

# **EFFECT OF INTERGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM (IFMIS) IMPLEMENTATION ON SUPPLY CHAIN MANAGEMENT PERFORMANCE IN THE DEVOLVED GOVERNMENT SYSTEMS IN KENYA: A CASE OF NAIROBI CITY COUNTY GOVERNMENT**

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## **ABSTRACT**

The growth of information technology has transformed the way business is conducted and the internet has revolutionized the way organizations transact externally. IFMIS and supply chain management have been promoted as core components of public financial and public procurement reforms in many developing countries. Procurement being a major expenditure function, IFMIS in supply chain management has been advocated to bring about efficiency and effectiveness in the procurement processes. The purpose of this study was to identify the effects of IFMIS implementation on the performance of supply chain management in NCCG. Specifically, the study seeks to assess the effect of IFMIS on staff competence and skills, organisation policies, technological infrastructure and Top management support on supply chain management performance in NCCG. The study was anchored on the institutional theory, the Human Capital Theory, Technology Acceptance Theory (TAM) and the Upper Echelon Theory. The study used descriptive research design. The target population consisted of top management staff, ICT, finance and procurement department staff in the NCCG. The study used primary data that was collected using a semi-structured questionnaire. Quantitative data was analyzed using descriptive statistics and also factor analysis and results were presented using tables and figures for easy understanding and interpretation. Quantitative data was analyzed using content analysis. Further analysis using the

following linear regression model was used to establish the relationship between the independent and dependent variables. The study findings showed that there has been a moderate level of implementation of IFMIS in Nairobi City County Government. The staffs in the County possess the required skills, abilities and experience for IFMIS implementation and these are being enhanced by the county's training and capacity building programs. The study also established that NCCG has both internal and external policies guiding IFMIS implementation and that the management support for IFMIS implementation in NCCG is strong. NCCG has the required and reliable infrastructure for IFMIS implementation process although it is yet to achieve a reasonable measure of e-readiness status to fully implement IFMIS. Multiple linear regression showed that the aspects of staff competence and skills, policies, top management support and technological infrastructure in the implementation of IFMIS affect the SCM performance of NCCG. The implementation of IFMIS affects SCM effectiveness, cost savings, SCM efficiency, SCM functionality and increased quality in NCCG. The study recommends that the county undertakes extensive capacity building and training scoped during the early stage of the need assessment process. The study recommends that the county reviews the policy guidelines for more successful implementation of IFMIS with regard to management accountability.

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**Key Words:** *intergrated financial management information system (IFMIS), supply chain management performance, devolved government systems in Kenya, Nairobi city county government*

## **INTRODUCTION**

Governments in developing countries are progressively adopting ways and systems to modernize and improve public supply chain management due to its significant contribution to the countries' economic growth (Kishor et al., 2013). Globally, governments are investing a great deal of resources to streamline and improve public supply chain management and are implementing new supply chain management systems that manage tenders through a web site. This is geared towards enhancing accessibility of tenders, increasing efficiency and saving costs (faster and cheaper) in government supply chain management and improving transparency (to reduce corruption) in supply chain management services (Baily, 2008).

Dorotinsky and Junghun (2003) argue that the supply chain management system bridges the gap between the public supply chain management and private sector providers. As such, it's the responsibility of the government to provide goods, works and services to meet a variety of citizen needs. In some areas of public supply chain management, manual processing is still necessary. However, beyond the transition from manual to automated communication processes, public supply chain management provides significant improvements in the effectiveness of individual markets and the overall functioning of the markets. Their gradual introduction is part of an ambitious e-government program aimed at transforming the delivery and performance of public administration (Agaba and Shipman, 2008).

In the past decades, the financial and public supply chain management system in Kenya has undergone significant developments (Kipkorir, 2010). This is attributed to the adoption of e-government and the increased use of Information Communication Technologies (ICTs) which has dramatically changed services, business models and the public's expectations of the quality and efficiency of information sharing and service delivery (Muthoni 2010; Owegi and Aligula, 2006). One of the of the information systems that has helped revolutionize the supply chain activities is supply chain management.

In addition, e-government has resulted to the adoption and implementation of are Integrated financial management information system (IFMIS) within the Public Financial Management (PFM) system (Dorotinsky and Cho, 2003; Kasumba, 2009). This is aimed at supporting the achievement of fiscal discipline, strategic and efficient allocation and use of funds, value for money and probity in the use of public funds. This study seeks to establish the link between IFMIS implementation on supply chain management performance in the public sector in Kenya.

In the government jurisdiction, IFMIS refers to the computerization of public financial management (PFM) processes, from budget preparation and execution to accounting and

reporting, with the help of an integrated system for financial management of line ministries, spending agencies and other public sector operations (GoK, 2011; Casals and Associates, 2004). In Kenya, the National Treasury is charged with the responsibility of providing proper budgetary and expenditure management of government financial resources. In this regard, the ministry has been continually striving to improve financial management systems through various public financial sector reform programmes, aimed at increasing transparency, accountability, as well as responsiveness of public financial resources to enhance the quantity and quality of public service delivery to meet its developing priorities.

