INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM ADOPTION AND PUBLIC PROCUREMENT PERFORMANCE IN KENYA

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DECLARATION

This Project is my original work and has not been presented for a Degree in any other University

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ABSTRACT

The government of Kenya has for a long time been very much concerned over the persistent poor performance in financial management due to lack of reliable and timely information for decision making. A review by the Department of Accountant General at Treasury- Financial management, Accounting systems and Role of audits, revealed weaknesses in the management of financial information. IFMIS was expected to be a great breakthrough for Kenya's development by ensuring visibility and accountability in the entire procurement process. The purpose of this study was to assess the impact of Integrated Financial Management Information System (IFMIS) adoption on public procurement performance in Kenya. The study adopted a descriptive research design. For the purposes of this study, the population of interest was all the 19 Government Ministries in Kenya. Given the small size, a census was proposed. Primary data was collected for the purpose of this study. It was collected using interviewer administered questionnaires from chief procurement officers and IT managers in the target institutions. The filled questionnaires were inspected for completeness and edited. Descriptive statistics was used to determine the effect of IFMIS on the procurement processes in Ministries from information contained in the questionnaire. Standard deviation, range and co-efficient of variation was used to determine the challenges in implementing the IFMIS using data contained in the questionnaire. In addition, content analysis was used to analyze qualitative information collected in the survey. This was used to support the results of quantitative analysis in drawing conclusions and recommendations. The data collected from this study was mainly presented using, tables. The data analysis also used inferential statistics to make decisions or inferences by interpreting the data patterns to impact of IFMIS adoption on public procurement in Kenya. Inferential statistics included linear regression analyses, and ANOVA. The study found out that the various components of IFMIS have been adopted in the government ministries. They include; purchase ordering, general ledger (GL), accounts receivable, accounting, accounts payable, budgeting, procurement management, cash management, debt management tax administration, social security systems, pension systems, pay roll systems, human resource, asset management respectively. The study also concludes that budgeting, accounts receivable, accounts payable, purchase ordering and cash management all have a positive and significant effect on procurement performance in Kenya. Education level contributes the most to the public procurement performance followed by budgeting, accounts receivable, accounts payable, purchase ordering and cash management respectively. Based on the findings, this study recommends that the ministries should fully commit itself to see that the implementation of IFMIS is running smoothly without any challenges from the organization structures. However, it was noted that managers are supporting the implementation of the IFMIS due to the benefit that they may accrue if the system if fully functional.

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LIST OF ACRONYMS AND ABBREVIATIONS

EU European Union

GDP Gross Domestic Product

ICT information communication technology

IFMS Integrated Financial Management System

IMF International Monetary Fund

KPI Key Performance Indicators

MDA Millennium Development Agendas

OCG Office of Government Commerce

OECD Organization for Economic Co-operation and Development

P2P Procure to Pay

PPDA Public Procurement and Disposal Act

RBV Resource Based View

RoK Republic of Kenya

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The impact of web-based technology has added value/speed to all the activities and avenues of business in today's dynamic global competition. The ability to provide customers with cost effective total solution and life cycle costs for sustainable value has become vital. Business organizations are now under tremendous pressure to improve their responsiveness and efficiency in terms of product development, operations, and resource utilization with transparency. With the emerging application of internet and information technology (ICT) the companies are forced to shift their operations from traditional way to a virtual such as e-procurement to transfer the company's activity to automated one (Carabello, 2007).

The procurement process has traditionally involved slow manual procedures and even slower systematic processes for handling procurement transactions (Hawking, 2009). E-procurement has had an increasingly important role in business-to-business (B2B) procurement. Web- enabled B2B e-procurement enhances inter organizational coordination resulting in transactions cost saving and competitive sourcing opportunities for the buyer organization (Subramanian & Shaw, 2002). In recent years organizations are becoming more discerning about e-procurement decisions that need to be made and how they respond to the multitude of pressures and influences.

Public procurement is an important function of government. It has to satisfy requirements for goods, works, systems, and services in a timely manner. Furthermore, it has to meet the

basic principles of good governance: transparency, accountability, and integrity (Wittig, 2003; Callender & Schapper, 2007). Another main principle of governments is to achieve value for money in procurement (Garson, 2009). In this regard, a number of public sector agencies worldwide have identified electronic procurement (eprocurement) as a priority e-government agenda and have implemented or are in the process of implementing buy-side e-procurement systems.

1.1.1 Integrated Financial Management Information System

The Government of the Republic of Kenya consists of the Presidency, 18 Ministries, the Office of the Attorney General, The Judiciary, The National Audit Office, the Office of Controller of Budget, the Office if the Director of Public Prosecution and 14 Commissions (Office of the President, May 2013). Njuru (2011) noted that the IFMIS is designed to improve systems for financial data recording, tracking and information management (Office of the Deputy Prime Minister and Ministry of Finance, 2011). This is in response to increasing demands for greater transparency and accountability in the management of public finances. The IFMIS system ensures higher degree of data quality improves workforce performance for improved business results and links planning, policy objectives and budget allocations. The plan noted that the system also enhances the reporting capabilities to support budget planning, it automates the procurement process, it facilitates auto-reconciliation of revenue and payment with automatic file generation, it facilitates automated revenue collections for improved cash forecasting and it provides accurate and up to date information on the Government's financial position.

IFMIS has been described set of hardware and software used in undertaking financial processes of an organization and produces summarized reports on the same (Dorotinsky, 2003; and Rozner, 2008). According to Brown (2008) the IFMIS consists of a number of sub-systems including; accounting, budgeting, cash management, debt management, tax administration, procurement management, asset management, human resource and pay roll systems, pension and social security systems among others. The various IFMIS sub-systems generate respective reports used to support decision making as well as the preparation of auditable financial statements. IFMIS can therefore be termed as an accounting system customized to organizations information and operational needs (Rodin-Brown, 2008).

The goals of the IFMIS are to enhance the performance of financial operations and reporting of an organization as well as data management security. This is achieved, as the tasks by IFMIS are performed electronically using customized financial packages, increasing the transparency and accessibility of information in organization. IFMIS also standardizes operations across the organization and in turn reduces the risks of manipulation of organization processes and procedures (IFMS, 2000).

In relation to the public sector, scholars like Dorotinsky (2003) assert that IFMS in addition to improving the public finance management, it also enhances the confidence and credibility of the budget through greater comprehensiveness and transparency of information. Budget planning and execution is improved by making available timely and accurate data for budget management and decision-making. The author adds that IFMS allow a more standardized and realistic budget formulation across government, while promoting better control over budget execution through the full integration of budget

execution data. In addition, IFMIS enable the decentralization of financial functions and processes under the overall control of the Ministry of Finance, enhance financial discipline, and control operating costs by reducing administrative tasks and civil servants' workload.

1.1.2 Procurement Performance

Smith and Conway (1993) identified seven key success factors, which influence procurement, namely; a clear procurement strategy, effective management information and control systems, development of expertise, a role in corporate management, an entrepreneurial and proactive approach, co-ordination and focused efforts. An eighth is fundamental; communicate the key success factors to all levels of the organization and set out a procurement strategy to achieve continuous improvement in value for money. This should be based on total cost, quality, and enhancement of competitiveness of suppliers using best procurement practice.

Lardenoije, van Raaij, and van Weele (2005) asserted that basing on financial performance and neglecting non-financial performance cannot improve the procurement operations because only partial performance is considered. Internal and external forces influence realization of procurement goals. Interactions between various elements; professionalism, staffing levels and budget resources, procurement organisational structure, regulations, rules, and guidance, and internal control policies, all need attention and influence procurement performance.

Christopher (2005) distinguished features of a responsive organization. Major transformations are; from functions to process, profit to performance, products to customers, inventory to information, and transactions to relationships. Critical measures of

procurement performance need to be continuously monitored. The idea of 'Key Performance Indicators' (KPI)framework suggests that whereas there are many measures of procurement performance to be deployed in an organization, only a small number of critical dimensions contribute more than proportionately to success or failure. A balanced scorecard can provide guidance on critical areas where action may be needed to ensure achievement of goals. Three key outcomes of success are: better, faster, and cheaper. The goals combine customer-based measures of performance in terms of total quality with internal measures of resource and asset utilisation. Benchmarking helps identify current best practice and then focuses on how processes could be re-engineered and managed to achieve excellence in critical procurement areas. Emphasis should be on search for strategies that provide superior value in the eyes of customers seeking greater responsiveness and reliability.

Van Weele (2006) maintained that there is a link between procurement process, efficiency, effectiveness, and performance. Procurement performance starts from purchasing efficiency and effectiveness in the procurement function in order to change from being reactive to being proactive to attain set performance levels in an entity. Performance provides the basis for an organization to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses, and decides on future initiatives with the goal of how to initiate performance improvements. Procurement performance is not an end in itself but a means to control and monitor the procurement function. For any organization to change its focus and become more competitive, performance is a key driver to improving quality of services. Batenburg and Versendaal (2006) noted that use of inappropriate means can be a barrier to change and may lead to

deterioration of procurement operations. Organisations, which do not have performance means in their processes, procedures, and plans, experience lower performance and higher customer dissatisfaction and employee turnover. Measuring procurement performance yields benefits to organisations such as cost reduction, enhanced profitability, assured supplies, quality improvements, and competitive advantage. Electronic processes have replaced physical and paper-based processes. Eprocurement moves tendering, negotiation and purchasing processes to websites. Improvement to a PE's procurement performance can be realized through reduced costs and wider choice availed.

