance: "Employee performance is defined as whether a person executes their job duties and responsibilities well" (Mondy et al., 2008).

ABSTRACT

Following implementation of a devolved county government in Kenya in 2010 which followed devolving huge resources, adoption of Integrated Financial Management Information Systems (IFMIS) has been seen instrumental towards effective county management practices. These devolved resources need to be managed prudently for the citizens to enjoy the fruits of devolution. This study sought to assess the contribution of IFMIS on the effectiveness of management practices of Nairobi and Lamu Counties. The specific objective of the study was to; determine the influence of budgeting process automation on effective management practices; to establish the influence of automated county services on effective management practices; to establish whether computerized human resource management has increased effective management practices; and to establish the influence of automated procurement and disposal processes on effective management practices in Nairobi as the biggest County and Lamu being the smallest county. To achieve these objectives, a correlational research design was used with the study population being employees in the county mandated and tasked with the implementation of IFMIS. Primary data was collected and analyzed using SPSS to generate descriptive and inferential statistics to describe the study results. The findings in this study revealed that IFMIS contributes significantly to the effectiveness of county management practices with $p<0.05$ in human resource management (51.6%), service delivery (49.4%), budgeting process (38.7%) and procurement (18%). The study concluded that IFMIS id an important too for effective county management practices and recommended areas for further research among them; establish a model for testing and evaluating the level of success in the implementation of IFMIS and to establish the role of end users on the level of success in the implementation of IFMIS in the County Governments

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CHAPTER ONE: INTRODUCTION

1.1 Background

Kenya adopted a new constitution in August 2010. This constitution was the birth of new system of governance under the devolved system of government. The main aim of devolution was fiscal decentralization, where the Constitution and the County Allocation of Revenue Act, 2013 gave guidelines on how the national cake will be shared between the National Government and the County Governments. In the first financial year into devolution (2013/2014), Kenya Shillings Two hundred and ten billion (210 billion) was allocated to county Governments (CRA, 2013) while 2014/2015 another 226.7 billion was allocated. Counties have been faced with various challenges in absorbing these funds and even prudent spending. This amount needs to be spent prudently in a transparent manner with proper controls. To ensure this, The National Treasury has made it mandatory that all County Governments implement various ERP systems among them being E-Procurement, Integrated Personnel and Pensions Database (IPPD) and the Integrated Financial Management Information System (IFMIS).

The Financial Management Information System (IFMIS) is an electronic public finance management tool that synchronizes the operations from budgeting to implementation of projects including revenue collection, procurement and payments (Rodin-Brown, 2008). IFMIS is designed to allow accountability and transparency in public financial management. It is a tool that aid in prudent budgeting, revenue collection, management and spending of public funds (Rodin-Brown, 2008). Implementation of these systems is faced with a lot of challenges, some real while others are imaginary or lack of goodwill just like any new technology.

Although IFMIS has been seen fundamental in reforming public services sector, the implementation has been faced with a number of challenges that are making it not achieve its intended purpose. These challenges have been identified to fall under technical in terms of ICT infrastructure, administrative –where the management does not support implementation,

legal as well as human resources capacity in terms of training and corruption (Rodin-Brown, 2008; Hendricks, 2012). According to Hove & Wynne (2010), the size and the complexity of IFMIS itself is a challenge and may pose several risks of failure. This may explain the varying contribution of IFMIS towards effective management in the counties in Kenya

The increased importance that organizations and government departments have placed in establishment of ERP systems have seen academicians developing a lot of interest with many research papers generated seeking to understand the implementation challenges, threats/risks, success factors as well as opportunities (Gichoya, 2005 and Wepukhulu, 2013), effects on business process re-engineering as well as effects on organizational control and drift (Ignatiadis & Nandhakumar, 2007). Since devolution in Kenya is still new, there is scarcity of information on how IFMIS implementation has contributed to effective management at the County level.

1.2 Integrated Financial Management Information System (IFMIS)

ERP systems have been used by e-governments to create efficiency and increase cost effectiveness and service delivery to their citizens and other businesses improving intergovernmental relationships within government departments. This is generally called improving service delivery by public sector. One of the ERP systems used by the governments to achieve this is the Integrated Financial Management Information System (IFMIS). IFMIS integrates all government operations from budgeting, budget implementation/execution and post-budget accounting and reporting (Diamond & Khemani, 2005; Rodin-Brown, 2008; Hendricks, 2012). In short, gives summaries of financial transactions and help in tracking financial events, leading to a sound public financial management.

IFMIS comprises of the following modules and systems; "General ledger, Budgetary accounting, Accounts payable and Accounts receivable, and the noncore or other modules as, Payroll system, Budget development, Procurement, Project ledger and Asset module" (Diamond & Khemani, 2005). The system uses an integrated approach where all the date is controlled from recording transactions, data entry, processing and reporting (Diamond & Khemani, 2005; Rodin-Brown, 2008).

1.3 IFMIS in Kenya

IFMIS is one of the many systems and programmes in e-governments and Public finance management (PFM) reforms initiated by many developing countries with a view of ensuring prudent spending of public funds as well as creating efficiency in public sector.

According to The Kenya Vision 2030, there is a need for "a citizen-focused and results-oriented" government which is accountable to its citizenry. The Constitution of Kenya also stipulates clearly the guidelines on how to manage public resources prudently for the common good of all Kenyans. Various legislations have been put in place to support this including the Public Finance Management Act 2012. It is against this legislations and vision that Kenya is deliberately making efforts to implement and streamline public financial management reforms. One such reform is through implementation of IFMIS. According to The IFMIS Re-Engineering Strategic Plan 2011-2013, IFMIS implementation started in 1998 and entrenched in government ministries by 2003. The Re-engineering Strategic plan report indicate that IFMIS has been implemented to connect all G-2-G departments to a main server network so as to have all financial transactions monitored from a central point. Since the enactment of the new constitution, County Governments were created which were not initially part of the initial system and there is hence need to have them implement the IFMIS in order for them to be part of the single network.

County Governments are supposed to implement IFMIS, which will ensure transparency and efficiency from budget making to implementation. The system also ensures that procurement plans, requisitions to payments of suppliers is automated and every budget item has a specific vote making the implementation of projects and government procurements more transparent.

1.4 Research problem

The importance of implementing IFMIS in public institutions cannot be underscored due to its role in creating efficiency and ensuring sound PFM. Implementation of IFMIS systems ensures accountability and transparency as well as effective management of resources and corruption eradication and minimization of fraud (Davenport & Brooks, 2004). IFMIS

implementation is influenced by many factors. Among the key factors identified by many scholars are: - lack of management goodwill, poor ICT infrastructure, inadequate resource allocation, hasty implementation and poor monitoring and evaluation mechanisms (Hendricks, 2012). Contextually, the IFMIS implementation in Kenya counties has not evolved from a crude system without any regulations to an orderly system in all the operations of the counties. With the introduction of information technologies like IFMIS effective management and performance of public corporations directly affects the relative success or partial failure of public organizations in Kenya.

IFMIS and effective public management have drawn much attention among scholars and researchers. For instance, Gallagher (2007) in his study on building fiscal infrastructure in post-conflict societies found that lack of management support and commitment coupled with poor coordination and improper planning led to poor performance in the public sector. Bartel (2006) concluded that resistance to change; poor ICT infrastructure and lack of human resource capacity were key impending proper service delivery in public sector.

According to Mosoba (2012) and Aketch (2013) the Kenyan government has initiated various reforms in the public sector in a bid to ensure efficient service delivery as well as motivated civil service which will be more productive and enthusiastic to serve the citizens. While all the previous studies have focused on the effects of implementation and challenges affecting implementation of IFMIS, few or no studies seem to focus on investigating the effects of integrated financial management information system on effective management among the counties in Kenya. We thus developed this study to fill the existing gap by assessing how implementation of an integrated financial management information system contributes towards effective management practices in Nairobi and Lamu counties.

1.5 Research Objectives

1.5.1 General Objective

The general objective of the study is to assess whether implementation of integrated financial management information system has contributed to effective management practices in Nairobi and Lamu counties

1.5.2 Specific Objectives

The specific objectives of this study are;

I. To determine the influence of budgeting process automation on effective management practices in Nairobi and Lamu counties
II. To establish the influence of automated county services on effective management practices in Nairobi and Lamu counties
III. To establish whether computerized human resource management has increased effective management practices in Nairobi and Lamu counties
IV. To establish the influence of automated procurement and disposal processes on effective management practices in Nairobi and Lamu counties
V. To establish the challenges facing implementation of IFMIS towards effective management practices in Nairobi and Lamu counties

1.6 Research Questions

This study seeks to answer the following research questions:

I. Has automation of the county's budgeting process contributed to effective management practices in Nairobi and Lamu counties?
II. Has the automation of county public services contributed to effective management practices in Nairobi and Lamu counties?
III. Does computerization of human resource management increased effective management practices in Nairobi and Lamu counties?
IV. Has automation of procurement and disposal processes enhanced effective management practices in Nairobi and Lamu counties?

V. Are the Nairobi and Lamu counties faced with IFMIS related challenges towards effective management practices

1.7 Significance of the Study

Policy Makers: These study findings will be of use by policy makers when considering policies on devolution especially in areas of resource allocation to County Governments and management of the same. In addition, they will also influence policy on the management of the struggling counties by ensuring that the challenges hindering efficient service delivery are addressed. This will enable the policy makers support counties in technical capacity as well as in financing to roll out IFMIS in full.

County Authorities Management: The findings in this study will be useful to the county management on how to leverage IFMIS with regard to fiscal management, accountability and transparency, staff performance and efficiency in service delivery. This will enable the counties get value for their money

Government Planners: The study findings may be used for planning purposes since they highlight various challenges faced by counties as they implement IFMIS. Governments can plan around these challenges and allocate resources or have a clear plan of how to overcome them. The findings will also guide the National Government on challenges on implementation of IFMIS hence strategizing on technical assistance for full adoption of IFMIS

Scholars, Researchers and students: This study sought to seal the gaps in literature on the implementation of IFMIS with specific focus on devolved governments. This study adds to the existing literature on IFMIS and public financial management as well as effective service delivery.

1.8 Scope of the study

The study covering Nairobi and Lamu counties was conducted in the year 2016. The respondents were the middle and senior managers in the counties who most suitable to provide the information of this nature due to their strategic role in the county government administration.

1.9 Limitation of the study

The researcher experienced challenges of obtaining all the questionnaires issued as some respondent felt insecure as government information is held confidentially. The respondents however assured that the findings would be held confidentially without indicating names and the results from the study are for academic purposes only.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the theoretical and empirical literature associated with how IFMIS implementation has contributed to effective management practices in Nairobi and Lamu counties.