Within the National Treasury, there is an IFMIS Department which has the mandate of designing, spearheading and managing the Integrated Financial Management Information System re-engineering process. The Integrated Financial Management Information System (IFMIS) was developed in 1998 while its deployment to ministries started in 2003. The deployment to the counties started in 2012. At present the intended users of the IFMIS system at the counties are being trained on the same as outlined in the Strategic Plan for GoK IFMIS (2011- 2015). At present the system is being re-engineering with the aim of improving systems for management and reporting of financial data and information for the Government of Kenya (Peterson et al., 2008).

Imbuye (2013) adds that the IFMIS implementation requirement in Kenya originated from the Ministry of Finance and Economic Planning ICT Master Plan 2001- 2005 that highlighted the gaps and weaknesses within the Soft Issues Bid Evaluation Tool (SIBET) system that was currently being used. The plan recommended the development of different modules comprising of accounting, revenue management, asset management inter alia as well as the establishment of interfaces with the National Bank Payment Information System (NBPIS), Kenya Revenue Authority (KRA) and the Ministry of Labour for payroll and human resource management modules. Despite its introduction, IFMIS did not achieve its key objectives within the set timelines leading to its re-engineering in 2011 (Karanja and Ng'ang'a, 2014). According to Rodin-Brown (2008), challenges can have a devastating effect on the success of the implementation and management of IFMIS and should not be underestimated.

The goals of implementing any IFMIS for Kenya included effectiveness, efficiency and improved outcomes in financial management processes. Specifically, IFMIS was geared towards achieving better fiscal management, more optimal resource allocation, improved management of resources, reduced fraud and corruption, improved transparency and accountability, lower transaction costs (Ministry of Finance, 2003). The Kenyan government has embraced the use of IFMIS to execute effective financial management in the various government ministries and public institutions (Kang'ethe, 2002).

IFMIS enables prompt and efficient access to reliable financial data and helps in strengthening 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 (GoK, 2011; Peterson et al, 2008). Kiilu and Ngugi (2014) argue that the adoption of IFMIS has led to effective management of public funds in Kenya National Treasury. IFMIS has enhanced automation of government processes, enhanced reporting, enhanced record keeping, and enhanced communication, customization of government processes and integration of government processes. According to Nzuve (2012), IFMIS enhances effectiveness and transparency of financial management system, offers a standardized integrated financial management reporting system, and provides timely and accurate financial information.

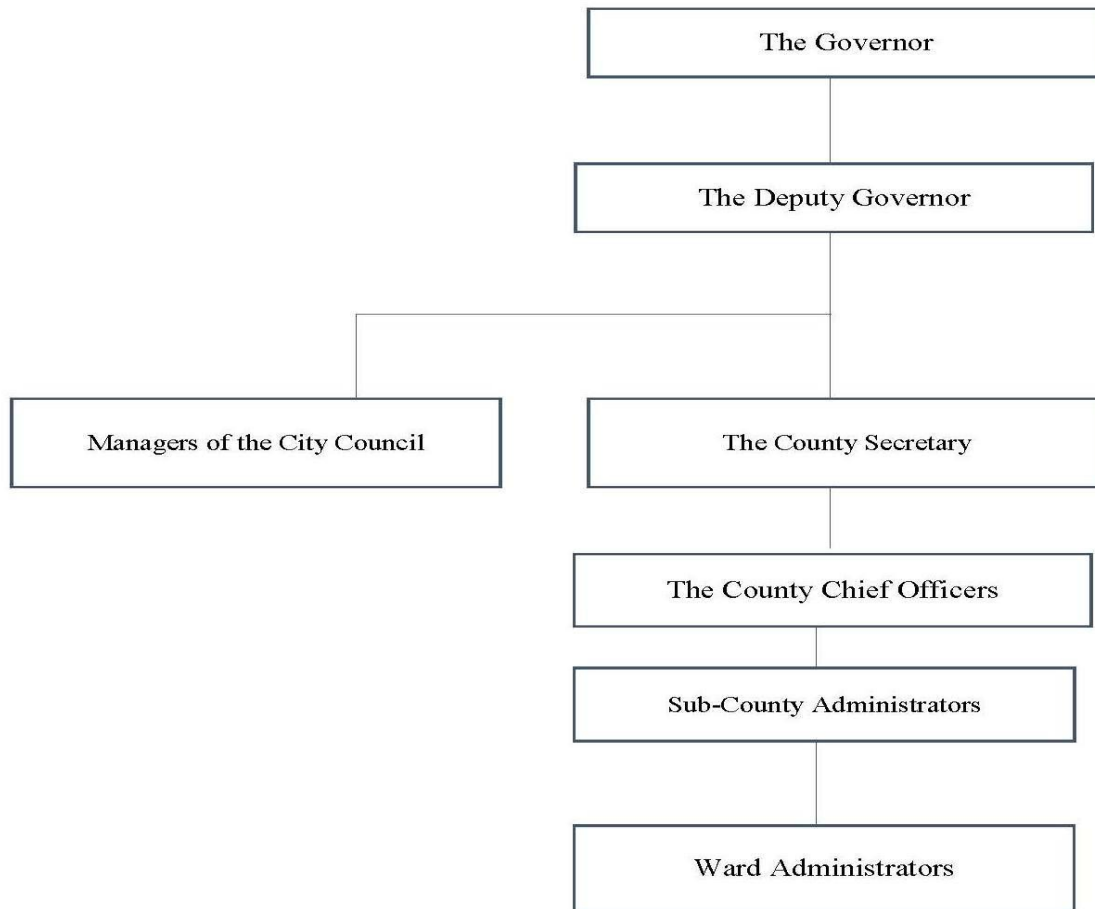
The NCCG is the creation of the Constitution of Kenya 2010 and successor of the defunct City Council of Nairobi. It operates under the auspices of the Cities and Urban Areas Act, The Devolved Governments Act and a host of other Acts. The NCCG is charged with the responsibility of providing a variety of services to residents within its area of jurisdiction. These include the services that were hitherto provided by the defunct City Council and the ones that have been transferred from the national government.