1.1.3 IFMIS and Procurement Performance

In the area of Procurement, procurement performance refers to quantitative and qualitative assessment of the degree to which the procurement functions and those employed therein achieve the general or specific objectives assigned to them (Lysons and Farrington, 2006). Quantitative assessment includes number of orders placed, reduction in lead times, price savings, and reduction of administrative costs. Where purchasing is regarded as clerical or commercial activity focus is on efficiency. Qualitative assessments on the other hand are subjective & intuitive contribution of purchasing to supplier goodwill, partnership sourcing, value analysis, and internal customer satisfaction. Where Procurement is regarded as strategic business function, the focus is on effectiveness.

The introduction of Integrated Financial Management Systems (IFMIS) has become a core component of financial reforms to promote efficiency, security of data management and comprehensive financial reporting. According to Bartel (2009), IFMIS provide an integrated computerized financial package to enhance the effectiveness and transparency of

public resource management by computerizing the budget management and accounting system for a government. It consists of several core sub-systems, which plan, process and report on the use of public resources. The scope and functionality of IFMIS can vary across countries, but sub- systems normally include accounting, budgeting, cash management, debt management and related core treasury systems. In addition to these core subsystems, some countries have chosen to expand their IFMIS with non-core sub-systems such as tax administration, procurement management, asset management, human resource and pay roll systems, pension and social security systems and other possible areas seen as supporting the core modules (Asselin and Srivastava, 2009).

The performance of procurement department has become a fierce debate in matters concerning service delivery in the civil service. Competency is highlighted as a factor, which has an impact on performance and can affect performance (Cornelia, Muhumuza & Basheka, 2010). The more the person's competences match the requirements of a job, the more effective the person will be performing. The scale of IFMIS may also vary and be limited to specific country-level institutions such as the public sector. However, IFMIS is generally meant to be used as a common system across government institutions, including in the more ambitious schemes for federal, state, and local governments. The integration of IFMIS across the board ensures that all users adhere to common standards, rules, and procedures, with the view to reducing risks of mismanagement of public resources.

1.1.4 Public Procurement in Kenya

The business activities of governments in public procurement have economic and political implications. Recent estimates suggest that between 8 and 25 per cent of the gross domestic

product (GDP) of the Organization for Economic Co-operation and Development (OECD) countries and 16 per cent of the European Union (EU) GDP is attributable to government purchases of goods or services (OECD, 2009).

In Kenya, PPOA states that public procurement system has been undergoing transformation consistent with the global trend since the mid-1990s (RoK, 2010). Owegi & Aligula (2006) argue that before these reforms, the legal framework governing public procurement was very amorphous, providing conducive environment for the perpetration of various ill practices in public procurement including the endemic corruption that characterized the system. The introduction of the Integrated Financial Management Information Systems (IFMIS) in public procurement is a noble idea to drive e-procurement as a reform measure, but only if it is implemented in a transparent, accountable manner and to its fullest with adequate relevant administrative structures and resources deployed to support the process (Owegi and Aligula, 2006).

According to the Accountant General Department's service charter, the IFMIS software was procured in 1998 to provide modern systems for effective financial management and accounting (RoK, 2009). However, the process of implementing has been slow because, out of thirteen modules, only three have been partially configured and operating in few Millennium Development Agendas (MDAs), a factor that has remained retrogressive force to the procurement reforms initiative that has been on for close to two decades. Reform initiatives in Kenya have centered on making the government procurement process more efficient, essentially by blocking the legal loopholes believed to be avenues for waste and rent seeking in the system. The development of IFMIS started in 1998. In February 2011, the Ministry of Finance (now The National Treasury) formulated the IFMIS Re-

engineering strategic plan 2011-2013 which provided strategic direction for the re-engineering, re-branding and re-packaging of IFMIS.

Its main objective is to improve the efficiency and effectiveness of the processes, involved in management of public funds. The ultimate goal of IFMIS is to enhance the quality of public service delivery by providing timely and accurate financial and accounting information across both the National and County Governments. One of the components of IFMIS is the Procure to pay (P2P) as an automated procurement process from requisition, tendering, contract award to payment. Consequently, much effort has been devoted in bringing together existing procurement regulations and directives into a single document, the Public Procurement and Disposal Act, (PPDA), 2005 (Njiraini & Moyi, 2006). However, streamlined legislation and IFMIS roll out have seemingly failed to sufficiently reform and improve the performance of public procurement in Kenya (Owegi and Aligula, 2006).

1.2 Statement of the Problem

The Government's development and integration of IFMIS to public finance management is a testimony of its commitment to see Kenya develop and serve its people better. IFMIS has been seen as a great breakthrough for Kenya's development. It is said to have moved the country from the predominantly manual process, which was prone to inefficiencies to an efficient and effective automated procurement environment (Government of Kenya, 2010). IFMIS now ensures visibility and accountability in the entire procurement process. Additionally, the National Treasury was expected to leverage on the benefits of e-procurement to enhance economic growth and development. This draws from the

recognition that an efficient public sector is pivotal for procurement cycle from requisition, tendering, contract award to payment. Its benefits touch on all facets of our society suppliers who can now bid online, quality service delivery to the public by IFMIS users in National and County governments, enhanced efficiency, and effectiveness in procurement and efficient management of our resources for the public good.

Studies on e-procurement adoption indicate that while other governments have encouraged public sector agencies to adopt e-Procurement in developed countries, its adoption does not appear to have been smooth and the rate of e-Procurement adoption success has been less than spectacular (Steinberg's, 2003). Others (Srinivasan, Lilien, and Rangaswamy, 2010) claim that government e-Procurement projects have been notoriously unsuccessful. In addition, the development and adoption of e-procurement has not been as easy as some of the solution providers have suggested, nor has it necessarily brought the anticipated savings. Furthermore, a study in the United Kingdom revealed that engaging suppliers in the process, especially smaller organizations, is also proving to be difficult given the level of investment expected in terms of providing catalogue information to buyers, and marketplaces using different technologies, platforms and business languages (Office of Government Commerce (OCG), 2012).

Locally, various studies have been undertaken in relation to e-procurement. To begin with, Orori (2011) undertook a study on factors that influence the introduction of e-procurement in retail industry: a survey of retail chain supermarkets in Kenya; Njoroge (2010) on factors influencing e-procurement practices in construction industry in Kenya and Mburu (2011) on the role of e-procurement in enhancing efficiency in telecommunication industry (A Case Study of Safaricom Limited Company-Kenya). Kassim (2012) investigated electronic

procurement and organizational performance among commercial state corporations in Kenya. He established that commercial state corporations in Kenya have adopted e-procurement but there are several functions they still perform manually. These include, short-listing of suppliers, call for proposals and tendering process. Miheso (2013) studied the adoption of Integrated Financial Management Information System (IFMIS) by the national government in Kenya. The study showed that on average adoption was above 50% with some going as high as 80%.

Based on the above review, no study to the knowledge of the research has looked at the impact of IFMIS adoption on public procurement in Kenya. To fill this gap, this study focused on the impact of IFMIS adoption on public procurement in Kenya. The study therefore answered the following questions: To what extent has IFMIS been adopted in public procurement and what is the impact of IFMIS adoption on public procurement in Kenya?

1.3 Research Objectives

The study was guided by the following objectives;

i. To determine the extent to which public institutions are using the system for procurement in Kenya.

ii. To establish the relationship between the adoption of IFMIS and public procurement performance in Kenya.

iii. To determine the challenges faced in IFMIS adoption on public procurement performance in Kenya.

1.4 Value of the Study

The findings of the study will be relevant to the Ministries in Kenya's strategic plan and operational plans in that it will give it the milestones in strategic measurements towards integrating IFMIS as a strategy for accountability and transparency and service provision in the public.

Public sector organizations may use the findings of this study to improve their IFMIS policies to achieve profits such as increased efficiency and cost savings (faster and cheaper) in government procurement and improved transparency (to reduce corruption) in procurement services. IFMIS projects are often part of the country's larger e-government efforts to better serve its citizens and businesses in digital economy.

The findings of the study may also serve as a benchmark to other organizations who intend to adopt IFMIS. It will enable them to better understand the role and effects of IFMIS in the performance of an organization.

Researchers will also benefit from the findings of this study since it will provide additional knowledge to the already existing literature on IFMIS. The findings and gaps of this study may act as ground for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the review of various studies that have been conducted by other researchers on IFMIS adoption and procurement. Among the areas reviewed, include IFMIS adoption, procurement practices, and challenges involved in the adoption of IFMIS.

2.2 Theoretical Framework

The following theoretical model guided this study; Task Technology Fit (TTF) Theory and Technology Acceptance Model.