2.1 Theoretical Literature

Institutional theory emphasizes that institutional environments are crucial in shaping organizational structure and actions (Scott and Christensen 1995, Scott 2001). This theory stipulates that organizational decisions are not only driven by goals of efficiency, but also by social and cultural factors. Institutions operate at multiple levels supported by cultures, structures, and routines

The innovation process in organizations is much more complex revolving around number of individuals who could be supporters and opponents of the new idea. At the firm level (Rogers 1995), individual (leader) characteristics, internal organizational structural characteristics, and external characteristics contribute to organization innovativeness. Individual characteristics describes the leader attitude toward change. While the internal characteristics of organizational structure includes observations. As stipulated by Rogers (1995), in centralized organizations, power and control are concentrated in the hands of a relatively few individuals"; "possession of high degree of knowledge and expertise is referred to complexity "; "formality is the adherence to rules and procedures"; "interconnectedness is the degree to which the units in a social system are linked by interpersonal networks"; "organizational slack is the degree to which uncommitted resources are available to an organization"; "size is the number of employees of the organization". (c) External characteristics of organizational refer to system openness.

2.2 Empirical Literature

Focus on the improvement of public finance, in particular on budget and expenditure management reforms is a 1990 concept in Africa. Due to concerns from the donor community, governments started to critically review the existing systems and processes. With the existing inadequate and outdated systems, introduction of integrated financial management systems

(FMS) was championed in the ‘70s and ‘80s which involved the connectivity of different functions and entities within a shared database provide managers with tools to plan, manage, and control public resources.

IFMIS is highly automated in order to drive: · improved transparency of public sector operations; · rapid expedition of many transactions on real-time basis, improved efficiency of financial controls and other expenditure management procedures; · rapid compilation of data from many sources for improved financial analysis and decision making, improved corporate governance, increased staff productivity, improved consistency of information and improved checks and balances.

To reduce poverty levels and improvements in economic growth effective public expenditure management and good public financial management are key pillars towards efficient and equitable utilization of scarce national resources. Public Financial Management (PFM) is concerned with the management of public money anchored on the budget process (Dick Durevall and Mattias Erlandsson, 2004). Effective management of public finances means that policy makers can take into account available resources and the implications of policy choices. Thus, a requirement for a well-functioning budget process is proper institutions and decision-making processes. The objective of PFM reform is to implement these, or to improve the existing ones. In developing countries, traditionally, public sector financial management intended with circumventing wastage and wasteful spending, and especially, the loss of public money through various forms of corruptions. The rise of New Public Management has significantly reduced the emphasis given to public financial management regularity and integrity (Andy Wynne, 2005).

For effective public sector, many government departments and County Governments have implemented IFMIS geared towards handling financial data efficiently and securely for ease of management by various users. The system is well integrated within the core modules allowing data sharing across administrative entities to promote financial control on real time basis. This has however been faced by the challenge of low bandwidth found in many developing countries (Andy Wynne, 2005).

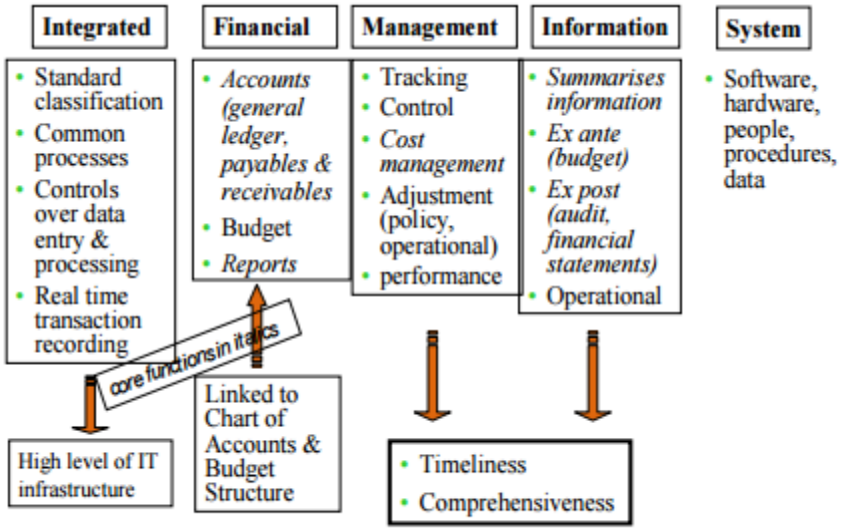

Figure 2.1: Features of IFMIS

(Source: Perrn Penrose "Financial statements and Reporting.'' Unpublished, 2005)

As a catalyst for economic growth and development, Kenya has been in the forefront of IFMIS implementation, (Ajayi & Omirin, 2007). The objective has been to ensure public resources are spent in an efficient and transparent way to improve service delivery. The cornerstones for robust and sound systems have been identified to be strong legal and regulatory frameworks coupled with a competent and productive civil service driven by Public Financial Management (PFM) reforms (Asselin & Srivastava, 2009).

PFM reforms aimed at enhancing accountability and transparency have been undertaken by GoK targeting budget formulation and execution systems, public procurement, revenue collection, internal and external audit, parliamentary oversight, payroll and pensions, public debt and guarantees, accounting and reporting, the macro-fiscal framework and cash management. These reforms have been geared towards strengthening PFM systems for increased transparency, accountability and responsiveness to public expenditure policy priorities while fighting wasteful spending and corruption. Indeed a line of studies indicate a correlation between IFMIS and financial management performance with great improvement on cash handling (Ajayi & Omirin, 2007).

Among the academicians and practitioners, there has been great interest on Public service

management with great focus on devolution, technological progress, and internationalization of businesses and proper financial management (Miranda & Keefe, 2008). These areas of interest have forced management of county governments in Kenya to give a keen focus on county management strategy particularly the devolution policies and responsibilities thus driving additional demand for various kinds of public management services (Peterson et al, 2008).

Automation of Public Financial Management processes remains one of the major reforms characterized with the introduction System (IFMS) on the realization that GoK enhance the pace of reforms and management of cash anchored on technology (GOK, 2011). These reforms are possible as IFMIS summarizes financial information while keeps trail and track (Bartel, 2009). The system is highly customized to suite various working environments as it is modeled around an accounting system to operate according to the needs and specifications of the environment in which it is installed. IFMIS according to Casals (2009) refers to the use of ICT to execute financial operations thus providing support to budget decisions, fiduciary responsibilities, and the preparation of financial reports and statements. In the government circles it addresses the end to end computerization of (PFM) processes which is initiated since budget preparation and execution to accounting and reporting (GOK, 2011).

GoK intimates that IFMIS can help strengthen government's financial controls, thus improving efficiency in provision of government services, driving transparency and accountability in the budget process as well as expediting government operations (GOK, 2011, 2008). GoK's IFMIS is an Oracle based Enterprise Resource Planning (ERP) Software supporting integration of all data and processes from various departments, agencies and ministries into a unified system but securely accessed through a centralized network (Diamond & Khemani, 2008).

According to Ogutu, 2014; Fosser et al., 2008; Heeks, 2007 & Kalling, 2003, implementation of IFMIS improves business operating efficiency through processes reengineering driving costs down to create a competitive advantage. For GoK who is not in profit making agenda, the major reasons for implementing ERP systems is more of efficient and prudent allocation and utilization of resources, transparency and efficient service delivery to the citizens

(Kimani, 2013; Raymond et al., 2005). ERP systems have been found as a great cure to service delivery enhanced by a transparent atmosphere for government operations bringing corruption to a halt (Kimani, 2013; Muhia & Afande, 2015; Kirui, 2012; Ogutu, 2014).

Kenya has implemented a number of ERP systems including E-procurement for streamlining transparent and efficiency in GoK procurement activities which will eradicate corruption (Korir, Afande & Maina, 2015; Muhia & Afande, 2015), Local Authorities Information and Financial Operations Management (LAIFOMS) meant to streamline service delivery by the the defunct local authorities meant to ensure prudent allocation of resources and as a PFM tool (Waema & Mitullah, 2007; Ochara, 2010; Kirui, 2012); Integrated Payroll Personnel Database (IPPD) processing and managing payroll (Midida, Gakure & Orwa, 2013) and Integrated Financial Management Information System (IFMIS) making it easier to obtain reports , track expenses and payments within and without the government systems (Odolo & Gekara, 2015;)

County Governments have been dogged with a myriads of challenges that involve corporate governance challenges, revenue collection, expenditure allocation, wanting service delivery as well as redundancies amidst strikes. Notable IFMIS problems have been cited by some scholars touching on differing data classification for recording financial events; Internal controls over data entry, transaction processing, and reporting; and common processes for similar transactions and a system design that eliminates unnecessary duplication of data entry in cash management (Diamond & Khemani, 2008). Provision of timely, accurate, and consistent data for cash management and budget decision-making has also been questioned by users who note that while IFMIS has been considered to be necessary, it has weaknesses that need to be addressed Bartel (2009).

Salem, 2016;Raus et al., 2010; Kaaya, 2004, have concluded that IFMIS is a great vehicle towards efficient service delivery in governments setups as the today citizen requires the public sector to operate in a more transparent and efficient manner calling for them to innovate on how to serve the public better. This has been a key driver towards adoption of ICT in the form of e-governments as the most efficient and cost-effective way to be transparent and fight corruption (Tarus, Gichoya, & Muumbo, 2015). Part of the reforms anticipated in Kenyan government is a drive for prudent utilization of resources, efficiency in services

delivery as well as transparency and accountability which has brought in place implementation of various ERP systems (Kaaya, 2004; Muhia & Afande, 2015).

E-citizen platform has been introduced in Kenya in the recent past to widen the tax net by eliminating historical bottlenecks and corruption among the various government ministries, departments and agencies. NTSA driving the road transport department has indeed revolutionized the transport systems which is done online. With e-government also the procurement departments of various government ministries are all online through the system known as e-procurement (Muhia & Afande, 2015). These efforts all aim at ensuring efficiency in public service. Huduma Kenya roll out in all the 47 counties is also a great milestone towards the computerization of GoK operations with only 7 counties remaining. Reforms to hasten the investor and public confidence, proper use of public finance management as well as curbing corruption drove the implementation of IFMIS in Kenya national government and by far extend it to county governments since 2013 on devolution.

Karanja & Ng'ang'a, 2014; Ajayi & Omirin, 2007, posit that sound PFM reforms at the county level have identified as strategic pillars in fighting against wasteful spending, inefficiency and corruption. In view of this, Integrated Financial Management Information System (IFMS) was the ERP of choice by the Kenyan Government to achieve sound PFM (GOK, 2011) thus ensuring lasting transparency, accountability and responsiveness to public expenditure policy priorities. The users at the county level have been enabled to access the system and carry out different functions in different locations key among the capabilities include; to generate reports such as balance sheets, sources and uses of funds, cost reports, returns on investment, aging of receivables and payables, cash flow projections, budget variances, and performance reports of all types at a click of a button (GoK, 2011; Hendricks, 2012). With regard to business process re-engineering (BPR) principle, implying process automation IFMIS has been seen as a driver to drive improved public service delivery (Ziemba & Oblak, 2015). This has however been opposed in civil service due to uncertainties of job cuts leading to low adoption and work arounds to beat the system.