Guided by its vision to be the City of Choice to invest, work and live in, the County envisions to provide affordable, accessible and sustainable quality services, enhancing community participation and creating a secure climate for political, social and economic development through the commitment of a motivated and dedicated team. The County has a County Public Service Board appointed by the Governor and is responsible for the determination of the county Human Resource needs recruitment and related Public Service functions. The board is under the charge of the chairman supported by various committee members.

The County has an Information, Communication and E-Government Sector. Among its functions include: automation of all County services in order to provide enhanced operational efficiency and effectiveness in service delivery; designing and development of an interactive website through which information for public consumption can be uploaded thus provide a communication channel for exchange of views and opinions and implementation of recommendations contained in the ICT Transformation Roadmap that is anchored to County Integrated Development Plan. Other functions of the sector are; ensuring that the departments under the sector are aligned roles and responsibilities with the priorities and objectives set out in the Nairobi City County's policies and plans, dissemination of public information and Public participation and development of county communications capacity and infrastructure.

The County's public service management sector on the other hand is responsible for policy formulation and leadership in: Public Service Management and development; Human Resource

Development (staff training) and Management; Organizational design and development (structure); Performance management and public service innovations and Procurement services.



**Figure 1: NCCG Organization Chart**

*Source: Nairobi City County Government (2015)*

## **STATEMENT OF THE PROBLEM**

The public SCM in the Kenyan public sector has been undergoing reforms including the Public Procurement and Disposal Act 2005 that resulted into the formation of the Public Procurement Oversight Authority (PPOA) (Juma, 2010). In addition, there has been tremendous growth of information technology that has transformed the way public SCM business is conducted. The introduction of information technologies in SCM has led to the promotion of IFMIS as a core component of public financial reforms for developing county governments' effective control over their finances, transparency and accountability (Davenport and Brooks, 2004). Both IFMIS and SCM performance have attracted the attention of scholars and researchers (Gallagher; 2007; Bartel, 2006). Owegi et al. (2006) state that in Kenya, the SCM sector has received massive



upgrading of qualification through training as well as an increase in the supply of specialized graduates to help fill the professional gap in the public SCM.

Mosoba (2012) and Aketch (2013) stated that there has been a contributory factor to public SCM in Kenya given the increasing irregularities, cases and controversies that plague the SCM procedures various public projects. However, the Government of Kenya (GoK) has shown commitment to implementing reforms to create a leaner, efficient, motivated and more productive public service, public SCM included. The SCM function in Kenya has evolved from a crude system with no regulations to an orderly legally regulated SCM (Aketch, 2013). With the introduction of information technologies in SCM Function like IFMIS effective procurement management and performance of public corporations directly affects the relative success or partial failure of public organizations in Kenya.

Malela (2010) indicates that GoK treats public SCM as a major expenditure function and therefore advocates SCM as a way to bring about efficiency and effectiveness in its SCM processes. This is in line with the e-government strategy paper (2004). There have been studies linking IFMIS implementation and performance of SCM in various sectors around the world but only a few have sought to address the Kenyan case especially with the new devolved governance structure (Amayi and Ngugi, 2013; Brennan, 2007). A study to understand the effect of integrated financial management information system on SCM performance of the public sector within the Kenya context is not found in literature. It was against this backdrop that the current study sought to fill the existing gap by investigating the effects of the implementation of integrated financial management information system on SCM performance of the NCCG.

## **GENERAL OBJECTIVE**

To assess the effect of Integrated Financial Management Information System (IFMIS) implementation on supply chain management performance in Nairobi City County Government.