2.2.1 Task Technology Fit (TTF) Theory

This theory contends that it is more likely to have a positive impact on individual performance and be used if the capabilities of Information Communication and Technology (ICT) match the tasks that the user must perform (Goodhue and Thompson, 1995). Goodhue and Thompson (1995) mention the factors that measure task-technology fit as; quality, locatability, authorization, and compatibility, eases of use/training, production timeliness, systems reliability and relationship with users. The model is useful in the analysis of various context of a diverse range of information systems including electronic commerce systems and combined with or used as an extension of other models related to information systems outcomes.

According to the theory of task-technology fit, the success of an information system should be related to the fit between task and technology, whereby success has been related to

individual performance (Goodhue and Thompson, 1995) and to group performance (Zigurs and Buckland, 1998). For group support systems, a specific theory of task-technology fit was developed (Zigurs and Buckland, 1998) and later tested by (Zigurs, Buckland, Connolly and Wilson, 1999) and detailed the requirements of group support systems to fit group tasks. For IFMIS, task-technology fit has been shown to be generally relevant, but more specific questions regarding the applicability of task-technology fit to IFMIS remain unanswered (Gebauer and Shaw, 2004).

2.2.2 Technology Acceptance Model

Theories and models used in studies related to the innovations, acceptance and use of new technology are many. For instance, focusing on the technological issues (Davis, 1989) advances the Technology Acceptance Model (TAM). This model relates the individuals' behavioural intentions and his/her ICT use. It is suggested that, the actual behaviour of a person is determined by his behavioural intention to use, which is in turn influenced by user's attitude toward and perceived usefulness of the technology. However attitude and perceived usefulness are both determined by ease of use. Adopting the TAM model requires the understanding of end-users requirements regarding usefulness and user friendliness (Pedersen, Leif, Methlie and Thorbjornsen, 2002). From this model, usefulness and user friendliness affect users' attitudes towards any service. Davis (1989; 1993), thus suggest that it is important to value user requirements based on perceived usefulness and the user friendliness of the technology rather than other objective measure.

According to the Technology Acceptance Model (TAM), perceived ease of use and perceived usefulness constructs are believed to be fundamental in determining the

acceptance and use of various Information Technology (IT). These beliefs may not fully explain the user's behaviour toward newly emerging IT, such as IFMIS. Using the TAM as a theoretical framework, Wang et al. (2003) introduces "perceived credibility" as a new factor that reflects the user's security and privacy concerns in the acceptance of IFMIS. The results strongly support the extended TAM in predicting the intention of users to adopt technology. It also demonstrates the significant effect of computer self-efficacy on behavioural intention through perceived ease of use, perceived usefulness, and perceived credibility (Wang et al., 2003).

2.3 IFMIS Adoption Subsystems

William (2003) argues that an IFMS is an information system that tracks financial events and summarizes financial information. In the private sector, such systems provide critical support for management and budget decisions, fiduciary responsibilities, and the preparation of financial reports and statements. In the government realm, IFMS systems must be designed to support distinctly public sector functions. They must be able to handle and communicate all the financial movements for the complex structure of budget organizations. The scale of the IFMS will also vary depending on whether its operation is limited to selected central-level institutions, such as the finance ministry and treasury, or is implemented more broadly, to include line ministries, their spending agencies, and even regional and local governments and municipalities. These variations will have implications far beyond the cost of hardware and software installation, Casals et al., (2004).

At the core of the system is the *General Ledger*. The General Ledger constitutes the central "books" of any IFMIS. Every transaction entered into the system posts to the General

Ledger, starting with the allocation of budget funds through to the commitments to payment for goods and services. All transactions should simultaneously post to the General Ledger and to all appropriate sub-ledgers/modules following the rules imposed by a standardized chart of accounts. These records remain as a permanent track of the history of all financial transactions, and represent the source from which all reports and financial statements are derived. In addition to the General Ledger, other core components and their main functions will generally include: Cash Management monitors and forecasts cash flows and financing requirements, and performs reconciliation between bank accounts and IFMIS records. Commitment control ensures that before a purchase is committed to, there is sufficient cash allocated for the expense and the allocation matches the appropriated budget. Accounts payable processes and generates payments, with built-in checks to ensure invoices match approved commitments. Accounts receivable produces bills and processes and records receipts, including all types of inflows received by government units, including nontax revenues and fees. Moreover, the functions the IFMIS may be called on to perform can vary from producing budgets and reports to managing procurements and grants to processing payments and receipts.

Diamond and Khemani (2008) further mention that all manner of reports can be generated; 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. Some systems have libraries consisting of hundreds of standard reports. Managers can use this information for a variety of purposes; to plan and formulate budgets; examine results against budgets and plans; manage cash balances; track the status of debts and receivables; monitor the use of fixed assets; monitor the performance of specific

departments or units; and make revisions and adjustments as necessary, to name a few. Reports can also be tailored to meet the reporting requirements set by external agencies and international institutions like the International Monetary Fund (IMF).

2.4 IFMIS and Procurement Performance

IFMIS can improve public financial management in a number of ways, but generally seeks to enhance confidence and credibility of the budget through greater comprehensiveness and transparency of information. The purpose of using an IFMIS is to improve budget planning and execution by providing timely and accurate data for budget management and decision-making (Chêne, 2009).

Christopher (2005) contended that there is a dimension to information that enables supply and demand to be matched in multiple markets, often with tailored products, in ever-shorter periods. This enables suppliers to react in real-time to market changes. IFMIS serves as the connection between various stages of the system, allowing them to co-ordinate and maximise total supply profitability. It is crucial to the daily operation of each stage in the procurement process. Kim and Rogers (2010) asserted that studies have examined business-to-business (B2B) transactions on different operational performance dimensions such as inventory cost, cycle time, and manufacturer flexibility. Rapid growth of importance of IFMIS application is a testimony to its impact on improving procurement performance. This is achieved through Internet, Intranet, and Extranet. However, organisations must make a trade-off between efficiency and responsiveness.

Bowersox, Closs, and Cooper (2013) argued that IFMIS provides the means for collecting relevant demand data, developing a common database, and providing a means for

transmitting order information. It allows organisations to change the way they source supplies for smooth operations. Automakers Ford Motor Company, Daimler Chrysler, and General Motors have transacted their businesses on Internet since year 2000 and registered positive results. Based on expected procurement efficiencies, the firms' procurement and product development costs fell by 16%, a reduction that resulted in saving approximately US $ 1,000 per motor vehicle.

Rebecca and Ravi (2007) sought to pursue the understanding of current business-to-business e-procurement practices by describing the success factors and challenges to its adoption in the corporate setting. The study through factor analysis resulted in three e-procurement success factors: supplier and contract management; end-user behaviour and eprocurement business processes; and information and e-procurement infrastructure. Three challenge-to-adoption factors also emerged lack of system integration and standardization issues; immaturity of e-procurement-based market services and end-user resistance; and maverick buying and difficulty in integrating e-commerce with other systems.

Gordon and Murray (2009) sought to establish perceived local government (LG) procurement best practice. Secondary research was then drawn upon to establish LG procurement's response to the economic recession. The study was set within the context of English LG. Its contribution is in highlighting that perceived best public procurement practice may well, in the short-term, be inappropriate and perhaps delay economic recovery. Suggestions for more radical short-term procurement strategic interventions were set out and justified as accelerating the economic recovery. The suggestions were considered appropriate, for not only the crisis, but also for future economic downturns or indeed any country facing such a situation. The analysis suggested that British LG

procurement strategy generally remain unaltered from that adopted prior to the economic recession. It is then argued that current best practice may well hinder an economic recovery and a short-term shift in procurement strategy is required.

Amayi (2011), in his study found that procurement operations require better performance control system. He asserted that a records management system that an organization adopts has effects on its procurement operations. The researcher concluded that without ethics the performance of procurement operations would be negatively affected and pointed out that existing legal framework was an impediment to the performance of operations in the public procurement. He further concluded that integrated ICT systems organize and disclose enormous amounts of information about the workings of the total system. While appreciating his findings, this study notes that the researcher did not employ the personal observation tool so as together data especially on ethics and integrity. Analysis of factors such as core technical skills and application of ICT in procurement management are important to overcome some of the constraints.

Kirungu (2002) in his study found that inefficiency in the supply chain (SC) was caused by bureaucratic procurement and disposal procedures, irrational supply base, adversarial customer-supplier relationships, and traditional storage operations. He recommended that Kenyatta National Hospital (KNH) procurement procedures be exempted from the Public Procurement Regulations, rationalization of the supply base, and partnership sourcing. This study concurs with his findings pertaining to supply base rationalization and relationships but wishes to point out that the research instruments used were limited to an interview and observations. No questionnaires were administered which could have given adequate data for analysis. It was further noted that senior managers were not interviewed and he failed to

employ records analysis method. This study does not support the recommendation that KNH procurement procedures be de-linked from public procurement legal framework because with appropriate staff and technology, performance in the entire public sector procurement system can be improved.