2.3 Conceptual Framework

Conceptual framework is a logically developed and described network of interrelationships among variables of study that tries to explain the theory underlying these relationships, their nature as well as direction of these relationships. The conceptual framework shows how the relationship of the independent variables in this study relate to the dependent variable graphically as shown below.

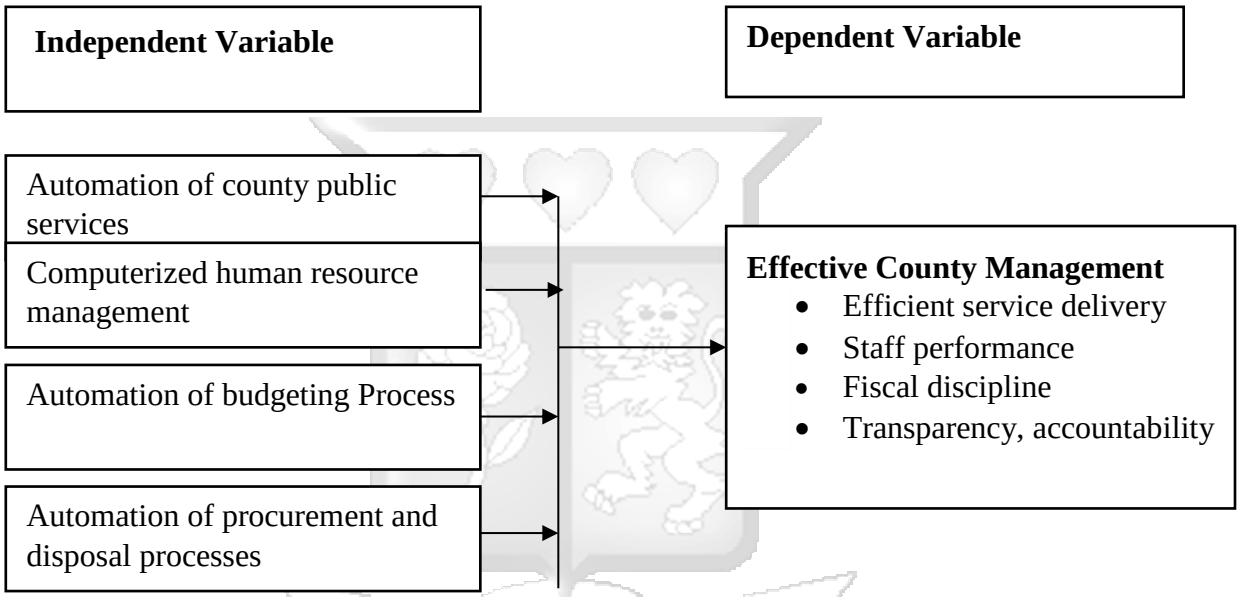

Figure 2.2: Conceptual Framework (Authors Construct)

2.4 Summary of Literature

From the literature reviewed in this chapter, various scholars have addressed the role of IFMIS in management of country resources. Many of the studies appreciate that effective country management is critical regardless the stage of a country's economic growth. There however remain unraveled challenges on the full implementation of IFMIS inhibiting efficient utilization of countries' resources as well as effective management. A critical review of the literature show that several conceptual and contextual research gaps exist in the effects of IFMIS implementation on the effective management at the county governments particularly in the developing countries.

2.5 Research Gap

A key outcome from the literature reviewed in this chapter is the fact that integrated financial management information system has been faced with a number of challenges even though various studies appreciate the IFMIS role towards effective management practices.

Though there are a number of research papers on the challenges of IFMIS implementation in Kenya, most of the research covers the developed economies with very little literature existing on IFMIS contribution towards effective management at the county governments in Kenya. It is further possible to argue that IFMIS contribution towards effective management in developed countries is different from countries like Kenya, which are still developing and faced with other unique challenges especially the fact that devolution is a new system to them. It is due to the scarceness of information in this field that this study sought to seal the gaps gap by assessing the implementation of IFMIS and its contribution towards effective management in Nairobi and Lamu counties.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a detailed methodology of how the study. Specifically, it gives describes the design used to collect the data, how the sampling was done, instruments applied as well as data analysis.

3.2 Research Design

Research design has been defined as a plan and structure of investigations that's conceived and applied to help a researcher answer research questions (Schindler, 2007; Kerlinger, 1986). Other definitions include, arrangement of how one collect and analyze data with the aim actualizing research purpose (Kothari, 2004). This study will employ correlational research design to establish the relationship between implementation IFMS and effective county management. This design has been employed in previous studies and shown to be effective in exploring and explaining relationships between various variables (Asaolu & Ogunmuyiwa; 2010).

3.3 Population

The population of the study was composed of employees interfacing with IFMIS from Nairobi and Lamu counties existing in the human resource database as at 30th February 2016. The two counties were chosen on the basis of their budgetary allocation given that Nairobi receives the highest allocation from CRA with Lamu receiving the lowest and hence these characteristics would provide a representative sample catering the richly funded counties as well as less funded counties. The target population comprised of the senior and middle management staff from counties serving in human resource, front office, finance as well as procurement departments from the Lamu and Nairobi County Governments.

Table 3.1: Population

Cadre	Lamu County	Nairobi County	Number of employees	Population size%
Senior management	36	87	123	20
Middle management	93	408	501	80
Totals	**129**	**495**	**624**	**100**

3.4 Sampling Method and Sample Size

The study used purposive and random stratified sampling method. The counties were selected purposively due to their suitability to provide the required research information. Nairobi County was selected due to its size being the largest county in Kenya while Lamu County received the least funds from National Government in year 2015. The staff in the two counties were stratified into two strata; that of senior and middle management. From the two strata, target population, a sample was drawn.

The population of study was less than ten thousand and according to Mugenda and Mugenda (2003), a population of less than ten thousand elements is defined as a small population. They recommend a formula for determining appropriate sample from a small population as demonstrated by equation (i) below.

$n=Z^2*p*(1-p)/d^2$ ..... Equation (i)

Where;

n =sample size of a big population i.e more than 10,000,

Z=Normal distribution Z value score, (1.96), p=Proportion of units in the sample size possessing the variables under study, where for this study it is set at 50% (0.5), d= Precision

level desired for the study (0.05), N= 524 subjects. Based on the equation (i), the sample of a big population size can be established as;

$$n = \frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} = 384$$

According to Mugenda and Mugenda (2003), with a small population of less than 10,000 like the one in this study, the required sample size was smaller requiring the researcher to recalculate the final sample estimate, n_0 using equation (ii) below.

$$n_0 = \frac{n}{1+ (n-1)/N} \quad \text{.....Equation (ii)}$$

Where:

n_0 = the desired sample size (when the population is less than 10,000)

n = the desired sample size (when the population is more than 10,000)

N = the estimate of the population size

The reduced sample size is hence established as; 384/(1+((384-1)/624) = 238

The target sample size of 238 constituted 38% of the target population and was adequate for research based on the recommendation by Kothari (2004) who assert that a sample of at least 10% to 15% is able to lead to meaningful generalizations about the general characteristics of a study population.

Table 3.2: Sample Size

Cadre	**Lamu**	**Nairobi**	**Sample size**	**Sample size%**
Senior management	10	37	47	20
Middle management	38	153	191	80
Totals	**48**	**190**	**238**	**100**

3.5 Data Collection Instruments and Procedure

The study used primary data collected by use of structured questionnaires designed to gather information regarding the issues addressed in the study. Questionnaires was used because they are simple to administer and inexpensive as well as easy to analyze (Kothari, 2009; Orodho, 2005).

The questionnaires to the respondents were accompanied by a forwarding letter and an introduction letter from the University. An experienced research assistant was used to drop and pick later the questionnaires. Well-spaced telephone calls and email were used to follow up the return of questionnaires to increase the response rate.

3.6 Pilot Test

A pilot test is important in every study so as to test if the data collection instruments are appropriate to exude the right information and easily understood by the respondents (Kothari, 2011). It is recommended that any research start with a pre-test pilot study for the above reason among others. This is a pre-test done prior to the commencement of data collection to determine the accuracy of the research instruments (the questionnaires) that was applied in obtaining desired Pre-testing the instrumentation and the entire research design permits refinement before the commencement of the study. In particular, pilot testing helps the researcher to identify any weaknesses in the study design as well as in the research instruments to be used and hence opportunity to rectify them at an early stage. A pilot test is done on the questionnaires to ensure consistence, clarity and free from ambiguity by all. The feedback from the pilot study was used to improve the quality of instrumentation that will subsequently be used during data collection and analysis.

Validity and Reliability tests were performed on the data. By reliability we mean how well the study can be replicated, how stable and consistent the information in the questionnaire is (Jack & Clarke, 1998). In this study Cronbach's alpha was used to measure the reliability of the

information given in the questionnaire (Cronbach, 1951). In this study, the questionnaire was tested on 10% of the sample as recommended by Kothari (2004) who state that 5% to 10% of the sample can be adequate for running reliability tests. The pilot was done on 20 randomly selected respondents who did not and were not to take part in the final study to test the reliability of the instruments. The results obtained from the 20 questionnaires were input into SPSS and Cronbach reliability test performed. Internal consistency reliability is said to be high if the Cronbach's alpha coefficient is closer to 1. According Cronbach (1951) as cited in Sekaran (2003) Cronbach coefficient above 0.7 is recommended for general studies while that above 0.8 is recommended for clinical studies (Kurpius& Stafford, 2006). This study used a cut-off point of 0.7 since it's not a clinical study.

The validity of a research instrument refers to its ability to measure what it was intended to measure (Bryman & Cramer 1997); i.e. how well the instruments help explain the situation on the ground. To obtain this, the questionnaire is supposed to be divided into sections such that each section addresses a specific objective, as was the case in this study in line with the conceptual framework. In our study, the questionnaire was discussed with randomly selected managers for their input and their views evaluated and incorporated into the questionnaire to enhance content validity of the questionnaire.

3.7 Data Analyses

Data analysis is the process of examining the collected information or data in a bid to make conclusions and inferences there from. Qualitative data was condensed by editing, paraphrasing and summarizing in order to derive meaning from it. Data was coded using the content analysis technique, and thereafter put into theme categories and tallied in terms of the number of times it occurs. Data will then be tabulated into respective themes. This process according to Frankel & Wallen (2000) involves reading through the interviews, transcripts and other sources of data, developing codes, coding the data, and drawing connections between the various discrete pieces of data.