## **SPECIFIC OBJECTIVES**

1. To establish the effects of staff competence in IFMIS implementation on SCM Performance in Nairobi City County Government.
2. To assess the effects of organizational policy in IFMIS implementation on SCM performance in Nairobi City County Government.
3. To determine the effects of top management support in IFMIS implementation on SCM performance in Nairobi City County Government.
4. To find out the effects of technological infrastructure in IFMIS implementation on SCM performance in Nairobi City County Government.

## **THEORETICAL REVIEW**

A theory refers to a contemplative and rational type of abstract or generalizing thinking, or the results of such thinking. It provides an explanatory framework for some observation, and from the assumptions of the explanation follows a number of possible hypotheses that can be tested in order to provide support for, or challenge, the theory. The study relating IFMIS implementation and SCM performance cannot not be exhausted without considering the underpinning theories and models of ICT adoption and post-adoption behaviors. In this study, the underpinning theories reviewed include; institutional theory, the Human Capital Theory, Technology Acceptance Theory (TAM) and the Upper Echelon Theory.

### **Institutional theory**

Institutional theory takes a sociological view of reciprocal interactions between institutions (such as business entities) and society. According to Scott (2001), 'Institutions are social structures that have gained a high degree of resilience'. Akinola (2005) observed that institutions 'are embedded in country-specific institutional arrangements' (emphasis added). Differences between national institutions affect both the level of entrepreneurial activity in each country and the nature and amount of innovation taking place within the country (Kiggundu, 2002).

Scott (2001) identified three different systems or 'pillars' that support social institutions, namely the regulatory, normative and cognitive systems. In the regulatory system, formal and informal rules are set, monitored and enforced if necessary by means of laws, regulations, and government policies which promote or restrict behaviours within a country (Busenitz, Goacutemez, and Spencer 2000). The normative system consists of 'normative rules that introduce a prescriptive, evaluative, and obligatory dimension into social life' (Scott 2001). In contrast, the cognitive system recognizes 'the shared conceptions that constitute the nature of social reality and the frames through which meaning is made' (Scott 2001).

Thus, individuals' cognitive structures and social knowledge combine to represent a nation's cognitive environment. In contexts where institutional and competitive pressures exert strong influences, the strategic decisions of managers result both in conformity to institutional pressures, which leads to isomorphism and legitimacy, and in differentiation, which, following the resource-based view of the firm, can increase the possibility of creating a competitive advantage through heterogeneity in resources and capabilities. In this study compliance to organizational and government policies is a determinant of effective SCM performance.

### **Human Capital Theory**

The Human Capital Theory developed by Smith (1776) and re-invigorated by Schultz (1961) postulates that training and education are a form of investment in human beings. The underlying belief then is that training creates assets in the form of knowledge and skills, which in turn



increases the productivity of the worker. Schultz argued that skilled human resource has been able to acquire these skills as a result of training and development programs or investment in the existing human resource through appropriate on-the job training both within and outside the organization for example seminars, workshops, conferences, and by creating conducive environment through appropriate welfare care like promotion.

According to Kren (2006), human capital theory proposes that people's skills, experience, and knowledge are a form of capital and that returns are earned from investments made by the employer or employee to develop these attributes. The Human capital theory holds that employees should invest in specific training and further initiation of more promotion opportunities to enhance employees' career path prospects (Choe, 2011). Thus, the human capital perspective at the level of the organizations, due to its emphasis on skills and performance, appears to offer more support for generalized investments in the human resources.

### **Technology Acceptance Model (TAM)**

Technology Acceptance Model (TAM) theory explains the determinants of user acceptance of a wide range of end-user computing technologies. TAM identifies two theoretical constructs including Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) that affect the intention to use a system. There are a number of studies that have used TAM as their theoretical background for explaining ICT adoption and use. Scholars already confirmed that PU has a positive relationship with both adoption intention (Galera et al., 2011) and continuance intention (Romi et al., 2013).

In post adoption studies, PU has been found to influence satisfaction (Nakata and Berger, 2013) and attitude toward the technology. PEOU has been found to influence both PU and adoption intention. Even though TAM has been found to be a valid theoretical framework in studying ICT adoption and use, it has been criticized for its several limitations including the original model's intended generality and parsimony, not considering non-organizational setting and overlooking the moderating effects of ICT adoption and use in different situations (Sun & Zhang, 2006).

### **Upper Echelon Theory**

Hambrick and Mason (1984) developed the upper echelon theory that suggests that top management support as one of the determinants of strategic choices. Usually organizations are ran through strategic decisions and if these are affected by the top level management support, then the support can be taken to influence the running of the organizations. Hence as Hambrick and Mason (1984) further argue, top management support is key for the underlying traits and cognitive processes of the top management team.