Maina (2011) in his study found that weak oversight and enforcement, non-transparent practices, lack of effective links between procurement and financial management, poor record management and filing system, and delays and inefficiencies on the adoption of the PPDA as factors influencing the adoption of the procurement law in Kenya, the case of Ministry of Education. The study concluded inefficiencies in procurement led to increased procurement costs, causing longer cycle times, lower quality purchasing decisions within the ministry. While appreciating his findings, this study does not support findings that poor record management system alone impedes performance. Ethical issues should also be put into perspective. Indeed, performance can still be improved if ICT is employed with modern control mechanisms. This study agrees with his recommendation that all stakeholders need to be sensitized on the good of embracing financial and procurement reforms.

2.5 Challenges Involved in the Adoption of IFMIS

The Financial Management Information System (IFMIS) is a government to government (G2G) or inter-agency relationship. It is the automation of the 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, agencies and other public sector operations (Rodin-Brown, 2008). A strong PFM system is a catalyst for economic growth and development. It ensures that the government and its

departments raise, manage, and spend public resources in an efficient and transparent way with the aim of improving service delivery.

Studies conducted in various countries such as Tanzania, Ghana, Uganda, Malawi, Kenya and Rwanda indicated that there are a number of challenges that may influence the successful adoption of an IFMIS (Diamond & Khemani, 2006; Rodin-Brown, 2008). Some of the most common challenges that may be faced by developing countries are;

Many IFMIS projects have failed because the basic system functionality was not clearly specified from the onset of the intervention. Chêne (2009) posits that an IFMIS must be carefully designed to meet the needs and functional requirements, including the accounting and financial management tasks the system should perform. A coherent legal framework governing the overall public finance system must underpin an IFMIS (Chêne, 2009). Amongst other things there should be clear legal guidance on the roles and responsibilities of all institutions in managing, controlling, and monitoring budget execution; the authorization, commitment and release of funds; the basis of accounting (cash or accrual); reporting requirements; and, asset management, public investment and borrowing (Rozner, 2008).

Indeje and Zheng (2010) contend that the introduction of a new information system fundamentally changes the way operations are carried out and therefore requires a carefully managed process. According to Peterson (1998), the commitment of senior managers is one of the most frequently cited factors deciding the success or failure of an information system. The effective adoption, operation, and maintenance of an IFMIS require staff with the necessary knowledge and skills. Farelo and Morris (2006) contend that the human

resource development issue within government needs prioritization, the education system needs to be aligned with the information and communication technologies (ICT) demands of the country and scarce ICT skills need to be attracted and retained particularly within government.

Table 2.1: Empirical Review

Author	Study	Findings	Research Gap
Gordon and Murray (2009)	Perceived local government (LG) procurement best practice	Best public procurement practice may well, in the short-term, be inappropriate and perhaps delay economic recovery. British LG procurement strategy generally remains unaltered from that adopted prior to the economic recession.	The study was restricted to a foreign company
Amayi (2011)	Factors Affecting Procurement in the Public Service: a Case Study of the State Law Office. Eldoret	Procurement operations require better performance control system.	The study did not look at the impact of IFMIS adoption on public procurement in Kenya
Kirungu (2002)	An Investigation of Possible Constraints to Efficient Management Of the Supply Chain in Government Hospitals. A Case Study for Kenyatta National Hospital. Mombasa	Inefficiency in the supply chain (SC) was caused by bureaucratic procurement and disposal procedures, irrational supply base, adversarial customer-supplier relationships, and traditional storage operations.	The study was restricted to the supply chain and not procurement
Maina (2011)	Factors Influencing the Adoption of the Public Procurement and Disposal Act, 2005 in Kenya: a Case on the Ministry of Education	Weak oversight and enforcement, non-transparent practices, lack of effective links between procurement and financial management, poor record management and filing system, and delays and inefficiencies on the adoption of the PPDA as factors influencing the adoption of the procurement law in Kenya, the case of Ministry of Education.	The study did not look at IFMIS in particular as well as its impact on IFMIS adoption on public procurement in Kenya

2.6 Summary of Literature

The review of literature above points out that IFMS is an information system that tracks financial events and summarizes financial information. It consists of several core sub-systems, which plan, process and report on the use of public resources. The sub-systems normally include accounting, budgeting, cash management, debt management and related core treasury systems, tax administration, procurement management, asset management, human resource and pay roll systems, pension and social security systems. The scale of the IFMIS therefore varies depending on whether its operation is limited to selected central-level institutions or is implemented more broadly, to include line ministries, their spending agencies, and even regional and local governments and municipalities.

IFMIS has been argued as providing management tools, a wide range of non-financial and financial information and mitigates corruption. According to studies by Hove and Wynne (2010), Diamond and Khemani (2006), Rodin-Brown (2008), Rebecca and Ravi (2007) IFMIS automates the procurement function of an organization leading to various benefits such as resources control allowing an organization to co-ordinate and maximise total supply profitability. Amayi (2011) notes that integrated ICT systems organize and disclose enormous amounts of information about the workings of the total system. Maina (2011) study concluded inefficiencies in procurement led to increased procurement costs, causing longer cycle times, lower quality purchasing decisions within the ministry.

The literature review largely looks at the contributions of IFMIs to an organization. It also points out areas of weaknesses in the procurement systems of an organization. However, it does not comprehensively bring out the extent to which IFMIS has been adopted in public

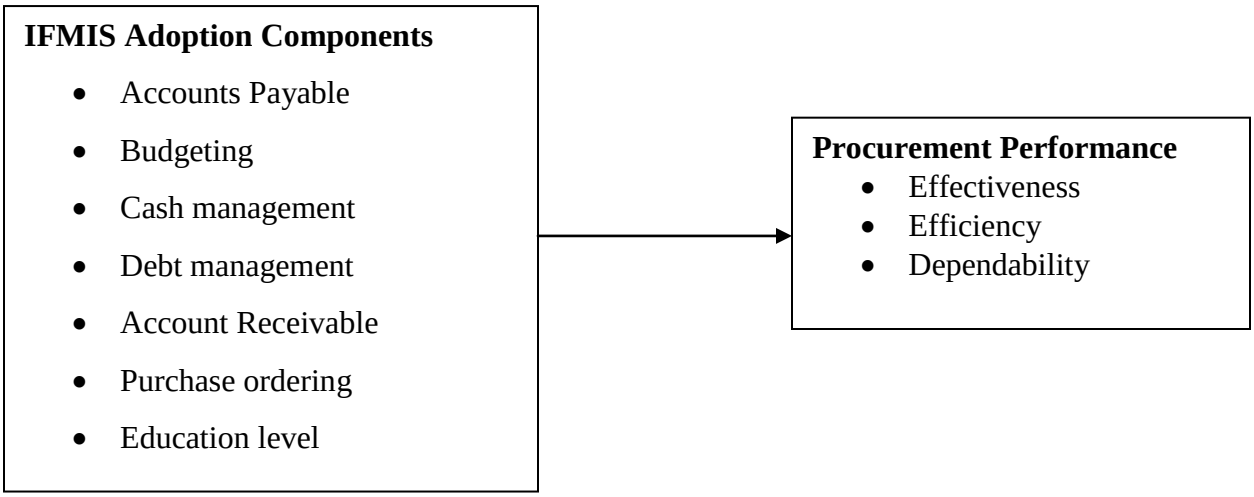
procurement and its impact on public procurement in Kenya. This study therefore sought to fill this gap by investigating the impact of IFMIS adoption on public procurement in Kenya with a focus on Government Ministries.

2.7 Conceptual Framework

The study was based on a conceptual model developed by the researcher so as to help identify the answers in the study. The dependent variable for the study was procurement performance while the independent variable was IFMIS adoption practices. The framework supposed that the presence or absence of the indicated independent variables would determine the ability of government ministries to improve the procurement output.

Figure 2.1: Conceptual Framework

Independent Variables **Dependent Variables**



Source: Author, 2015

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the overall methodology that was used to carry out this research study. It embodies the research design, population under consideration, sampling design, data collection methods, research procedures and the methodology that the researcher employed in the study.

3.2 Research Design

The study adopted a descriptive research design. Mugenda & Mugenda (1999) state that the design provides an in-depth account of events, relationships, experience or processes accruing in that particular instance. Therefore this design was adopted since it provided an opportunity for in-depth study into impact of IFMIS adoption on public procurement in Kenya.

3.3 Population

For the purposes of this study, the population of interest was all the 19 Government Ministries in Kenya (Appendix II). Given the small size, a census was done.

3.4 Data Collection

Primary data was collected for the purpose of this study. It was collected using interviewer administered questionnaires to two respondents in each of the 19 government ministries making to a total of 38 respondents. The questionnaires were piloted with three subject

experts before final administration. This was done to cross verify the contents, structure and nature of the questions asked and improve validity (Mitchell, 1996). Administration of the questionnaire was on a drop and pick basis. The study solicited data from chief procurement officers and IT managers in the target institutions. Sections A of the questionnaire contain information on respondents' details and organizations under study. Section B contains questions on extent of IFMIS adoption on public procurement performance in Kenya. Section C contains questions on the impact of IFMIS adoption on public procurement in Kenya. Section D contains questions on the challenges faced in IFMIS adoption on public procurement in Kenya.