3.7.1 Statistical Tests

Statistical techniques including, Correlation Analysis and ANOVA was used. Statistical Package for Social Sciences (SPSS) was used to facilitate analysis, as it is powerful with cross-sectional data. The software is a comprehensive system for data analysis and can take data from any type of file and will use it to generate tabulated reports, charts, compare means, correlation and many other techniques of data analysis (Microsoft Corporation, 2003). Correlation tests measures the extent of interdependence where two variables are linearly related (Lucy, 1996) was done. If variables are correlated, then a change in one variable is accompanied by a proportionate change in another variable. Correlation coefficient (r) is a measure of correlation between two variables. If variables are not correlated, r = 0, if correlated, then r = 1. If the value of r is close to one, then it shows there is a strong correlation between the variables. If the value of r is close to zero, then the correlation is weak.

Analysis of Variance (ANOVA), is a statistical technique specially designed to test whether the means of more than two quantitative populations are equal (Levin and Rubin, 1994). This is done via the mechanism of the F-test for testing for the significance of the difference between two variances. This study will do this test because it allows one to analyze two or more groups and thus test for significant difference between means. Compared with using multiple t-tests, ANOVA requires fewer measurements to discover significant effects. ANOVA is a powerful tool for determining if there is a statistically significant difference between two or more sets of data (Pattern, 2002). ANOVA test is also useful in measuring variations within group. However, with the help of the SPSS software results for the above statistical tests was automatically computed and displayed in tabular form.

3.7.2 Regression Models

Quantitative data will also be subjected to measures of dispersion and symmetry using inferential statistics. In order to show the relationship between the independent and dependent variables, the linear regression method was adopted. In linear regression, equation 3.1 model summarizes the relationship between the dependent and independent variables.

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X4 + e} \text{..... (Equation 3.1)}$$

Where:

i. Y = the value of the dependent variable of effective management in Counties
ii. $\{\beta_i; i=1,2,3,4\}$ = The coefficients for the various independent variables
iii. Xi = Various independent variables

Specifically: -

Y = Effective County Management

X_1 = Automated budgeting

X_2 = Automated service delivery

X_3 = Computerized Human Resource Management

X_4 = Automated procurement and disposal process

To test the significance of the model, F-test was used at 95% confidence interval. The p-values for the F-statistic was were calculated and used to test the level of significance. Where the p-value of less that 0.05 was obtained, we concluded that the model was significant and has good predictors of the dependent variable and that the results are not spurious (based on chance) and where p-value was greater we failed to reject the null hypothesis and concluded that we did not have enough information to explain the variations in the dependent variables using the model.

Table 3.4: Summary of Models

Objective	Research Question	Testing Equation	Interpretation
To determine the influence of automated budgeting process on effectiveness of county management practices in Nairobi and Lamu counties	Has implementation of automated budgeting process enhanced effectiveness of county management practices in Nairobi and Lamu counties?	$Y = \beta_0 + \beta_1 X1 + e$	A positive coefficient B1 indicates implementation of IFMIS has enhanced effectiveness of county management practices in Nairobi and Lamu counties
To establish whether automated county service delivery has improved the effectiveness of county management practices in Nairobi and Lamu counties	Has automated county service delivery improved the level of service delivery in Nairobi and Lamu counties?	$Y = \beta_0 + \beta 2X2 + e$	A positive coefficient B3 indicates that automated county service delivery has improved effectiveness of county management practices in Nairobi and Lamu counties
To establish whether computerized human resource management has increased effectiveness of county management practices in Nairobi and Lamu counties	Has implementation of computerized human resource management in Nairobi and Lamu counties?.	$Y = \beta_0 + \beta_3 X3 + e$	A positive coefficient B3 indicates that i computerized human resource management increases effectiveness of county management practices in Nairobi and Lamu counties
To establish automated procurement and disposal process has enhanced the effectiveness of county management practices in Nairobi and Lamu counties	Has implementation of IFMIS increased the effectiveness of county management practices in Nairobi and Lamu counties?	$Y = \beta_0 + \beta_4 X_4 + e$	A positive coefficient B4 indicates that implementation of IFMIS increased the effectiveness of county management practices

Objective	Research Question	Testing Equation	Interpretation
To establish the joint effect of the 4 independent variables on the effective county management practices	Is there a joint effect of the 4 independent variables on the effective county management practices	$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 ++ \beta_4 X_4 + e$	Positive coefficient Betas indicates that implementation of IFMIS increased the effectiveness of county management practices

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

The study assessed whether implementation of integrated financial management information system has contributed to effective management practices in Nairobi and Lamu counties. The collected data was coded and keyed into Statistical Package for Social Sciences (SPSS Version 20). Statistical tests were carried out to qualify the data for internal consistency, validity. Quantitative data was analyzed and presented in terms of frequencies and percentages. The data was presented in terms of background information of the respondents, the dependent variable and the objectives of the study respectively.

4.1: Preliminary Analysis of Study Results

4.1.1 Response Rate

Of the 216 questionnairies sent out to the respondents, 160 were returned fully filled representing 67% response rate. The response rate in Lamu County was 74% while that of Nairobi Nairobi was 60%. Mugenda and Mugenda (2008) said that a response rate of 50% is acceptable for analysis and publication hence the response rate was considered suitable for analysis.

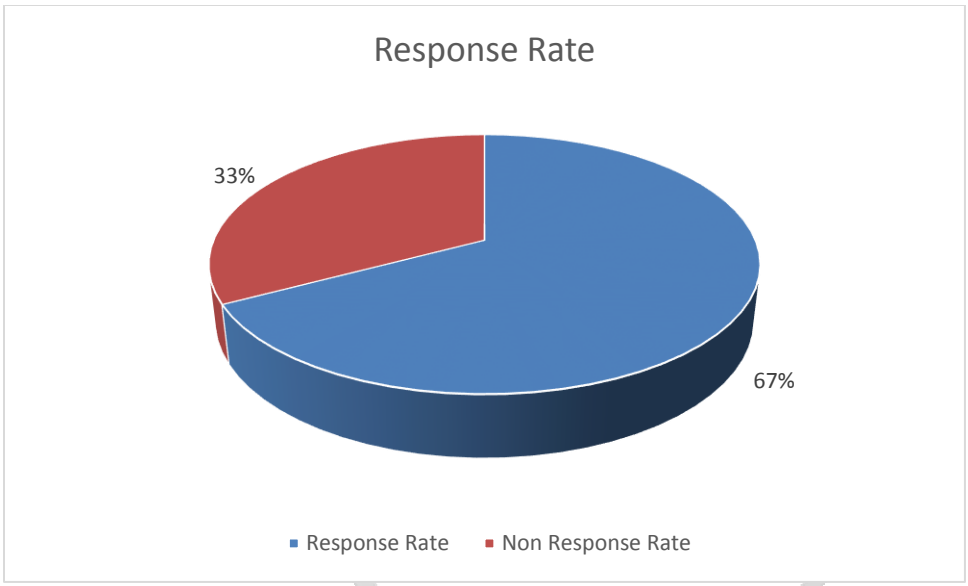

Figure 4.1: Questionnaire Response Rate

4.1.2 Level Education

Only 10% had post graduate level education with the majority (45%) having undergraduate level education. The departments that responded were evenly distributed among Finance, Accounts and Procurement. There were slightly more male (58%) than female respondents as seen in figure 3 below

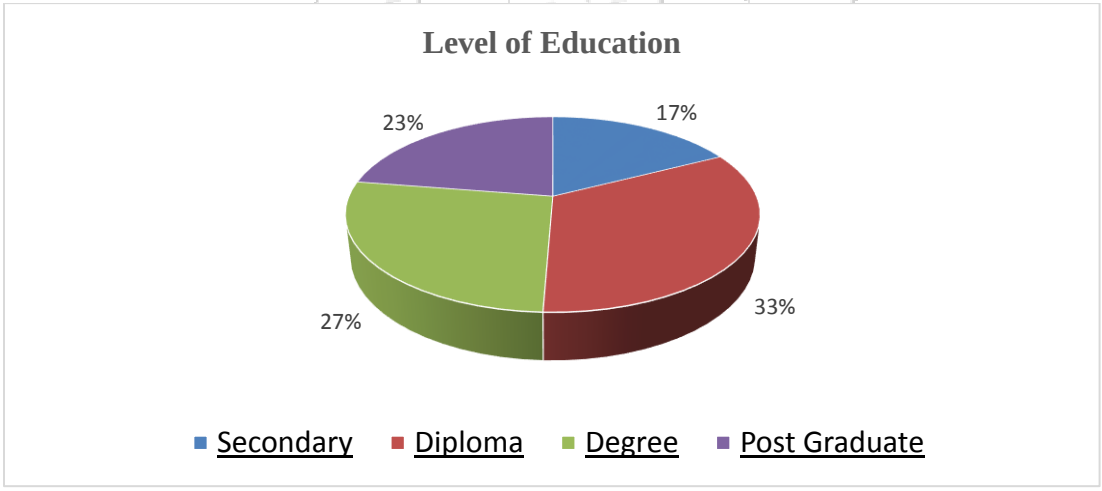

Figure 4.2: Level of Education of the respondents

4.1.3 Gender

Majority of the respondents were male standing at 58% with females accounting to 42%. The study shows likelihood that males dominate most of the government jobs in Kenya. The study findings correlates well with that by Jacobs (1994) who concluded that there continues to have a concentration of girls and women in a limited range of fields and hence a subsequent under-representation in traditionally male-dominated professions

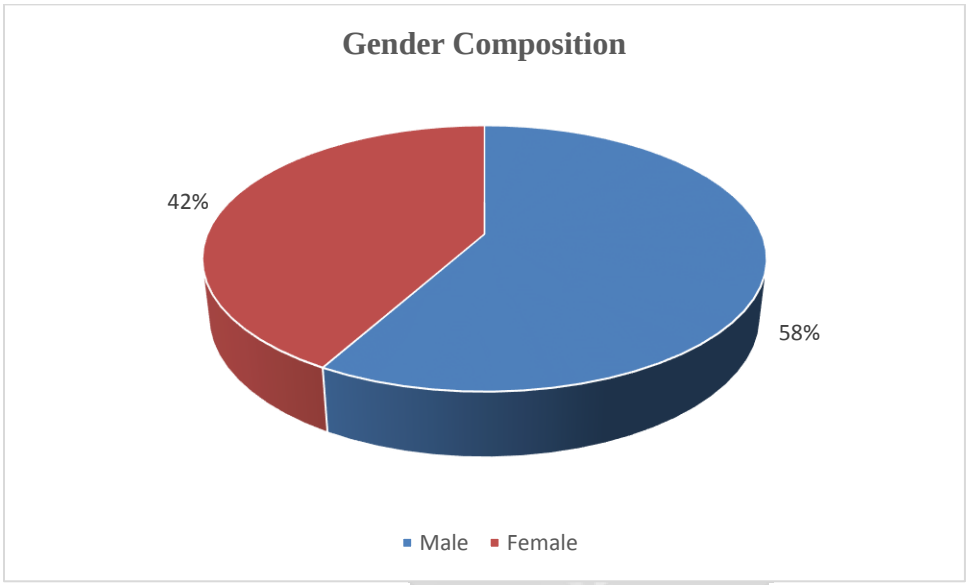

Figure 4.3: Gender Composition of the respondents

4.1.4 Age of the Respondents

On the age of the respondents, most of the respondents were in the age group 50 years and above with the minority standing at 25% being less than 35 years. 75% of the respondents were aged between 41-49 and over 50 years. The findings in this study reveal that the workforce in Lamu and Nairobi counties is composed of ageing employees and that the youthful and techy savvy or the millennial generations are under presented.