Upper echelon theory, Hambrick and Mason (1984), is deeply rooted in the behavioral theory of the firm. Its main underlying assumption is that human limitations influence the perception,

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evaluation and decisions about organizational problems and hence influence firm's choices and behaviour. Notably also, Jackson (1992) states that top management support has a positive impact on the resolution of complex problems, however, difficulties of communication and understanding may exist in these teams and for this reason, some of the advantages of both diversity and homogeneity may be reflected in the team's performance.

The central premise of upper echelons theory is that top executives view their situations - opportunities, threats, alternatives and likelihoods of various outcomes - through their own highly personalized lenses. This individualized construal of strategic situations arise because of executives' experiences, values, personalities and other human factors. Thus, according to the theory, organizations become reflections of their top executives become reflections of their top executives become reflections of their top executives. (Hambrick, 2007).

Hambrick (2007) postulated that top managers who face a high level of challenges will have less time to contemplate decisions and therefore take mental shortcuts and rely more on their personal backgrounds. Thus, he predicts that the relationship between managerial characteristics and organizational outcomes will be stronger when the level of managerial challenges is high. In situations where managers face a lower level of challenges, in contrast, their decision making will be more thorough and rely less on their personal characteristics. Hence, the link between upper echelon characteristics and organizational outcomes should be weaker in such situations (Hambrick 2007).

## **EMPIRICAL LITERATURE**

Hendriks (2012) conducted a study to identify the challenges and risks that are involved in the implementation of the IFMIS in South Africa in order to develop guidelines that make the implementation more successful. The study used literature study methodology where theories were explored and used to solve a research problem. Based on the theoretical research, solutions and guidelines were developed to solve challenges and risks experienced. The study found that the sheer size and complexity of an IFMIS poses significant challenges and a number of risks to the implementation process. There are, however, critical success factors or best practices that can be used for the project to succeed. According to Eisenstat (2003) found that IT infrastructure play a supportive but important role in IFMIS implementation for improved procurement performance.

Njonde and Kimanzi (2014) analyzed the effectiveness of Integrated Financial Management Information System (IFMIS) on performance of public sector in Kenya. The study analyzed four variables; financial reporting, budgeting, internal control and implemented government projects to assess the effectiveness of the implemented system. The study found that IFMIS has been effective in financial reporting, budgeting and internal controls as well as implementation of

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government projects, although there were challenges faced in internal controls. The study revealed that there was a positive relationship between the effectiveness of IFMIS on public financial management and the independent variables; financial reporting, budgeting, internal controls and projects as was revealed in the regression analysis.

Barry (2001) found that the level of complexity of IFMIS implementation for procurement is much higher than other ICT-based government reforms due to inherent complication of public financial management system. In addition, IFMIS implementation is quite a challenging task and requires multiple conditions to be satisfied for successful implementations of long term sustainability. Even though ICT automates the tasks involved in performing procurement processes such as purchase requisitions, quotations, quotations analysis, and preparation of local purchase orders, deliveries and goods receipts, IFMIS programs changes the way government information is captured, summarized and communicated and the benefits of these advances should not be underestimated.

Subramaniam and Shaw (2002) posit benefits of IFMIS implementation in e-GP are in line with the objectives of internationally recognized public procurement systems: enhanced transparency and compliance, increased performance and quality, and economic development. To realize the full potential of IFMIS implementation in the area of public procurement is a challenge in itself. To perceive these developments simply as technological issues is to misunderstand their reach and relevance for policy, training, infrastructure, design, production and delivery, as well as technical literacy and awareness.

Mwaniki (2013) assessed the effectiveness of integrated financial management system in public sector financial reporting in Kenya. The researcher used descriptive design and a population of 343 respondents from five selected ministries including IT officers, Accountants, finance officers and procurement officers. Stratified sampling was used to get the sample size from the target population while a questionnaire was used to collect primary data. Descriptive statistics was used to analyze the findings through means, standard deviation and measures of relative frequencies. These were presented in tables, figures and charts while the qualitative data was presented in prose. The findings showed that organization capacity and organizational change influenced the implementation of IFMIS in the public sector. The study concluded that binding constraint when introducing IFMIS including technical constraints, inadequate management support and lack of change management strategies.

Oduyo et al. (2013) studied the effect of IFMIS implementation on cash management practices in the public service Eldoret West District Treasury, Kenya. This study was necessitated by the fact that the use of IFMIS in the public service was undergoing challenges with many users experiencing problems with certain complicated features of IFMIS coupled with security, flexibility and reliability issues that have an impact on efficient cash management in the public

service. Study findings showed that reliability and flexibility of IFMIS positively affect cash management. The findings also showed that a reliable system is basically one that is accurate, timely, complete and consistent in collection of information and the infrastructure which supports the IFMIS is supposed to be secure from destruction, corruption, unauthorized access and breach of confidentiality so that there is efficient cash management. Findings also revealed that the implementation of IFMIS has not been a success as a result of the top down management exhibited in most of the public services.