3.6 Data Analysis

The filled questionnaires were inspected for completeness and edited. Descriptive statistics: regression analysis was used to determine the effect of IFMIS on the procurement processes in Ministries from information contained in the questionnaire. Standard deviation, range and co-efficient of variation was used to determine the challenges in implementing the IFMIS using data contained in the questionnaire. In addition, content analysis was used to analyze qualitative information collected in the survey. This was used to support the results of quantitative analysis in drawing conclusions and recommendations. The data collected from this study was mainly presented using, tables.

3.6.1 Analytical Model

The data analysis also used inferential statistics to make decisions or inferences by interpreting the data patterns to impact of IFMIS adoption on public procurement in Kenya.

Inferential statistics included linear regression analyses, and ANOVA. The following regression model was used to establish the impact of IFMIS adoption on public procurement in Kenya:

$$Y=\beta_0 +\beta_1 (X_1) +\beta_2 (X_2) +\beta_3 (X_3) +\beta_4 (X_4) +\beta_5 (X_5) + \beta_6 (X_6) +\varepsilon$$

Where:

Y = Procurement performance

X_1= Accounts Receivable

X_2=Budgeting

X_3=Cash management

X_4=Accounts Payable

X_5=Purchase ordering

X_6= Education level

β_0 is the regression constant

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$and $\beta 5$ are the coefficients of independent variables,

$\boldsymbol{\varepsilon}$: Standard Error term.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides the details as regards data analysis results and discussions of the study findings as set out in the research objective and research methodology. The study sought to establish the extent to which IFMIS been adopted in public procurement and its impact on public procurement in Kenya. The study made use of frequencies (absolute and relative) on single response questions. On multiple response questions, the study used Likert scale in collecting and analyzing the data whereby a scale of 5 points were used in computing the means and standard deviations.

4.2 General Information

The study targeted a sample size of 38 chief procurement officers and IT managers in the target institutions respondents from which 35 filled in and returned the questionnaires making a response rate of 93%. The response rate was representative as according to (Mugenda, 1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was considered to be excellent and satisfactory to make conclusions for the study.

The findings confirmed that majority (53.3%) was male and 46.7 % were female. This implies that even though most of the responses emanated from males there was gender balance.

In regard to their age, the results show that 7 were below 20 years, 9 were 21-30 years, 12 were 31-40 years, 8 were 41-50 years and 4 were above 51 years. This depicts that most of the staff were 31-40 years old.

In terms of their education level, the study findings show that 71% were graduates and 29% were post graduate. This depicts that all respondents had attained university education.

The study found that 11 had 1-5 years of service/working period, 18 had 6-10 years, and 6 had more than 10 years. This illustrates that the most of the respondents have worked for their organization for a reasonable period of time and therefore had accumulated a lot of knowledge and skills over time.

According to the findings, majority of the respondents (57%) were from the ICT department and 43% were from the procurement department. This information shows that the respondents were drawn from the targeted departments.

The results of the analysis reveal that, 20 of the respondents were ICT manager/head while 15 are Procurement manager/head. This implies that the targeted respondents were reached with majority of the respondents being ICT manager/head.

4.3 Extent of IFMIS Use for Procurement in Kenya.

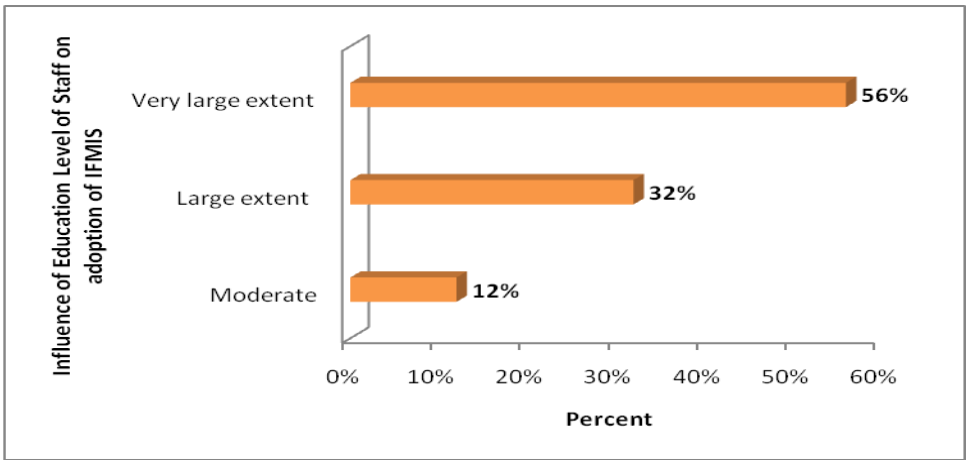
4.3.1 Adoption of IFMIS by the Ministries

The study sought to determine whether the ministry had adopted IFMIS. Accordingly, all the respondents agreed that IFMIS was being used in the ministry.

4.3.2 Influence of Education Level of Staff in the Ministry on adoption of IFMIS

The respondents were asked to indicate the extent to which education level of staff in their organization influence adoption of IFMIS. The findings are as illustrated in Figure 4.2.

Figure 4.2: Influence of Education Level of Staff in the Ministry on adoption of IFMIS



As per the findings, majority (56%) of the respondents were of the view that education level of staff in their organization influence adoption of IFMIS to a very large extent, followed by 32% to a large extent and only 12% said education level of staff in their organization influence adoption of IFMIS moderately. Thus, it can be deduced that education level of staff influences adoption of IFMIS.

4.3.3 Extent of Adoption of Components of IFMIS in Respondents Organization

The study sought to establish the extent to which components of IFMIS had been adopted in the Ministries. Respondents were therefore asked to rate the extent to which each of the component has been adopted in their organization. The responses were placed on a five

Likert scale; where 1= no extent, 2= little extent, 3= moderate, 4= large extent and 5 is to a very large extent and the findings tabulated herein.

1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree.

Table 4.2: Extent of Adoption of Components of IFMIS in Respondents Organization

	Mean	Coeff. of Var.
Asset management	4.19	9%
Human resource	4.22	7%
Pay roll systems	4.31	15%
Pension systems	4.36	5%
Social security systems	4.41	3%
Tax administration	4.43	3%
Debt management	4.46	3%
Cash management	4.47	2%
Procurement management	4.48	2%
Budgeting	4.59	7%
Accounts Payable	4.64	11%
Accounting	4.68	0%
Accounts Receivable	4.71	7%
General Ledger (GL)	4.77	3%
Purchase Ordering	4.81	2%

The findings depict that the respondents strongly agreed that components of IFMIS had been adopted in the Ministries including; D Purchase Ordering (mean=4.81). General Ledger (GL) (mean=4.77). Accounts Receivable (mean= 4.71). Accounting (mean= 4.68). Accounts Payable (mean= 4.64). Budgeting (mean= 4.59). Procurement management (mean= 4.48). Cash management (mean= 4.47). Debt management (mean= 4.46). Tax administration (mean= 4.43). Social security systems (mean= 4.41). Pension systems (mean= 4.36). Pay roll systems (mean=4.31). Human resource (mean=4.22). Asset management (mean=4.19) respectively.

The findings imply that the various components of IFMIS have been adopted in the respondents organizations with Purchase Ordering being the most widely adopted component across the ministries. Likewise, Diamond and Khemani (2005) said that an IFMIS consists of several elements with different functions. He identified the core of an IFMIS to include 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.

4.4 IFMIS and Public Procurement Performance in Kenya.

The study investigated the influence of adoption of IFMIS on procurement performance in this ministry. In this case respondents were asked to rate their level of agreement with statements relating to influence of adoption of IFMIS on procurement performance in their ministry. The findings are presented below.

4.4.1 Influence of IFMIS Cash management on Procurement Performance

Table 4.3: Influence of IFMIS Cash management on Procurement Performance

Cash management	**Mean**	**Coeff. of Var.**
Handles multi currency bank accounts and transactions	3.846	24%
Sets up reference data on: Banks, Banks Accounts, Approval Limits, Exchange rates, Check number ranges by bank account.	3.914	22%
Monitors overdraft balances against limits.	3.933	22%
Controls the processing of check payments within a user defined range of check numbers for each bank account.	4.029	20%
Preparation of bank account reconciliation statements with reference to the book balance and uncleared items.	4.077	21%
Matches cash/check receipts to related invoices booked in the MIS Accounts Receivable System and provide integration for updating the sales ledger for a full or part settlement of an invoice.	4.183	18%
Provides capability to manually input items, or group of items, of expected cash flow and outflow	4.244	6%
Facilitates processing and printing of cheques.	4.351	14%
Matches cash/check payments to related vendor invoices booked in the MIS Accounts Payable System and provide integration for updating the vendor's ledger for a full or part settlement of an invoice.	4.692	14%
Overall	**4.141**	**18%**

The findings in Table 4.3 depict that the respondents strongly agreed that IFMIS Cash management positively influences Procurement Performance by; Matching

cash/check payments to related vendor invoices booked in the MIS Accounts Payable System and provide integration for updating the vendor's ledger for a full or part settlement of an invoice (mean=4.692). This was followed by; Facilitates processing and printing of cheques (mean= 4.351). Provides capability to manually input items, or group of items, of expected cash flow and outflow (mean= 4.244). Matches cash/check receipts to related invoices booked in the MIS Accounts Receivable System and provide integration for updating the sales ledger for a full or part settlement of an invoice (mean= 4.183). Preparation of bank account reconciliation statements with reference to the book balance and uncleared items (mean= 4.077). Controls the processing of check payments within a user defined range of check numbers for each bank account (mean= 4.029). Monitors overdraft balances against limits (mean=3.933). Sets up reference data on: Banks, Banks Accounts, Approval Limits, Exchange rates, Check number ranges by bank account (mean= 3.914). Handles multi currency bank accounts and transactions (mean= 3.846).