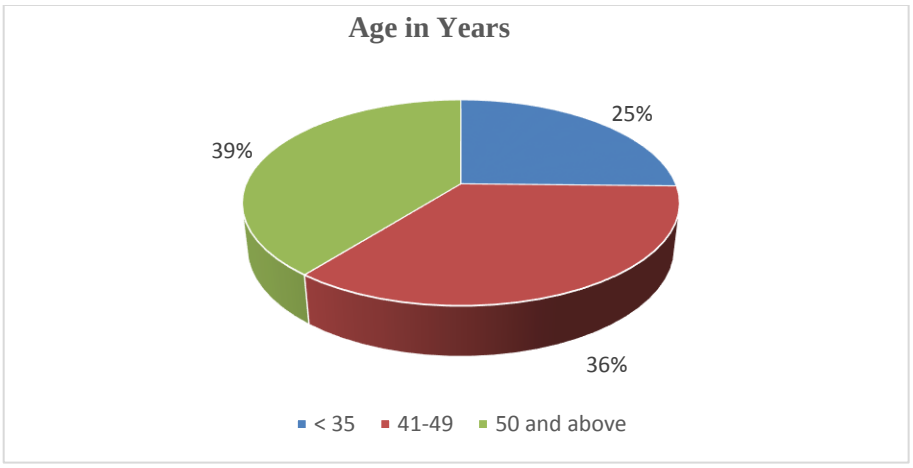

Figure 4.4: Age of the respondents

4.1.5 Years Worked

On the years worked for the Government, most of the respondents standing at 95% indicated that they have worked for the Government for more than five years while a mere 5% indicated that have worked for the Government for a period less than 5 years.

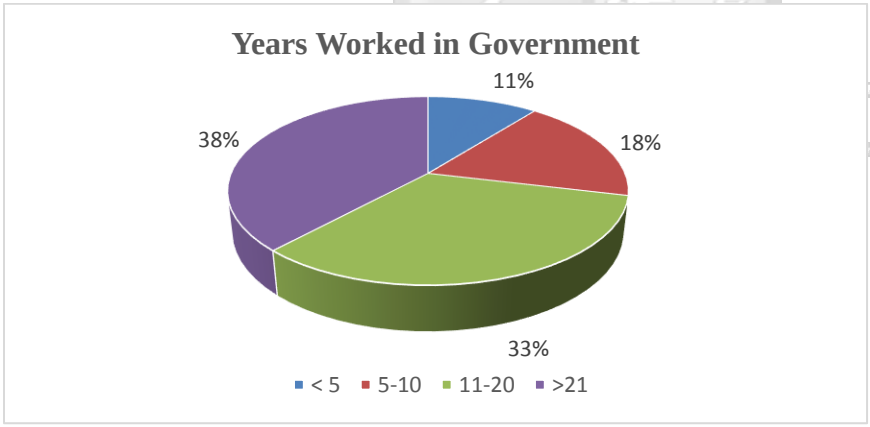

Figure 4.5: Years Worked for Government

4.1.6 Department Worked For

Majority of the employees standing at 41% worked in human resource related department, employees in finance department formed 2%, Front Office formed 33% with procurement staff comprising of 24% of the respondents. The majority of the staff worked in human resource department.

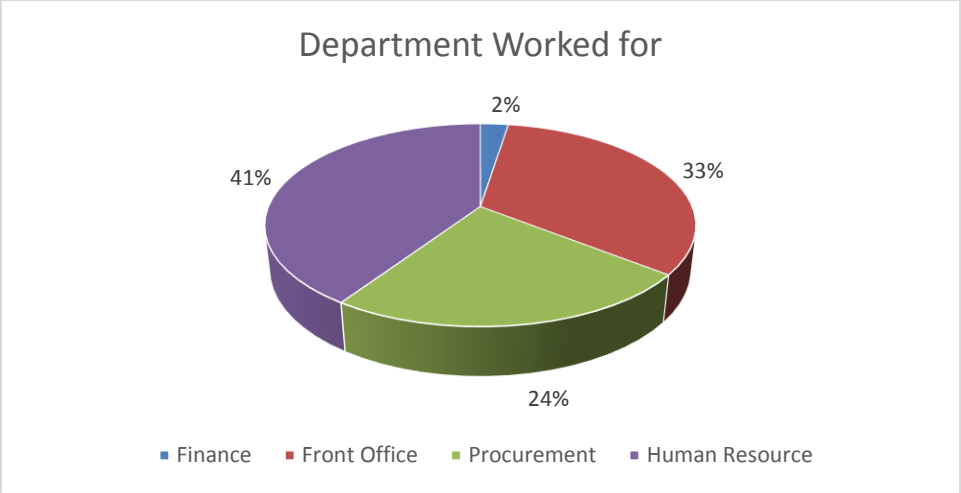

Figure 4.6: Department Worked for

4.1.7 Experience with IFMIS

Out of the respondents in this study, 50% of the respondents reported to have interacted with IFMIS the shortest period during their employment life ranging between 1- 2 years, as the counties were only 3 years old. Only 14 % had over 5 years of experience with IFMIS with 36 % of the respondents having worked with IFMIS for 2- 5 years as these had been deployed from national Government.

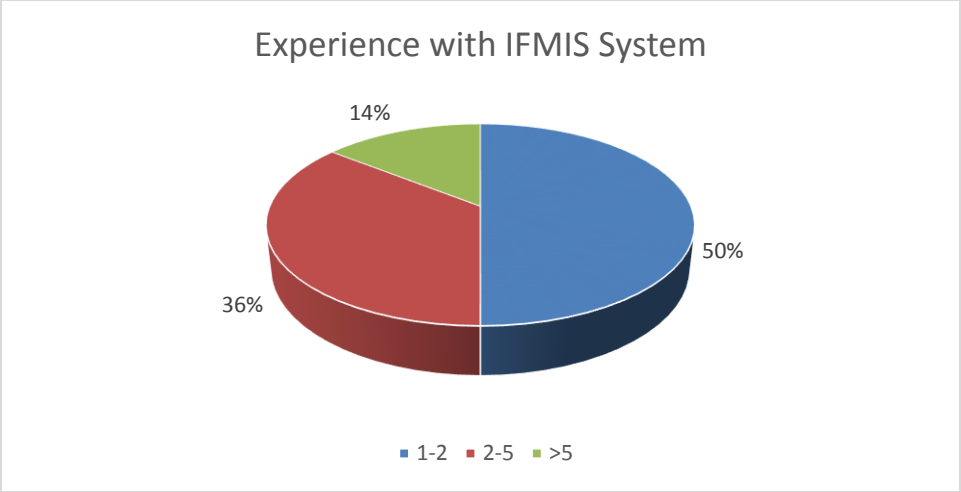

Figure 4.7: Experience with IFMIS

4.2 Diagnostic tests

4.2.1 Reliability tests

Reliability test was done on the variables used in this study so as to check for internal consistency. Cronbach alpha coefficient set at 0.7 was used to measure the reliability in this study and the findings were presented in Table 4.1. A Cronbach alpha coefficient of 0.7 indicates that the data collection instrument is reliable for newly developed questionaries' (Sekaran, 2003). From the study results, Cronbach Alpha Coefficients were above the .7 threshold concluding that the data used was reliable as it had internal consistency.

Table 4. 1: Reliability Tests

		Cronbach Test	
Variable	**Number of Items**	**Result**	**Comment**
IFMIS	9	0.834	Reliable
Fiscal Discipline	6	0.877	Reliable
Service Delivery	7	0.868	Reliable
Staff Performance	6	0.824	Reliable
Corporate Governance	8	0.827	Reliable

4.2.2 Multicollinearity tests

According to Green (2000), identification of multicollinearity in a model is important and is tested by examining the tolerance and the variance inflation factor (VIF) diagnostic factors. The variance inflation factor (VIF) measures the impact of multicollinearity among the variables in a regression model. Green (2000) concluded that even though there is no formal criterion for determining the bottom line of the tolerance value or VIF, tolerance values that are less than 0.1 and VIF greater than 10 roughly indicates significant multicollinearity; a conclusion supported by Tavakol and Dennick (2011) and Gujarat (2009). The results obtained indicated multicollinearity was not a concern in this study as all the VIF results were greater than 0.1 but less than 10.

Table 4.2: Multicollinearity Check

Model		Collinearity Statistics	
		Tolerance	VIF
1	Automation of Budgeting	.940	1.064
	Computerized HRM	.445	2.249
	Automated county services	.591	1.691
	Procurement & Disposal	.521	1.920

4.2.3 Auto correlation tests

A Durbin-Watson test was used to detect the presence of autocorrelation between the variables and this produced a value of 1.748. Both Verbeek (2004) and Gujarat (2009) agree that, “if the Durbin-Watson value is less than 1.5 or greater than 2.5, there may be reason to worry”. Verbeek (2004) further concluded that the closer the value is to 2, the better it is. This study concluded that the variables studied were not auto correlated.