## **RESEARCH METHODOLOGY**

### **Research Design**

Research design refers to the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Babbie, 2008). The researcher used descriptive research design. The design was preferred because it answered questions such as who, how, what which, when and how much (Cooper and Schindler, 2006). A descriptive study was carefully designed to ensure complete description of the situation, making sure that there is minimum bias in the collection of data and to reduce errors in interpreting the data collected. The study was guided by four independent variables; staff competence and skills; policy; top management support and technological infrastructure support. The use a descriptive design enabled the researcher to collect in depth information about the population being studied. The descriptive design gave proper and succinct recommendations to the management of NCCG as well as other devolved governments in Kenya.

### **Population of the Study**

A study population encompasses the entire groups of individuals, objects, items, cases, articles, or things with common characteristics existing in space at a particular point of time (Kothari, 2008). The study population comprised of 400 employees working in the ICT, finance and procurement departments and top management in the NCCG. The study adopted a census survey owing to the small number of departments. The study used purposive sampling to select the Top management, ICT, finance and procurement staff to participate in the study.

### **Sample and Sampling Technique**

A sample is a sub-set or part of the target population; sampling is a process of selecting subjects or cases to be included in the study of the representatives of the target population (Mugenda & Mugenda, 2006). This study used random sampling method. This gave all the respondents an equal chance of being selected. Ngechu (2004) drew attention to the importance of selecting a representative sample through making a sampling frame. From the population frame the required number of subjects, respondents, elements or firms selected in order to make a sample. The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample

size for the study. According to Mugenda and Mugenda (2003), a sample size of at least 10% - 20% of the total population is enough for descriptive studies. Thus, the study used a sample of 40 employees working in procurement, finance, ICT departments and Top management staff. The sample size was therefore 32 respondents

### **Data Collection Instruments**

The study used questionnaires to collect data. Kirakowski (2008) defines a questionnaire as a method for the elicitation, recording and collecting of information. The questionnaires were used because they are inexpensive. The questionnaire had both open and close ended questions. The closed ended questions made use of a five point likert scale where respondents were required to fill according to their level of agreement with the statements. The questionnaire was framed in accordance with the objectives of the study. Qualitative data was collected from open ended items while qualitative data was collected from closed ended items in the questionnaire.

### **Data Collection Procedures**

The study used primary data which was collected through a semi-structured questionnaire using drop-and-pick process. The questionnaire was used because of its economy, also to ensure anonymity, permit use of the standardized questions and has uniform procedures, provide time for subjects to think about responses and it is easy to score (Singh, 2006). The questionnaire comprised of both closed ended and open ended questions to avoid being too rigid and quantify data especially where structured items were used (Kothari, 2008). This method helped the researcher in collecting adequate enough information, which would otherwise been impossible using interviews and observations.

### **Data Analysis Methods and Presentation**

The study used primary data that was collected using semi-structured questionnaires. Quantitative data was analyzed using descriptive statistics and also factor analysis and results were presented using tables and figures for easy understanding and interpretation. The data collected was both quantitative and qualitative data. Quantitative data was analyzed using descriptive statistics and also multiple regression analysis. Quantitative data was analyzed using content analysis. This included analyzing words or pictures by collecting data, recording people experiences not selecting and pre-chosen aspect. The data to be obtained in this study were analyzed by organizing them into similar themes and tallying the number of similar responses. The Statistical Package for Social Sciences (SPSS) aided the analysis. Further analysis using the following linear regression model was used to establish the relationship between the independent and dependent variables:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where Y is the SCM performance,  $\beta_0$  is constant X effect of IFMIS implementation. Effects of IFMIS implementation were measured using four data points.

$X_1$  = Staff competence.

$X_2$  = Organizational Policy.

$X_3$  = Top management support.

$X_4$  = Technological infrastructure.

$\varepsilon$  = error term for the model. The error term means that the model may not be completely accurate, and will result in differing results during real world applications.

$\beta_0, \beta_1, \beta_2, \beta_3$  and  $\beta_4$  are the standardized regression coefficient and are the correlation between the predictor and dependent variables

The purpose of presenting research findings and results into graphs, charts and tables is two-fold. It is not only a visual way to look at the data and see what happened and make interpretations but also the best way to show the data to others users. In addition, reading lots of numbers in the text puts may not easily convey information. In this study, data was presented using tables and figures for easy understanding and interpretation. The results were presented and organized in tables for easy understanding and this was in consistent with the specific objectives.

## **RESEARCH FINDINGS**

This study sought to assess the effect of Integrated Financial Management Information System (IFMIS) implementation on supply chain management performance in Nairobi City County Government. Specifically, the study sought to establish if staff competence on IFMIS implementation affect SCM Performance in Nairobi City County Government; To assess if organizational policy on IFMIS implementation affect SCM performance in Nairobi City County Government; To determine if top management support on IFMIS implementation affect SCM performance in Nairobi City County Government; and to find out if technological infrastructure on IFMIS implementation affect SCM performance in Nairobi City County Government. This study found that there has been a moderate level of implementation of IFMIS at Nairobi City County Government.