In general the respondents agreed that IFMIS Cash management positively influences Procurement Performance (mean=4.141) especially by matching cash/check payments to related vendor invoices booked in the MIS Accounts Payable System and provide integration for updating the vendor's ledger for a full or part settlement of an invoice. Correspondingly Rodin-Brown (2008) noted that Cash Management module of the IFMIS system monitors and forecasts cash flows and financing requirements, and performs reconciliation between bank accounts and IFMIS records.

4.4.2 Influence of IFMIS Budgeting on Procurement Performance

Table 4.4: Influence of IFMIS Budgeting on Procurement Performance

Budgeting	Mean	Coeff. of Var.
Reducing risks of mismanagement of public resources	4.07	3%
Fully Integrates with General Ledger System	4.09	9%
Maintains Budget Distributed and Budget Committed	4.18	2%
Enables copying old budgets to build new budget balances	4.36	2%
Posts Budget accounts to General Ledger to become opening balances	4.42	4%
Maintains details of every account i.e. quantities and prices	4.45	3%
Enables some accounts to exceed Budget allocated if required	4.49	10%
Distributes Budgets for one period or more than one period per year	4.51	8%
Maintains multiple budgets for one period	4.62	2%
Overall	**4.35**	5%

As per the findings in Table 4.4 above, the respondents strongly agreed that IFMIS influences procurement budgeting performance by maintaining multiple budgets for one period (mean=4.62). Coming in next was distributes Budgets for one period or more than one period per year (mean=4.51). Enables some accounts to exceed Budget allocated if required (mean=4.49). Maintains details of every account i.e. quantities and prices (mean=4.45). Posts budget accounts to general ledger to become opening balances (mean=4.42). Enables copying old budgets to build new budget balances (mean=4.36). They also agreed that it maintains budget distributed and budget committed (mean=4.18). Fully Integrates with general ledger system (mean=4.09) and reducing risks of mismanagement of public resources (mean=4.07).

Looking at budgeting as a whole, the findings depict that IFMIS strongly influences procurement performance (mean=4.35). Similarly, Peterson et al., (1996) observes that an IFMIS budget module sets ceilings. Budgetary control requires that an adjusted budget be maintained at all times, and that it is available at the end of the fiscal year for the prompt closure of accounts.

4.4.3 Influence of IFMIS Accounts Payable on Procurement Performance

Table 4.5: Influence of IFMIS Accounts Payable on Procurement Performance

Accounts Payable	Mean	Coeff. of Var.
Provides a flexible parameter driven set-up of the system depending on the company business requirements and rules.	4.04	5%
Supports multiple currencies.	4.11	3%
Supports multiple open calendars and each calendar has multiple periods.	4.13	4%
Performs automatic voucher numbering as defined by the user.	4.27	8%
Accepts manually entered voucher numbers.	4.32	10%
Provides analysis by type of vendors/parties.	4.33	4%
Supports multiple Accounts by party.	4.36	7%
Supports all types of settlements.	4.38	3%
Supports flexible ageing analysis.	4.44	10%
Overall	4.26	6%

From the findings, majority of the respondents strongly agreed IFMIS mostly influences procurement performance through the accounts payable by supporting flexible ageing analysis (mean=4.44). Supports all types of settlements (mean= 4.38). Supports multiple Accounts by party (mean= 4.36). Provides analysis by type of vendors/parties (mean=

4.33). Accepts manually entered voucher numbers (mean= 4.32). Performs automatic voucher numbering as defined by the user (mean= 4.27). Supports multiple open calendars and each calendar has multiple periods (mean= 4.13). Supports multiple currencies (mean= 4.11). Provides a flexible parameter driven set-up of the system depending on the company business requirements and rules (mean= 4.32) respectively.

In general IFMIS accounts payable positively influences procurement performance (mean=4.26) mainly by supporting flexible ageing analysis. On the same note, Rodin-Brown (2008) posits that accounts payable processes and generates payments, with built-in checks to ensure invoices match approved commitments.

4.4.4 Influence of IFMIS Accounts Payable on Procurement Performance

Table 4.6: Influence of IFMIS Accounts Receivable on Procurement Performance

Accounts Receivable	**Mean**	**Coeff. of V**
Distribution of party accounts balances by cost center and/or activity, providing the basis for cost / activity analysis.	3.89	11%
Supports payment terms by customer.	4.08	3%
Supports all types of settlements.	4.09	10%
Supports flexible ageing analysis.	4.11	6%
Provides the utility to design layout for invoices	4.16	6%
Automatic voucher numbering as defined by the user.	4.55	8%
Accepts manually entered voucher numbers.	4.59	4%
Enforces control on customer credit limit.	4.66	3%
Supports multiple accounts by party.	4.68	3%
Overall	**4.31**	6%

According to the findings in Table 4.6, majority of the respondents strongly agreed that IFMIS mostly influences procurement performance through the accounts receivable by; Supports multiple accounts by party (mean=4.68). This was followed by; Enforces control on customer credit limit (mean= 4.66). Accepts manually entered voucher numbers (mean= 4.59). Automatic voucher numbering as defined by the user (mean= 4.55). They also agreed that it provides the utility to design layout for invoices (mean= 4.16). Supports flexible ageing analysis (mean= 4.11). Supports all types of settlements (mean= 4.09). Supports payment terms by customer (mean= 4.08). Distribution of party accounts balances by cost center and/or activity, providing the basis for cost / activity analysis (mean=3.89).

In addition, the findings reveal that IFMIS accounts receivable has a positive influence on procurement performance through the accounts receivable (mean=4.31) particularly with regard to supporting multiple accounts by party. In addition, Rodin-Brown (2008) posits that accounts receivable produces bills and processes and records receipts, including all types of inflows received by government units, including nontax revenues and fees.

4.4.5 Influence of IFMIS Purchase ordering on Procurement Performance

Table 4.7: Influence of IFMIS Purchase ordering on Procurement Performance

Purchase ordering	**Mean**	**Coeff. of Var.**
Keeps a history of the relation between multiple vendors and particular items and vice versa in terms of (prices , delivery time , ...).	3.86	31%
Provides the user with the facility of designing very complex layouts for the printing of the vendor purchase orders.	4.01	19%
Supports all types of purchase orders (local and foreign).	4.05	21%
Provides the facility for automatically generating vendor purchase orders depending on a selected criteria such as (re-order level, min level .....).	4.18	20%
Follows the status of purchase orders, starting from issuing the order until goods are completely received.	4.24	18%
Provides the Facility of manually closing a purchase order whenever the user feels it is appropriate even if it is not fully received.	4.26	9%
Increase number of orders placed	4.30	5%
Reduction in lead times	4.36	8%
Improved supplier goodwill	4.37	6%
Reduction of administrative costs	4.49	7%
Blocking the legal loopholes believed to be avenues for waste	4.51	6%
Overall	**4.24**	**13%**

The findings in the Table 4.7, most of the respondents strongly agreed that the most influential IFMIS Purchase ordering on Procurement Performance is; Blocking the legal loopholes believed to be avenues for waste (mean=4.51). Others were reduction of administrative costs (mean= 4.49). Improved supplier goodwill (mean= 4.37). Reduction in lead times (mean=4.36). Increase number of orders placed (mean=4.30). Provides the

Facility of manually closing a purchase order whenever the user feels it is appropriate even if it is not fully received (mean= 4.26). Follows the status of purchase orders, starting from issuing the order until goods are completely received (mean=4.24). They also agreed that it provides the facility for automatically generating vendor purchase orders depending on a selected criteria such as (re-order level, min level) (mean= 4.18). Supports all types of purchase orders (local and foreign) (mean=4.05). Provides the user with the facility of designing very complex layouts for the printing of the vendor purchase orders (mean=4.01). Keeps a history of the relation between multiple vendors and particular items and vice versa in terms of (prices , delivery time) (mean= 3.89).

The findings also revealed that IFMIS has a positive influence on procurement performance through purchase ordering (mean=4.24) particularly by blocking the legal loopholes believed to be avenues for waste. Accordingly, Rodin-Brown (2008) note that Commitment control ensures that before a purchase is committed to, there is sufficient cash allocated for the expense, and the allocation matches the appropriated budget.