4.2.4 Independent Sample Test

A t-test was conducted to help in comparing whether there existed different average values from the responses got from Nairobi and Lamu Counties. From the results indicated in table 4.3, the Statistical significance shows that there is no difference between sample averages likely to represent an actual difference between populations. This implied that the joint results generated from the Lamu and Nairobi County respondents are not statistically significantly different given the significance results equal to 0.79 is greater than 0.05 confidence level used in this study. The t test results also lied between the lower and upper limits of the 95% Confidence Interval

Table 4.3: Independent Sample Test

	Levene's test for Equality of Variances		**t test for Equality of Means**					**95% Confidence Interval of the Difference**	
	F	**Sig.**	**t**	**df**	**Sig (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**Lower**	**Upper**
			-1.163		0.269	-1.01329	1.01329	-3.40881	1.05166
IFMIS	0.075	0.79	-1.174		0.265	-1.17857	1.00398	-3.38922	1.03208

4.3 Descriptive and Inferential Statistics

4.3.1 Status and influence of IFMIS in Nairobi and Lamu Counties

On the status and influence of IFMIS in Nairobi and Lamu Counties, the scores for the 5 likert scale were analyzed and averaged to get the indication for agreement or otherwise. The higher the score the higher the agreement with the statement and the lower the score there was an indication of disagreement. On average as shown in table 4.3, 35% of the respondents agreed with the status of implementation of the IFMIS in the counties. Most of the respondents

however appreciated the potential role IFMIS is likely to play on the effectiveness of county service management despite the implementation status. Noteworthy is the indication that even though Nairobi and Lamu counties have implemented IFMIS, there continues to be a number of notable manually generated and completed transactions despite the existence of the IFMIS. A significant number of respondents totaling 12% indicated that there is no goodwill of IFMIS implementation from the county management despite the requirement by National Treasury as well as the presidential directive to close on IFMIS implementation. Majority of the respondents indicated that the transactions that are financial in nature continue to involve manual intervention even though the systems are stable at 75% coupled with ICT connectivity standing at 72% within the two counties studied.

Table 4.3: Status of IFMIS implementation in Nairobi and Lamu Counties

Statements	**Average %**
1. There is ICT connectivity in the county	72%
2. The IFMIS system is regularly stable (Down time)	75%
3. IFMIS processes match with our manual processes	42%
4. All activities in the departments run within the IFMIS system	7%
5. Exchequer budget releases of funds on the IFMIS coincide with manual funds release process	47%
6. All payment approvals are carried out in IFMIS	10 %
7. There is management goodwill to implement IFMIS	12%
8. We run manual payments	80%
9. Payment vouchers are prepared and approved in IFMIS before payment	21%
10. Purchase orders are generated exclusively through IFMIS	15%
11. LPOs and Invoices are manually captured onto the IFMIS system	22%
12. IFMIS integrate well with other existing ERPs	21%
Average	**35%**

As indicated in table 4.4; majority of the respondents standing at 62% agreed with the role of IFMIS towards effective county management in Nairobi and Lamu Counties. Only 38% of the respondents disagreed on the role of IFMIS towards effective county management.

Table 4.4: Automation of County Public Services

	Frequency	Percentage	Cumulative Percentage
Very Large	23	14%	14%
Large	28	18%	32%
Moderate	48	30%	62%
Little	51	32%	94%
Very Little	10	6%	100%

4.3.2 Influence of Budgeting Process Automation on Effective Management practices

The analysis of the results on the influence of budgeting process automation on effective management practices in Nairobi and Lamu counties is shown in table 4.5 below. The results indicates that implementation of automated budgeting process in the two Counties has little influence on effective management practices. Up to 59% of the respondents indicated that IFMIS has very little or little influence on fiscal discipline. 21% of the respondents indicated that IFMIS influence fiscal discipline while a hooping 20% indicated a moderate fiscal influence.

Table 4.5: Influence of Automated Budgeting Process

	Frequency	**Cumulative Percentage**	
Very Little	47	29%	29%
Little	48	30%	59%
Moderate	32	20%	79%
Large	19	12%	91%
Very Large	14	9%	100%

The researcher carried out a linear regression analysis to find out the influence of budgeting process automation on effective management in Nairobi and Lamu counties. The findings as shown in the model summary Table 4.6 indicated that R^2 for the first model was .387, meaning that IFMIS implementation contributed 38.7% on effective fiscal management discipline in the Nairobi and Lamu Counties.

Table 4.6: Coefficient of Determination

Model	R	R^2	Adj. Square	Std. Error of the Estimate
1	0.622	0.387	0.382	4.720

The findings of this study sought to answer the research question

Has implementation of automated budgeting process enhanced effectiveness of county management practices in Nairobi and Lamu Counties?

From the study results, automated budgeting process has enhanced effectiveness of county management practices in Nairobi and Lamu Counties with 38.7% variations in effectiveness of county management practices being explained by the automated budgeting process.

The ANOVA Table 4.7 shows that the predictor variable, IFMIS has a P-value equal to .000. This demonstrates that the variable in this model is statistically significant in influencing the performance of county management in the Nairobi and Lamu Counties considering that its P-value is less than 0.05 at the 95% level of confidence.

Table 4.7: Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2090.476	1	2090.476	93.840	.000
	Residual	3319.285	159	22.277		
	Total	**5409.762**	**160**			

The coefficients table 4.8 shows the relationships between the coefficients of automated budgeting process and effective county management in Nairobi and Lamu counties. Based on the coefficient table results, the study shows that for every unit increase in IFMIS of effective of county management increases by 1.120 units. i.e. $Y = 17.345+.1.12X_1$. The P-values are less than 0.05, meaning that IFMIS is statistically significant in explaining the change in county management practices among the Nairobi and Lamu Counties.

Table 4.8: Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.345	2.264		7.661	.000
	Automation of Budgeting	1.120	.116	.622	9.687	.000

The findings in this study are in agreement with those of other scholars in Kenya (Ajayi eta al, 2007) who found out that IFMIS implementation is critical in order to build a strong Public Financial Management (PFM) system. IFMIS is a catalyst for economic growth and development that ensures the government and its departments raise, manage, and spend public resources in an efficient and transparent way with the aim of improving service delivery (Ajayi eta al, 2007). A further study by Peterson et al. (2008) found out that IFMIS could enable prompt and efficient access to reliable financial data and help strengthen government's financial controls, improving the provision of government services, raising the budget process to higher levels of transparency and accountability, and expediting government operations. This is similar to the findings of this study that automation of budgeting process contributes significantly to effectiveness of county management practices.

4.3.3 Automation of County Public Services on Effective Management Practices

The analysis of the results on the influence of automation of county public services on effective management practices in Nairobi and Lamu counties is shown in table 4.9 below. The results indicate that automation of county public services has little influence on effective management practices. Up to 64% of the respondents indicated that IFMIS has very little or little influences on service delivery. Only a mere 15% of the respondents indicated that IFMIS influence service delivery while a 20% of the respondents indicated a moderate improvement has been noted on the service delivery. These results could be interpreted that the counties may not be appreciating the role of IFMIS in transforming counties operations.

Table 4.9: Automation of County Public Services on Effective Management Practices

Scale	Frequency	Percentage	Cumulative Frequency
Very Little	50	31%	31%
Little	53	33%	64%
Moderate	32	20%	84%
Large	15	9%	94%
Very Large	10	6%	100%

A linear regression analysis was carried out to find out the influence of automation of county public services on effective management practices in Nairobi and Lamu counties. The findings as shown in the model summary Table 4.10 indicated that R^2 for the model was 0.494, meaning that IFMIS implementation contributed 49.4 % on service delivery in the Nairobi and Lamu Counties.

Table 4.10: Coefficient of Determination

Model	R	R2	Adj. Rsquare	Std. Error of the Estimate
1	0.703	0.494	0.488	6.123

The findings of this study sought to answer the research question

Has the automation of county public services contributed to effective management practices in Nairobi and Lamu counties?

From the study results, automation of county public services has contributed effectiveness of county management practices in Nairobi and Lamu Counties with 49.4% variations in effectiveness of county management practices being explained by the automation of county public services.

The ANOVA Table 4.11 shows that the predictor variable, IFMIS has a P-value less than 0.05. IFMIS variable in this model is statistically significant in influencing the effectiveness of county service management among the Nairobi and Lamu Counties considering that its P-value is less than 0.05 at the 95% level of confidence.

Table 4.11: Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3265.795	1	816.449	55.599	.000[b]
	Residual	2143.967	159	14.685		
	Total	5409.762	160			

Table 4.12 shows the relationships between the coefficients of IFMIS implementation on service delivery effectiveness in Nairobi and Lamu counties. Based on the coefficient table results, the study shows that for every unit increase in automation of county public services, effectiveness in county public management increased by 0.207 units; i.e. Y = 7.147 +0.207X2. The P-values are less than 0.05, meaning that IFMIS is statistically significant in explaining the change service delivery in Nairobi and Lamu Counties.

Table 4.12: Coefficient Results

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.147	2.403		2.974	.003
Service Delivery	.207	.069	.162	3.016	.003

The study findings are in harmony with those of (Salem, 2016; Raus et al., 2010; Kaaya, 2004) who concluded that IFMIS have been seen as a vehicle to facilitate access to and provision of government services to people. IFMIS has enhanced efficiency, cost-effectiveness, and transparency in public service.

Further, the study findings are similar to those of (Ogutu, 2014; Fosser et al., 2008; Heeks, 2007; Kalling, 2003) who concluded that the main reason for implementing an IFMIS is to improve business operating efficiency by improving processes and cutting down costs hence creating a competitive advantage. In their study, (Kimani, 2013; Muhia & Afande, 2015;

Kirui, 2012; Ogutu, 2014) concluded that in Kenya, various government departments/ministries, parastatals and all county governments have implemented various ERP systems in a bid to improve service delivery and create a transparent atmosphere for government operations and reduce corruption. These findings tally well with those of this study

4.3.4 Computerized Human Resource Management and effective management practices

The analysis of the results on whether computerized human resource management has increased effective management practices in Nairobi and Lamu counties as discussed below was analyzed using the descriptive as well as inferential statistics. The descriptive results as shown in table 4.13 indicates that implementation of computerized human resource management in the two Counties has significant influence on effective county management. Up to 71% of the respondents indicated that computerized human resource management has significant influence on effective county management. Only a mere 15% of the respondents indicated that computerized human resource management has little influence on effective county management.

Table 4. 13: Computerized Human Resource Management and Effective Management

	Frequency	Percentage	Cumulative Percentage
Very Large	58	36%	36%
Large	56	35%	71%
Moderate	21	13%	84%
Little	15	9%	94%
Very little	10	6%	100%

The researcher further carried out a linear regression analysis to find out the influence of computerized human resource management on staff performance in Nairobi and Lamu counties. The findings as shown in the model summary Table 4.14 indicated that R^2 for the model was 0.516, meaning that implementation of computerized human resource management contributed 51.6% on staff performance in the Nairobi and Lamu Counties.

Table 4.14: Coefficient of Determination

Model	R	R2	Adj. RSquare	Std. Error of the Estimate
1	0.718	0.516	0.512	4.845

The findings of this study sought to answer the research question

Does computerization of human resource management increased effective management practices in Nairobi and Lamu counties?

From the study results, *computerization of human resource management* has contributed effectiveness of county management practices in Nairobi and Lamu Counties with 51.6% variations in effectiveness of county management practices being explained by the computerized human resource management

The ANOVA Table 4.15 shows that the predictor variable, IFMIS has a P-value equal or less than 0.05. This demonstrates that the computerized human resource management variable in this model is statistically significant in influencing the effectiveness of county management in the Nairobi and Lamu Counties considering that its P- value is less than 0.05 at the 95% level of confidence.