### **Staff Competence**

The study found that the staffs at Nairobi City County Government have the required skills, abilities, and experience required for IFMIS implementation to a moderate extent and the staffs at Nairobi City County Government are fully aware of the magnitude of undertaking IFMIS



implementation for supply chain management performance. The study established that there are various aspects of staff competence and skills in IFMIS implementation affect Supply Chain Management performance in Nairobi City County Government. They include competencies and skills are pre-requisite in IFMIS implementation; there is sufficient in-house competent and skilled human capital to implement IFMIS ICT, finance and procurement staffs are competent and have the required skills to embrace IFMIS; the users of IFMIS for SCM are well trained and able to use the system well; and capacity building and training is scoped out whenever need arises.

In addition, the study established that the users of IFMIS on SCM are well trained and able to use the system well to a great extent, competencies and skills are pre-requisite in IFMIS implementation to a great extent, ICT, Finance and procurement staffs are competent and have the required skills to embrace IFMIS to a great extent and capacity building and training is scoped out whenever need arises to a great extent. On the other hand, there is sufficient in-house competent and skilled human capital to implement IFMIS to a moderate extent. The study further found that that Nairobi City County Government has adopted capacity building through training in IFMIS implementation for SCM performance to a moderate extent.

### **Organizational Policy**

The study further found that there are external policies guiding IFMIS implementation in Nairobi City County Government. Organization policies have modernized the system of financial management to a great extent and ensured the timely provision of quality information to a great extent. Accordingly, an IFMIS system for SCM is underpinned by a coherent policy framework governing the overall public finance system. Further, organization policies have enabled managers and employees to manage and be held more accountable to a great extent, it also eliminate waste and corruption in the use of public assets to a moderate extent.

### **Top Management Support**

The study found that top management support on IFMIS implementation affect SCM performance in Nairobi City County Government to a great extent. From the results, top managers ensure that all the necessary resources are available to a great extent, top management champions for IFMIS to be implemented in the organization for SCM to a great extent, top management shows initiative by attending IFMIS implementation meetings and training sessions and top management support affect the effective IFMIS implementation to a great extent. In addition, the top management is committed to see the implementation of IFMIS to a moderate extent and IFMIS for SCM can be implemented without the top management support to a moderate extent

## Technological Infrastructure

The study found that technological infrastructure is another aspect of IFMIS implementation that affects SCM performance in Nairobi City County Government. It was established that Nairobi City County Government has the required and reliable technological infrastructure for IFMIS implementation process. Nairobi City County Government needs to acquire new ICT system and infrastructure for IFMIS implementation to a moderate extent. From the study, there is lack of staff with required IT-knowledge at the County for the IFMIS implementation and Information technology infrastructure is necessary for implementation of SCM to very great extents, while they recapped that Technological infrastructure in Nairobi City County is inadequate to support the implementation of IFMIS to a moderate extent.

The study found that that technology infrastructure affects the SCM performance of Nairobi City County Government to a great extent, staff Competence and Skills affects the SCM performance of Nairobi City County Government to a great extent, organization policies affects the SCM performance of Nairobi City County Government to a great extent and top management support affects the SCM performance of Nairobi City County Government to a great extent. IFMIS implementation affects SCM effectiveness to a great extent, as well as SCM efficiency, SCM functionality and cost savings to a great extent.

## REGRESSION ANALYSIS

To establish the relationship between the independent variables and the dependent variable of the study the study conducted a multiple regression analysis. The study sought to complement the descriptive analysis by carrying out a multiple regression analysis. The researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study. The model Summary for the regression is shown in table 4.22 below.

**Table 1: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908 <sup>a</sup>	.825	.789	.65323

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (SCM performance) that is explained by all the four independent variables (Staff Competence, Organization Policy, Top Management Support and Technological Infrastructure). The four independent variables that were studied, explain 82.5% of the supply chain management performance in Nairobi City County Government as represented by the R<sup>2</sup>.

This therefore means that other factors not studied in this research contribute 17.5% of the supply chain management performance in Nairobi City County Government.

**Table 2: Coefficient of Determination**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant)	1.112	1.223			0.000
	Staff Competence	0.210	0.104	0.157	1.081	.0198
	IT Infrastructure	0.396	0.204	0.155	2.560	.0158
	Management Support	0.220	0.096	0.215	1.922	.0182
	Organization Policy	0.260	0.056	0.453	1.967	.0167

The researcher conducted a multiple regression analysis so as to determine the relationship between the parameters and the supply chain management performance in Nairobi City County Government. As per the SPSS generated table, the equation ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon$ ) becomes:

$$Y = 1.112 + 0.396X_1 + 0.210X_2 + 0.220 X_3 + 0.260 X_4$$

According to the regression equation established, taking all factors (Staff Competence, efficiency, Technological Infrastructure, Top Management Support and Organization Policy) constant at zero, supply chain management performance in Nairobi City County Government will be 1.112. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in Technological Infrastructure will lead to a 0.396 increase in supply chain management performance in Nairobi City County Government; a unit increase in Organization Policy will lead to a 0.260 increase in supply chain management performance in Nairobi City County Government, a unit increase in Top Management Support will lead to a 0.220 increase in supply chain management performance in Nairobi City County Government while a unit increase in Staff Competence will lead to a 0.210 increase in supply chain management performance in Nairobi City County Government.