4.5 Challenges Involved in the Adoption of IFMIS

The study also requested the respondents to indicate their level of agreement with statements that relate to the factors affecting adoption of Integrated Financial Management Information Systems in their ministry. The findings are as tabulated below.

Table 4.8: Challenges Involved in the Adoption of IFMIS

	Mean	Coeff. of Var.
Employee commitment	3.86	31%
High-level officials who lack incentives for reform	3.86	19%
Training/capacity building	3.89	21%
Procedural changes	3.97	20%
Lack of staff with IT knowledge and experience	3.99	18%
reporting accountability	4.01	9%
Commitment of senior managers	4.02	5%
Governance system	4.05	8%
Organisational arrangements	4.09	6%
ICT infrastructure	4.11	7%
Human resources available	4.11	6%
Legal framework	4.16	13%
Top management support	4.20	31%
Incentives structure	4.20	19%
Business functional processes	4.22	21%
Continuous participation from the direct users of the system and other stakeholders in all phases of the project	4.24	20%
Mid-level management's commitment to reform	4.29	18%
Lack or little co-ordination between the teams	4.31	9%
Project commitment at the highest levels of the political system	4.33	5%
Type of systems that will be implemented (off-the-shelf or custom-built)	4.35	8%
Legal framework in place	4.38	6%
The complexity of the system	4.42	7%
Bureaucracy	4.56	6%

The findings in table 4.8 above indicate that the respondents strongly agreed that the major challenges involved in the adoption of IFMIS was; Bureaucracy (mean=4.56). This was followed by the complexity of the system (mean=4.42). Legal framework in place (mean=4. 38). Type of systems that will be implemented (off-the-shelf or custom-built) (mean=4.35). Project commitment at the highest levels of the political system (mean=4.33). Lack or little co-ordination between the teams (mean=4.31). Mid-level management's commitment to reform (mean=4.29). Continuous participation from the direct users of the system and other stakeholders in all phases of the project (mean=4.24). Business functional processes (mean=4.22). Incentives structure and Top management support (mean=4.20 each). Legal framework (mean=4.16). Human resources available and ICT infrastructure (mean=4.11 each). Organisational arrangements (mean=4.09). Governance system (mean=4.05). Commitment of senior managers (mean=4.02). Reporting accountability (mean=4.01). Lack of staff with IT knowledge and experience (mean=3.99). Procedural changes (mean=3.97). Training/capacity building (mean=3.89). High-level officials who lack incentives for reform and Employee commitment (mean=3.86 each).

The findings depict that a myriad of challenges are faced in the adoption of IFMIS. The most outstanding challenges are bureaucracy, complexity of the system, legal framework in place, type of systems that will be implemented (off-the-shelf or custom-built), project commitment at the highest levels of the political system as well as lack or little co-ordination between the teams. Concurrently, Alshehri and Drew (2010) said that the key challenges affecting e-government adoption are technical barriers, such as ICT Infrastructure and privacy, security and trust in e-services, organisational barriers such as a lack of qualified personnel and training, resistance to change, lack of policy and regulation

for e-usage, lack of programs to promote e-government benefits and advantages, and lack of strategic planning, social barriers such as culture, barriers caused by lack of support from leaders and management financial barriers.

4.6 Relationship between IFMIS adoption and Public Procurement Performance in Kenya

The researcher conducted a multiple regression analysis so as to test relationship among variables (independent) on public procurement performance. The researcher applied the statistical package for social sciences (SPSS V 20.0) to code, enter and compute the measurements of the multiple regressions for the study.

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 (public procurement performance) that is explained by all the six independent variables (accounts receivable, budgeting, cash management, accounts payable, purchase ordering and education level).

Table 4.9: **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.919	0.845	0.789	0.6273

(Source: Author, 2015)

The six independent variables that were studied, explain only 84.5% of the public procurement performance as represented by the R^2. This therefore means that other factors not studied in this research contribute 15.5% to the public procurement performance.

Therefore, further research should be conducted to investigate the other factors (15.5%) that affect public procurement performance.

ANOVA Results

Table 4.10 ANOVA of the Regression

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	2.534	42	1.267	9.475	.0031
	Residual	9.307	79	2.327		
	Total	**11.841**	**121**			

(Source: Author, 2015)

The F critical at 5% level of significance was 3.11. Since F calculated is greater than the F critical (value = 9.475), this shows that the overall model was significant. The significance value of 0.0031 obtained implies that the regression model was significant in predicting the relationship between public procurement performance in Kenya and the predictor variables as it was less than $\alpha = 0.05$. This significance level means that the chances are almost zero that the results of the regression model were due to random exogenous events instead of the true relationship existing in the model.

Model Output

Table 4.11 Beta Coefficient of Determination

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.147	0.2235		5.132	0.000
	Education level	0.886	0.0971	0.862	7.667	0.02
	Budgeting	0.752	0.1032	0.7032	7.287	.011
	Accounts payable	0.587	0.3425	0.4425	3.418	.018
	Accounts receivable	0.645	0.2178	0.5178	4.626	.024
	Purchase ordering	0.539	0.1937	0.4037	4.685	.031
	Cash management	0.495	0.1287	0.4011	4.1339	0.027

(Source: Author, 2015)

Multiple regression analysis was conducted as to determine the relationship between public procurement performance in Kenya and the six variables. As per the SPSS generated table below, regression equation

(**Y =** $\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_{5+} \beta_6X_{6+} \varepsilon$) becomes:

($Y= 1.147+0.886X_1 + 0.752X_2+ 0.587X_3+ 0.645X_4+ 0.539X_5 + 0.495\ X_6 + \varepsilon$)

According to the regression equation established, taking all factors into account (accounts receivable, budgeting, cash management, accounts payable, purchase ordering and

education level) constant at zero, public procurement performance in Kenya will be 1.147. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in education level will lead to a 0.886 increase in public procurement performance in Kenya. A unit increase in budgeting will lead to a 0.752 increase in public procurement performance in Kenya. A unit increase in accounts payable will lead to a 0.587 increase in public procurement performance in Kenya. A unit increase in accounts payable will lead to a 0.587 increase in public procurement performance in Kenya. A unit increase in purchase ordering will lead to a 0.539 increase in public procurement performance in Kenya, while a unit increase in cash management will lead to a 0.495 increase in public procurement performance in Kenya.

This infers that education level contributes the most to the public procurement performance followed by budgeting, accounts receivable, accounts payable, purchase ordering and cash management respectively. At 5% level of significance and 95% level of confidence, all the variables significantly influence procurement performance in Kenya.

CHAPTER FIVE: SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary, conclusion and recommendations on the the impact of Integrated Financial Management Information System (IFMIS) adoption on public procurement performance in Kenya.

5.2 Summary of Findings

The study found out that IFMIS was being used in the ministries including; purchase ordering, general ledger (GL), accounts receivable, accounting, accounts payable, budgeting, procurement management, cash management, debt management tax administration, social security systems, pension systems, pay roll systems, human resource, asset management respectively. Education level of staff was found to greatly influence adoption of IFMIS in which in turn is a key determinant of the public procurement performance.

The study established that that IFMIS Cash management positively influences Procurement Performance especially by matching cash/ check payments to related vendor invoices booked in the MIS Accounts Payable System and provide integration for updating the vendor's ledger for a full or part settlement of an invoice. In relation to budgeting the study revealed that IFMIS strongly influences procurement performance (mean=4.35) with the most influential aspect of IFMIS budgeting being that it maintains multiple budgets for one period.

In general, IFMIS accounts payable positively influences procurement performance mainly by supporting flexible ageing analysis. In addition, the study revealed that IFMIS accounts receivable has a positive influence on procurement performance through the accounts receivable particularly with regard to supporting multiple accounts by party.

IFMIS was found to have a positive influence on procurement performance through purchase ordering particularly by blocking the legal loopholes believed to be avenues for waste. The study also established that a myriad of challenges are faced in the adoption of IFMIS. The most outstanding challenges are bureaucracy, complexity of the system, legal framework in place, type of systems that will be implemented (off-the-shelf or custom-built), project commitment at the highest levels of the political system as well as lack or little co-ordination between the teams.

5.3 Conclusion

The study concludes that the various components of IFMIS have been adopted in the government ministries. They include; purchase ordering, general ledger (GL), accounts receivable, accounting, accounts payable, budgeting, procurement management, cash management, debt management tax administration, social security systems, pension systems, pay roll systems, human resource, asset management respectively.

The study also concludes that budgeting, accounts receivable, accounts payable, purchase ordering and cash management all have a positive and significant effect on procurement performance in Kenya. Education level contributes the most to the public procurement performance followed by budgeting, accounts receivable, accounts payable, purchase ordering and cash management respectively.

The study finally concludes that that a myriad of challenges are faced in the adoption of IFMIS. The most outstanding challenges are bureaucracy, complexity of the system, legal framework in place, type of systems that will be implemented (off-the-shelf or custom-built), project commitment at the highest levels of the political system as well as lack or little co-ordination between the teams.