Table 4.15: Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2680.813	1	2680	146.372	.000
	Residual	2728.949	159	18.315		
	Total	**5409.762**	**160**			

As indicated in Table 4.16, coefficients were generated to determine the direction of computerized human resource management on effectiveness of county management. The results showed that the relationships between the coefficients of computerized human resource management and effectiveness of county service management in Nairobi and Lamu counties were positive implying computerized human resource management and effectiveness of county service management moved in the same direction. Based on the coefficient table

results, the study shows that for every unit increase in computerization of human resource management, effectiveness of county service management increased by 2.973 units. i.e. Y = 8.537+ 2.973X_3. The P-values are less than 0.05, meaning that IFMIS is statistically significant in explaining the changes in effectiveness of county service management among the Nairobi and Lamu Counties.

Table 4.16: Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.537	1.724		10.754	.000
	Computerized HRM	2.973	.080	.704	12.098	.000

4.3.5 Automated Procurement and Disposal Processes

The analysis of the results on whether automated procurement and disposal processes has increased the effectiveness of county management services in Nairobi and Lamu counties is shown in table 4.17 below. The results indicate that implementation of automated procurement and disposal processes in the two Counties has added little influence on effectiveness of county management services. Up to 79% of the respondents indicated that automated procurement and disposal processes have very little or little influences on effectiveness of county management services. 11% of the respondents indicated that automated procurement and disposal processes moderately influence effectiveness of county management services with 11% of the respondents indicating an above moderate influence.

Table 4.17: Automated Procurement and Disposal Processes

	Frequency	Percentage	Cumulative Percentage
Very Little	68	43%	43%
Little	57	36%	78%
Moderate	18	11%	89%
Large	11	7%	96%
Very Large	6	4%	100%

The researcher carried out a linear regression analysis to find out the influence of IFMIS implementation on effective county services management in Nairobi and Lamu counties. The findings as shown in the model summary Table 4.18 indicated that R^2 for the model was .179, meaning that IFMIS implementation contributed 18 % on effective county services management in the Nairobi and Lamu Counties.

Table 4.18: Coefficient of Determination

Model	R	R2	Adj. Rsquare	Std. Error of the Estimate
1	0.423	0.179	0.174	3.786

The findings of this study sought to answer the research question

Has automation of procurement and disposal processes enhanced effective management practices in Nairobi and Lamu counties?

From the study results, automation of procurement and disposal processes has contributed effectiveness of county management practices in Nairobi and Lamu Counties with 17.9% variations in effectiveness of county management practices being explained by the automation of procurement and disposal processes

The ANOVA Table .4.19 shows that the predictor variable, IFMIS has a P-value equal to .000. IFMIS variable in this model is statistically significant in influencing effective county management practices in the Nairobi and Lamu Counties considering that its P- value is less than 0.05 at the 95% level of confidence.

Table 4:19: Anova Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1806.358	1	1806.38	74.693	.000
	Residual	3603.404	159	24.184		
	Total	**5409.762**	**160**			

Table 4.20 shows the relationships between the coefficients of IFMIS implementation on County management practices in Nairobi and Lamu counties. Based on the coefficient table results, the study shows that for every unit increase in IFMIS, effective county management practices increased by .138 units. i.e. i.e. $Y = 15.936 + 0.138X_4$. The P-values are less than 0.05, meaning that FMIS is statistically significant in explaining the county management practices among the Nairobi and Lamu Counties.

Table 4.20: Coefficient Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.936	2.694		5.915	.000
	Procurement & Disposal	.138	.112	.578	8.642	.000

The findings in this study concurs well with those of Karanja and Ng'ang'a (2014); Ajayi and Omirin (2007), who intimated IFMIS promotes sound reforms at the county level instrumental in the fighting against wasteful spending, inefficiency and corruption. They also ensure transparency, accountability and responsiveness to public expenditure policy priorities. Further, GOK (2011) opined that Integrated Financial Management Information System (IFMS) is a critical ERP of choice by the Kenyan Government to achieve sound public financial management, which is in congruence with the findings of this study.

4.3.6 Multiple Linear Regression Analysis

A multiple linear regression analysis was conducted to investigate the joint causal relationship between the independent and dependent variables. Regression results in table 4.21 indicated that the goodness of fit for the regression of independent variables and IFMIS is satisfactory. An R squared of (0.980) indicated that (98%) of the variances in the effective management practices in Nairobi and Lamu County are explained by the variances on implementation status of integrated financial management information system.

Table 4.21: Model Summary

Model	R	R Squared	Adjusted R Squared	Std. Error of the Estimate
	.990	.980	.979	.62060

ANOVA results were presented in table 4.22 the results indicated that the overall model was significant since the tabulated p-value is less than 0.05 and hence implementation of IFMIS has a good joint explanatory variables on effective county service management.

Table 4.22: Anova Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3381.109	1	676.222	1755.763	.000
	Residual	70.096	159	.385		
	Total	3451.205	160			

Regression analysis generated the coefficient table 4.23, which showed that IFMIS implementation had significantly influences effective county services management. The results indicated that when all the independent variables are regressed jointly on the effectiveness of county services management there is positive change. This implies that

effectiveness of county service management moves in the same direction with implementation of IFMIS.

From the regression results, IFMIS is greatly seen to influence fiscal discipline through automation of the budgeting process among all the variables and that a unit change in IFMIS implementation leads to 0.831 units change in effective county management practices. This is seconded by automation of procurement and disposal processes in which a unit change in implementation leads to 0.737 units change in effective county management practices. The results further reveal that automation of human resource management has little influence on effective county management practices given that implementation of IFMIS by 1 unit change causes 0.156 units change in effectiveness of county management practices. 1 unit change in automation of county service delivery results to a 0.031 unit change in effectiveness of county management practices.

Table 4.23: Correlation Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	21.421	.494		43.379	.000
Automation of Budgeting	.831	.023	.897	35.658	.000
Automated county services	.031	.018	.024	1.689	.000
Computerized HRM	.156	.043	.089	3.637	.000
Procurement & Disposal	737	.013	.036	2.787	.006

From the regression analysis, the regression modeled is as follows;

$$ECM = 21.421 + 0.831\ X_1 + 0.31X_2 + 1.56X_3 + 0.737X_4$$

4.4 Challenges experienced towards implementing IFMIS for effective management in the county government

The study proceeded to establish the challenges experienced by counties towards implementing IFMIS for effective management in the county government and the results are tabulated in table 4.24. From the analysis, majority of the county employees indicated that the IFMIS implementation process have been engulfed by a myriad of challenges most of which are external. The highest ranked challenge is lack of adequate funding, seconded by poor implementation approach. Counties haven't received enough budgets to afford capacity building and change management. The big bang approach towards implementation of IFMIS has also been rated as a great challenge by 94% of the respondents. This abrupt introduction of change may have resulted to resistance. The implementation process have also been cited by 89% of the respondents to have lacked a clear active steering and technical committees to support the implementation process which may have affected the entire IFMIS project management. Top management in the counties has been identified as lacking commitment towards the implementation process with 86% of the respondents saying so. Lack of blessings from top management in any project leads to failure and poor performance and this has a consequence on IFMIS implementation success.

The respondents standing at 71% indicated that IFMIS is supported by a strong, reliable and modern ICT infrastructure and hence it's not a challenge they experience.83% of the respondents also indicated that legislation/ legal framework have never been a challenge they experience in IFMIS project implementation at the county level.

Table 4. 24: Challenges experienced in IFMIS Implementation

Statements	1	2	3	4	5	Total	Very little/little	Very large/large
Top Management support and commitment	1%	5%	8%	34%	52%	100		86%
Adequate project funding	0%	0%	4%	34%	63%	100		96%
Strong, Reliable and modern ICT infrastructure	40%	31 %	25%	4%	0%	100	71%	4%
Staff Facilitation and motivation	4%	2%	18%	52%	24%	100		76%
Active Steering and Technical committees	5%	4%	2%	37%	52%	100		89%
Change Management and Communication Strategies	0%	0%	7%	52%	41%	100		93%
Capacity Building	2%	2%	7%	40%	48%	100		88%
Legislation/ legal framework	40%	43 %	6%	6%	5%	100	83%	
Step-by-step or Phased approach	0%	4%	2%	63%	31%	100		94%
Chart of accounts	2%	1%	12%	48%	36%	100		84%
Adoption of manual processes to IFMIS requirements	4%	1%	25%	29%	41%	100		70%

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATIONS AND AREAS FOR FURTHER RESEARCH

5.1 Introduction

The study was guided by the general objective; To assess whether implementation of IFMIS has contributed to effective management practices in Nairobi and Lamu counties guided by four objectives.

5.2 Summary

Influence of budgeting process automation on effective management practices in Nairobi and Lamu counties

From the study findings, IFMIS role on the budgeting processes has been seen to be instrumental towards effective county management practices. This study however found that IFMIS contributed 39% towards effective county management practices. Based on the positive coefficient results generated, the study shows that IFMIS and effectiveness in county management practices move in the same direction and that for every unit increase in IFMIS effectiveness in county management practices increases by 1.120 units. The P-value was also less than 0.05 hence statistically significant in explaining the changes in county management practices amongst the Nairobi and Lamu Counties.

Influence of automated county services on effective management practices in Nairobi and Lamu counties

On the influence of automation of county public services on effective management practices, R^2 for the model was .494, meaning that IFMIS implementation contributed 49.4 % on effective county management practices. Based on the positive coefficient results, the study revealed that automation of county public services and effective management practices move in the same direction and that for every unit increase in automation of county public services, effectiveness in county public management increased by 0.207 units. The P values < 0.05,

meant statistically significant in explaining the change effective county management practices among the Nairobi and Lamu Counties.

Computerized human resource management and effective management practices in Nairobi and Lamu counties

The study findings on the influence of implementation of computerized human resource management on effective county management found R^2 for the model equal to 0.516, meaning that computerized human resource contributed up to 51.6% on effective county management practices in the Nairobi and Lamu Counties. Based on the positive coefficient results, the study shows the variables follow each other and that for every unit increase in computerization of human resource management, effectiveness of county service management increased by 2.973 units. The P-values< 0.05 meant statistically significant in explaining the changes in effectiveness of county service management among the Nairobi and Lamu Counties.

Influence of automated procurement and disposal processes on effective management practices in Nairobi and Lamu counties

On the automation of procurement and disposal processes, the study results generated an R^2 for the model equal to 0.179, meaning that IFMIS implementation contributed only 18 % to the effectiveness of county management practices in the Nairobi and Lamu Counties. Further, the study shows the positive coefficients of IFMIS implementation on effective County management practices in Nairobi and Lamu counties implying the two move in the same direction. Based on the coefficient results, the study shows that for every unit increase in IFMIS, effective county management practices increased by 0.138 units. The P-values are less than .005, meaning that IFMIS is statistically significant in explaining the county management practices between the Nairobi and Lamu Counties.