These results infer that Technological Infrastructure contributes more to supply chain management performance in Nairobi City County Government, followed by Organization Policy, then Top Management Support, while Top Management Support contributes the least to supply chain management performance in Nairobi City County Government. At 5% level of significance and 95% level of confidence, Staff Competence had a 0.0198 level of significance, Top Management Support had a 0.0182 level of significance and Organization Policy had a

0.0167 level of significance, while Technological Infrastructure had a 0.0158 level of significance hence the most significant factor in influencing supply chain management performance in Nairobi City County Government.

## **CONCLUSIONS**

The conclusions of the study are drawn from the most significant factors presented in the preceding sections. The study thus concludes that there has been a moderate level of implementation of IFMIS in Nairobi City County Government. Training/capacity building, employee commitment, human resources available, top management support, technological infrastructure, governance system, reporting accountability, incentives structure and legal framework in place affect the implementation of IFMIS in Nairobi City County Government. IFMIS forms part of the financial management reform practices of developing countries globally. It holds benefits such as effective control over public finances, contributes to the enhancement of transparency and accountability and serves as a deterrent to corruption and fraud.

The study also established that implementation of IFMIS affects the overall SCM performance in the Nairobi City County Government where top management support and training/capacity building affect the SCM performance of Nairobi City County Government to moderate extents, whereas reporting accountability and employee commitment affect the SCM performance in Nairobi City County Government. In addition, implementation of IFMIS affects cost savings, SCM efficiency and SCM performance functionality and increased quality.

The study concludes that the Nairobi City County Government experience challenges of framework contracting, proficiency in IT applications, negotiation skills, public relations skills and records management skills to great extents in their endeavors of implementing IFMIS in SCM performance in Nairobi City County Government as well as challenges of communication and interpersonal skills and legal knowledge in SCM. The results have shown that difficulties can be experienced with the implementation of IFMIS. It will thus not always achieve the desired functionality and will have impact on county financial and SCM management processes that was originally anticipated. Obstacles such as a lack of capacity, a lack of commitment, and institutional and technical challenges pose a risk to the successful implementation of IFMIS.

## **RECOMMENDATIONS**

In general, the study recommends among other things that the government reviews all prohibitive legislations relating to supply chain management and information management in order to make itself an open system where information can be accessed without restrictions. This will enable effective public participation in supply chain management decision making and assist in promoting positive performance, severe and punitive disciplinary measures should be meted to all supply chain management malpractices including the supply chain management

ineffectiveness to reign in on all irregularities reported to them. This should include repossession of irregularly acquired assets, complete overhaul of supply chain management and stiffer penalties.

### **Staff Competence**

The study recommended that the County Government employs a change agent to oversee the implementation of the IFMIS and that the users of the system to undergo on the job training, in order to improve their skills and capabilities to use the system. There also needs to be strong project implementation committees with a champion at each of the ministries coordinated by the national IFMIS secretariat. Finally challenges faced with manual input of records needs to be erased and the system needs to be implemented from the management or decision making level, down to the user level.

### **Organizational Policy**

In order to address the challenges if IFMIS implementation the researcher recommends that the County government needs to have a strong policy and legal framework supporting IFMIS. The system should be setup to ensure that the IFMIS processes strongly match with manual processes in place to minimize the need for any legislative interventions or to teach the staff new ways of doing things on top of learning the new program. Note should be taken of the fact that these recommendation does not negate the need where the change is to reduce wastage, increase efficiencies and eliminate graft amongst other evils. There is need to ensure that all activities where possible are run within the IFMIS system to make it a true e-government system. The system should be designed to accommodate all financial transactions within the county government to reduce waste, enhance record keeping, for planning and reduction of corruption.

### **Top Management Support**

The study established that top level management support has a significant effect in IFMIS implementation in SCM in Nairobi City County Government. The study therefore recommends that commitment of top level management should be emphasized as it affects IFMIS implementation in the County Government to considerable levels. This would involve offering back up (support) to the top management to increase their commitment and self motivated towards attending their responsibilities in order to realize the intended results of IFMIS and SCM performance within the County Government.

### **Technological Infrastructure**

The study finally recommends that there is need to ensure that the requisite technological infrastructure are in place especially in outlying areas out of Nairobi where IT connectivity leave alone electricity availability is a real challenge. If the infrastructure cannot be put in place in the

whole county, the result will be that it will be seen as an urban or Nairobi “project” while in the outlying areas it will be things as usual using the manual systems.

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