5.4 Recommendations

The ministries should fully commit itself to see that the implementation of IFMIS is running smoothly without any challenges from the organization structures. However, it was noted that managers are supporting the implementation of the IFMIS due to the benefit that they may accrue if the system if fully functional.

Inadequate funding was highlighted as a challenge that is impeding the implementation of IFMIS. The study found that the cost of implementation was not fully funded and this led to the stalling of the implementation. It is therefore recommended that the ministry of finance should increase the budget for IFMIS implementation in order to roll out the program.

The government of Kenya should ensure that there is staff facilitation and motivation for appropriate capacity building and sustainability of the program.

The government of Kenya through ministry of finance should make use of competent firms and consultants to support the implementation and for effective change management.

5.5 Limitations of the Study

The researcher analyzed only the extent to which IFMIS been adopted in public procurement and its impact on public procurement in Kenya. Factors which also had influenced the system adoption but in a less significant manner were not analysed because of the limited time frame of the study.

The researcher restricted the study to the various Government Ministries that are based at the Headquarters, Nairobi region. However, IFMIS application has also been rolled out to other departments in the field offices outside Nairobi -though at a lesser extent.

The researcher used a sample of thirty-eight senior procurement and ICT ministry officials to obtain data from and generalize the findings as representing the whole population. This sample may not be fully representative of the population since more ICT officials than procurement officers were selected.

5.5 Suggestions for Further Research

The researcher analyzed six major factors that were believed to have significantly affected IFMIS adoption. Further research could be conducted by incorporating more factors (variables).

The study population involved the Government Ministries based at the Head Offices in Nairobi. Further study could be undertaken by involving other regions or departments in the country. The researcher obtained a sample composed of two senior officers from each ministry directly involved in IFMIS implementation. Perhaps a more expanded scope whereby all staff are involved, could form a basis for further research.

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APPENDICES

Appendix I: Questionnaire

This research is in partial fulfillment of requirements for a degree in Masters of Business Administration from the University of Nairobi and I will be most grateful if you could kindly complete this questionnaire. Kindly answer the following questions by ticking in the appropriate box or filling the spaces provided. The information given here will only be used for purposes of this study and will be treated with utmost confidentiality. Your cooperation will be highly appreciated.

Part A: General Information

1. What is your gender?

   Male [ ] Female [ ]

2. Indicate your age category:

   Below 20 years [ ] 41-50 years [ ]

   21-30 years [ ] 31-40 years [ ]

   Above 51 years [ ]

3. What is your highest level of education?

   Post Graduate [ ] Diploma [ ]

   Graduate [ ] Certificate [ ]

   Any other (specify)……

4. Years of service/working period (Tick as applicable)

   Less than 1 year [ ] 6-10 years [ ]

   1-5 years [ ] Over 10 years [ ]

5. Indicate your Department

   Procurement [ ] Finance [ ]

   ICT [ ] Other (Specify)……

6. Please indicate your designation

   Procurement manager/head [ ] Finance manager/head [ ]

   ICT manager/head [ ]

   Other (Specify)……

Part B: Extent to which Public Institutions are using the System for Procurement in Kenya.

7. Has the ministry implemented IFMIS?

   Yes [ ] No [ ]

8. To what extent does education level of staff in your organization influence adoption of IFMIS?

   No extent [ ]

   Little extent [ ]

Moderate [ ]

Large extent [ ]

Very large extent [ ]

9. The following statements relate to components of IFMIS. Rate the extent to which each of the component has been implemented in your organization. where 1= no extent, 2= little extent, 3= moderate, 4= large extent and 5 is to a very large extent

	1	**2**	**3**	**4**	**5**
Accounting					
Budgeting					
Cash management					
Debt management					
Tax administration					
Procurement management					
Asset management					
Human resource					
Pay roll systems					
Pension systems					
Social security systems					
Purchase Ordering					
Accounts Payable					
Accounts Receivable					
General Ledger (GL)					

Part C: IFMIS and Public Procurement Performance in Kenya.

10. To what extent do the following aspects of influence of adoption of IFMIS on procurement performance in this ministry? Rate on a scale of 1 to 5 where 1= no extent, 2= little extent, 3= moderate, 4= large extent and 5 is to a very large extent

Cash management	**1**	**2**	**3**	**4**	**5**
Handles multi currency bank accounts and transactions					
Sets up reference data on: Banks, Banks Accounts, Approval Limits, Exchange rates, Check number ranges by bank account.					
Monitors overdraft balances against limits.					
Controls the processing of check payments within a user defined range of check numbers for each bank account.					
Preparation of bank account reconciliation statements with reference to the book balance and uncleared items.					
Matches cash/check receipts to related invoices booked in the MIS Accounts Receivable System and provide integration for updating the sales ledger for a full or part settlement of an invoice.					
Matches cash/check payments to related vendor invoices booked in the MIS Accounts Payable System and provide integration for updating the vendor's ledger for a full or part settlement of an invoice.					
Facilitates processing and printing of cheques.					
Provides capability to manually input items, or group of items, of expected cash flow and outflow					
Budgeting	**1**	**2**	**3**	**4**	**5**
Maintains multiple budgets for one period					
Distributes Budgets for one period or more than one period per year					
Enables some accounts to exceed Budget allocated if required					
Maintains details of every account i.e. quantities and prices					
Posts of Budget accounts to General Ledger to become opening balances					
Enables copying old budgets to build new budget balances					
Maintains Budget Distributed and Budget Committed					
Fully Integrates with General Ledger System					

Reducing risks of mismanagement of public resources					
Accounts Payable	**1**	**2**	**3**	**4**	**5**
Provides a flexible parameter driven set-up of the system depending on the company business requirements and rules.					
Supports multiple currencies.					
Supports multiple open calendars and each calendar has multiple periods.					
Performs automatic voucher numbering as defined by the user.					
Accepts manually entered voucher numbers.					
Provides analysis by type of vendors/parties.					
Supports multiple Accounts by party.					
Supports all types of settlements.					
Supports flexible ageing analysis.					
Accounts Receivable	**1**	**2**	**3**	**4**	**5**
Automatic voucher numbering as defined by the user.					
Accepts manually entered voucher numbers.					
Enforces control on customer credit limit.					
Supports multiple accounts by party.					
Distribution of party accounts balances by cost center and/or activity, providing the basis for cost / activity analysis.					
Supports payment terms by customer.					
Supports all types of settlements.					
Supports flexible ageing analysis.					
Provides the utility to design layout for invoices					

Purchase ordering	**1**	**2**	**3**	**4**	**5**
Keeps a history of the relation between multiple vendors and particular items and vice versa in terms of (prices , delivery time , ...).					
Provides the user with the facility of designing very complex layouts for the printing of the vendor purchase orders.					
Supports all types of purchase orders (local and foreign).					
Provides the facility for automatically generating vendor purchase orders depending on a selected criteria such as (re-order level, min level .....).					
Follows the status of purchase orders, starting from issuing the order until goods are completely received.					
Provides the Facility of manually closing a purchase order whenever the user feels it is appropriate even if it is not fully received.					
Increase number of orders placed					
Reduction in lead times					
Improved supplier goodwill					
Reduction of administrative costs					
Blocking the legal loopholes believed to be avenues for waste					

Part D: Challenges Involved in the Adoption of IFMIS

11. What is your level of agreement with the following statements that relate to the factors affecting adoption of Integrated Financial Management Information Systems in the ministry? Use a scale of 1-5 where 1= strongly disagree and 5 = strongly agree.

	1	**2**	**3**	**4**	**5**
Lack of staff with IT knowledge and experience					
Commitment of senior managers					
Mid-level management's commitment to reform					
Project commitment at the highest levels of the political system					
Bureaucracy					
Continuous participation from the direct users of the system and other stakeholders in all phases of the project					
Procedural changes					
High-level officials who lack incentives for reform					
Organisational arrangements					
Legal framework					
Business functional processes					
Lack or little co-ordination between the teams					
Type of systems that will be implemented (off-the-shelf or custom-built)					
The complexity of the system					
Top management support					
Employee commitment					
Training/capacity building					
reporting accountability					
Governance system					
ICT infrastructure					
Incentives structure					
Legal framework in place					
Human resources available					
Others (Specify.....)					

THANKYOU FOR YOUR INPUT AND COOPERATION!!!

Appendix II: List of Government Ministries

1. Ministry of Interior and Coordination of National Government.
2. Ministry of Devolution and Planning.
3. Defence
4. Foreign Affairs
5. Education (Department of Education and Department of Science and Technology)
6. The National Treasury
7. Health
8. Transport and Infrastructure (Department of Transport Services and the Department of Infrastructure)
9. Environment, Water and Natural Resource
10. Land, Housing and Urban Development
11. Information, Communication and Technology (ICT)
12. Sports, Culture and the Arts
13. Labour, Social Security and Services
14. Energy and Petroleum
15. Agriculture, Livestock and Fisheries (Department of Agriculture, Department of Livestock and Department of Fisheries
16. Industrialization and Enterprise Development
17. EAC Affairs, Commerce and Tourism
18. Mining
19. Water and Irrigation

(Source: GoK, 2015)