For the overall model, R square equal to 0.980 indicated that only 2% of the variances in the effective management practices in Nairobi and Lamu County are not explained by the variances on implementation status of integrated financial management information system.

This implies that implementation of IFMIS is seen to move in the same direction with effectiveness of county service management. From the regression results, among all the variables automation of the budgeting process has the highest contribution on effectiveness of county service management seconded by automation of procurement and disposal processes

with automation of county services and computerization of human resource management following respectively.

5.3 Conclusion

From the study findings, automation of budgeting process have been seen to play a possible role in effectiveness of county management practices and hence the need to support the full implementation process. Although this agreement cuts across the many respondents, on average 35% of the respondents agreed on the status and influence of IFMIS at the county government with the majority of the respondents either disagreeing or remaining neutral implying the need to rework on the implementation progress of IFMIS. Automation of budgeting process has the possibility of helping the counties identify budget variances, eliminate wasteful expenditures, and prioritize key spending areas as well as ensuring accountability and transparency in spending of county resources**.**

On the automated county services, the study found a significant influence owing to the fact that automated county services are easy to measure and entrench in staff KPIs appraisable at the end of an agreed period. Automated county services increases efficiency and effectiveness of service delivery thereby leading to effective county service delivery mechanisms. Automated county services provide an opportunity for automated escalation of unnecessary delays, which deters possible customer complaints. The findings reveals that though automation of county services explains up to 49% of effectiveness in public service, there is still a huge gap to fill requiring concerted efforts from all the stake holders.

From this study, it can be implied that; the National Government must take a leading role to promote IFMIS implementation as a key e-government projects through more technical assistance, public awareness initiatives, training budget and rolling out an effective change management program as the county staff being the end users need to appreciate the role of IFMIS and its impact on county services delivery.

The County Governments leadership need to be at the fore front in supporting IFMIS implementation and discarding all the manual operations which impede efficiency and effectiveness in service delivery while promoting a culture of financial impropriety, corruption

as well as uncoordinated procurement and disposal processes leading to loss of public funds.

5.4 Recommendations

In order to tap the many benefits associated with adoption of IFMIS implementation this study recommends that;

The National government needs to inject further support to the county governments with change management trainings to overcome resistance noted posing a challenge in adoption. The staffs at the county level require an appreciation on the need for IFMIS through trainings and hand holding which can be facilitated through additional budget not available due to limited funding at counties. Now that IFMIS is already deployed to the counties a lot of sensitization needs to be done to the users and all stakeholders for it to be successful.

Non-adoption has resulted to continuous manual processes at the county level inhibiting effective service delivery, effective corporate governance from manual procurement processes, manual budgeting processes as well as un-computerized human resource management.

Clear objectives on the need to implement IFMIS need to be reframed based on the intent to increase customer satisfaction, reduce wastage, increase efficiencies and eliminate graft amongst other evils like unproductive workers. A clearer understanding on the global e-government system trends designed to accommodate all financial transactions within the government to geared towards reducing wastage, enhanced record keeping, for planning and reduction of corruption must be emphasized.

There is need to ensure that the requisite infrastructure are in place especially in outlying areas out of Nairobi where ICT connectivity leave alone electricity availability is a real challenge. If the infrastructure cannot be put in place in the whole country, the result will be that it will be branded as a Nairobi “project” while in the other areas manual systems continues as usual.

Further, a strong IFMIS project implementation and coordination working committee championing the counties’ level implementation coordinated by a secretariat derived from the national IFMIS need to be constituted providing regular updates on implementation status and challenges met.

5.5 Areas for Further Studies

For further studies, the researcher recommends that future scholars can focus on how to establish a model for testing and evaluating the level of success in the implementation of IFMIS in the County Governments and establishing the role of end users on the level of success in the implementation of IFMIS in the County Governments. This will eliminate the dearth of literature existing on IFMIS in Kenya

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APPENDICES

Appendix I: Introduction Letter

Date……..

Governor……..County

P.O Box ……..

…….

Dear Sir,

RE: ACADEMIC RESEARCH PROJECT

I' am an MBA student at the Strathmore University I wish to conduct a research entitled "**An Assessment of Integrated Financial Management Information System Implementation Towards Effective Management Practices In Nairobi And Lamu Counties''.** A questionnaire has been designed and was used to gather relevant information to address the research objectives of the study. The purpose of writing to you is to kindly request you to grant me permission to correct information on this important subject from randomly selected members of staff and committee members.

Please note that the study will be conducted as an academic research and the information provided will be treated in strict confidence. Strict ethical principles will be observed to ensure confidentiality and the study outcomes and reports will not include reference to any individuals.

Your acceptance will be highly appreciated.

Yours Sincerely

Patrisio Njiru Njeru

Appendix II: Questionnaire

This questionnaire has statements regarding how IFMIS has contributed towards effective management in the county government. Kindly take few minutes to complete the questionnaire as guided. Your responses will be handled confidentially and ethically

SECTION A: DEMOGRAPHIC CHARACTERISTICS

Highest Level of Education attained:

a. Secondary [ ] b. Diploma [ ] c. Degree [ ] d. Postgraduate[ ]

Gender: a. Female[ ] b. Male[ ]

Age in years:

a. 25- 40 years [ ] b. 35- 45 years [ ] c. 45 years and above [ ]

How many years have you worked with the Government?

a. Below 5 years [ ] b.5-10 years [ ] c. 11- 20years[ ] .Above 21 years[ ]

Which department do you work in this organization?

Finance [ ] Front office [ ] Procurement [ ] Human Resource [ ]

How many years have you used IFMIS system?.....

a 1-2 years [ ] b. 2-5 years [] c. Above 5 years []

SECTION B: IFMIS

This section aims at establishing the status of IFMIS in the counties. Please indicate to what extent the statement applies using the likert scale.

(On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)					
Statements	**1**	**2**	**3**	**4**	**5**
13. There is no ICT connectivity in the county					
14. The IFMIS system is regularly unstable (Down time)					
15. IFMIS processes do not match with our manual processes					
16. All activities in the departments do not run within the IFMIS system					
17. Exchequer budget releases of funds on the IFMIS coincide with manual funds release process					
18. All payment approvals are NOT carried out in IFMIS					
19. There is no management goodwill to implement IFMIS					
20. We do not run manual payments					
21. Payment vouchers are not prepared and approved in IFMIS before payment					
22. Purchase orders are not generated exclusively through IFMIS					
23. LPOs and Invoices are manually captured onto the IFMIS system					
24. IFMIS does not integrate well with other existing ERPs					

SECTION B: BUDGETING

This section aims at establishing how IFMIS has supported budgeting towards effective management in the county government. Please indicate to what extent the statement applies using the likert scale.

(On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)					
Statement	**1**	**2**	**3**	**4**	**5**
1. IFMIS has supported county budgeting process					
2. IFMIS has robust support towards procurement of county items					
3. IFMIS is highly reliable to manage the accounts payable and account receivables					
4. IFMIS has in build controls at each level to ensure strict authorization of county expenditure					
5. IFMIS account ledgers easily point to the Generals Ledgers (GL) for ease of periodic accounts consolidation					
6. IFMIS strongly supports the counties Cash Management policy					
7. IFMIS easily supports customization of required management reports based on the user levels or various revenue and expenditure streams					
8. IFMIS has great capabilities of ensuring audit trails remaining intact for a considerable period					

SECTION C: COUNTY SERVICE DELIVERY

This section aims at establishing how automated county service has supported effective management in the county government. Please indicate to what extent the statement applies using the likert scale.

(On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)						
	Statement	1	2	3	4	5
1	The IFMIS has improved the record management in the county					
2	The IFIMIS is a scalable system providing ability to add new additional services as the come up					
3	IFMIS has provided real time reports on customers services					
4	IFMIS is highly interoperable with other systems in the county with ease					
5	IFMIS has inbuilt capabilities to escalate long outstanding customer issues					
6	IFMIS is able to generate reports on number of services offered on daily basis per category					
7	IFMIS user interface is friendly to the users					
8	IFMIS system has not been linked with other revenue collection systems					
9	Customer service SLA of a county are easily embedded in the IFMIS					

SECTION D: AUTOMATED HUMAN RESOURCE MANAGEMENT -HRM

This section aims at establishing how automated HRM has influenced effective management in the county government. Please indicate to what extent the statement apply using the likert scale.

(On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)						
	Statement	1	2	3	4	5
1	The system supports allocation of staff target for appraisal purposes					
2	IFIMIS provides the management with the ability to monitor staff productivity					
3	IFMIS accurately provides employees performance variance reports on periodic basis					
4	IFMIS has enhanced efficiency levels per county employee					
5	IFMIS has helped county to weed ghost workers as well as redundant staff					
6	Implementation of IFMIS has boosted staff motivation levels towards targets achievement					
7	IFMIS has enabled the county manage its wage bill averting strikes and employee tensions					

SECTION E: AUTOMATED PROCUREMENT

This section aims at establishing how automated procurement and disposal process has contributed towards effective management in the county government. Please indicate to what extent the statement apply using the likert scale.

(On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)						
	Statement	1	2	3	4	5
1	IFMIS have enhanced the level of accountability and responsibility in the county operations					
2	IFMIS has supported reduction of unnecessary expenditure leading to public wastage					
3	IFMIS generated reports are error free as a result of manipulation					
4	IFMIS has ability to generate exceptional and suspicious reports per worker and per department					
5	IFMIS has reduced number of frauds in the county					
6	IFMIS has supported the counties towards effective reforms to support county spending and revenue generation					

SECTION F: CHALLENGES

This section aims at establishing the challenges experienced by counties towards implementing IFMIS for effective management in the county government. Please indicate to what extent the statement apply using the likert scale.

On the scale of 1-5, indicate 1-very little; 2-little; 3-moderate; 4-large; 5-very large)					
Statement	1	2	3	4	5
Top Management support and commitment					
Adequate project funding					
Strong, Reliable and modern ICT infrastructure					
Staff Facilitation and motivation					
Active Steering and Technical committees					
Change Management and Communication Strategies					
Capacity Building					
Legislation/ legal framework					
Step-by-step or Phased approach					
Chart of accounts					
Adoption of manual processes to IFMIS requirements					

Appendix III: Research Plan

Activity	TIMEFRAME																			
	Month 1				Month 2				Month 3				Month 4				Month 5			
	Week				Week				Week				Week				Week			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Topic selection & approval																				
Supervisor appointment																				
Produce draft proposal																				
Incorporate supervisors reviews																				
Proposal ready for presentation																				
Incorporation of panel comments																				
Pilot testing of questionnaire																				
Data collection																				
Data processing and analysis																				
Review of draft by supervisor																				
Incorporate supervisor comments																				
Submit thesis																				