INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM AND ITS INFLUENCE ON PUBLIC PROCUREMENT PERFORMANCE IN KIAMBU COUNTY GOVERNMENT, KENYA

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MARCH, 2018
DECLARATION

This research project is my original work and has not been submitted for award of a degree in any other university.

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REG.NO. D53/29587/2014

This research project has been submitted for examination with my approval as university supervisor.

SIGNATURE____________________  ______________________

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DEDICATION

This project is dedicated to my parents Mr and Mrs Mwangi who supported me all along and also encouraged me to enrol for a postgraduate degree and also contributed their time and resources enabling me to realise my dream. I also dedicate this work to my younger sister Beatrice Mwihaki, who has also been an encouragement. Finally this goes to my colleagues in MBA who were so resourceful in numerous ways.
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To the Almighty God for the strength and encouragement to keep going strong, and availing resources and opportunities. His blessings go beyond measure. To my supervisor, DR. Lucy Ngugi whose guidance throughout the process has propelled me through each step in writing this project. Special thanks go to staff members of the procurement department in county government of Kiambu for their cooperation and the support they accorded me during the period of study. Appreciated also are my colleagues in MBA class who were so instrumental in many of the discussions we held to refine our areas of research.
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<td>Diffusion of Innovation</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>IFMISs</td>
<td>Integrated Financial Management Information Systems</td>
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<td>Information Systems</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>Information Communication Technology</td>
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<td>Ministry of Finance</td>
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<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<td>SRM</td>
<td>Supplier Relationship Management</td>
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OPERATIONAL DEFINITION OF TERMS

County Governments: These are devolved units of government, put in place by the new constitution enacted in the year 2013, in Kenya, so as to facilitate economic growth at the grassroots, and provision of easy access to the public by county members.

E-Tendering: Automates most of the tendering processes reducing tender cycle time, speedy and accurate prequalification and evaluation.

IFMIS E-procurement: A platform that will see the operation of e-procurement system so as to automate the procurement process from requisition, tendering, awarding of contracts, to payment.

Integrated Financial Management

Information System: Computerisation of Public Expenditure Management process which entails; formulation of budgets, execution of budgets and accounting with the help of a fully integrated system for financial management for line ministries as well as other spending agencies.

Procurement Planning: The process that is employed by organizations to enable them plan for their purchasing activities within a specified period, it is completed during the budgeting process and results to cost savings, efficient business processes, while increasing profitability.
Supplier Relationship

Management: Brings together business practices and software, forming part of the information flow component of supply chain management, making this process efficient in acquisition of goods and services, management of inventory, and raw material processing.

IFMIS Control Systems: Built-in features in IFMIS facilitate effective monitoring and evaluation activities.

Online Tendering: Practices that have brought about faster submission of tender documents.

Automated Planning: Automated process that is employed by organizations to enable them plan for their purchasing activities within a specified period.

Automated Supplier Engagement: Sustaining supplier relationships and corporate buying via an online platform.

Public Procurement Performance: Purchasing efficacy, and purchasing productiveness that forms the basis for organizations to evaluate how well they are nearing their pre-determined goals.
ABSTRACT
The Kenyan government has realized the importance of procurement planning in all public procurement, with all procurement activities being within the approved budgets of the procuring entity, through an annual procurement plan, and all procurements undertaken by an entity to be within the threshold set in the regulations. Procurement should also be handled by different offices in respect to initiation of procurement, processing and receipt of goods and services. There have been numerous attempts to reform and regulate Public Procurement, and this has seen the emergence of legislation such as the Public Procurement and Disposal Act of 2005, which was later revised in 2009 to set up the necessary procedures for acquisition as well as the disposal of unserviceable, obsolete and surplus equipment by government institutions. Previous studies have not addressed Integrated Financial Management Information Systems and its influence on Public Procurement Performance in county governments. The study’s general objective was to investigate the influence of IFMIS on Public Procurement Performance in Kiambu County Government. Specifically, the study was narrowed down to: determine the influence of IFMIS control systems, online tendering, automated planning and automated supplier engagement on public procurement performance in Kiambu County Government. The results also demonstrated the current status of IFMIS and its influence in the County Government of Kiambu. This study was based on Diffusion of Innovation Theory, Information Systems Success Theory, E-technology Perspective Theory and Agency Theory. These theories related well with the study variables. The study also adopted a descriptive research design, where the target population comprised of 100 individuals in top management, departmental staff, and supervisors. A sample of 80 respondents was selected, representing 80% of the population. Statistical software for social sciences SPSS (version 16) was employed in data analysis. Qualitative data was analysed using content analysis. Quantitative data was analysed through the use of descriptive statistics which include: frequencies, percentages, means, standard deviations as well as multiple linear regression model. Study findings concluded that IFMIS had a significant relationship with public procurement performance, as demonstrated by the four study variables, since significant relationships were established between IFMIS control systems, online tendering, automated planning, automated supplier engagement on public procurement performance. The study concluded that IFMIS has influence on public procurement performance in Kiambu county government. Changing either IFMIS control systems, online tendering, automated planning and automated supplier engagement would significantly affect public procurement performance. This study recommends that county governments should put policies flexible enough to handle technological changes. Policies to strengthen the IFMIS platform should be put in place to ensure the systems control mechanisms are safeguarded.
CHAPTER ONE

INTRODUCTION

1.1 Background of the study

A high level of inefficiency in the use of public funds, especially in public procurement has been a major challenge in developing countries, Kenya included. There has been a lack of institutional framework resulting to non-transparent and unregulated public procurement procedures (Kamotho, 2014). Accounting and budget executions are mainly manual or supported by obsolete software applications whose maintenance is irregular. This has had a harmful effect on the functioning of Public Expenditure Management (PEM) resulting to lack of reliable, timely revenue as well as expenditure data for budget planning, monitoring, expenditure control and reporting, thus negatively impacting budget management (Diamond & Khemani, 2006).

According to Mbae (2014), significant developments within public procurement system in Kenya have been seen, from unregulated systems in 1960s, moving to regulated system by Treasury Circulars in 1970s, 1980s and 1990s, to the introduction of the Public Procurement and Disposal Act (PPDA) of 2005 as well as Public Regulations of 2006, resulting to new standards for Public Procurement in Kenya. Further she points out that public procurement constitutes the largest domestic market in developing countries, and if properly managed, a public procurement system has the ability to greatly influence economic development in these countries. In recent years, governments in developing countries have made significant efforts in computerization of most of their operations, in connection to Public Sector where Integrated Financial Management Information Systems (IFMISs), have become core components of financial reforms in these countries (Peterson, 2006).
1.1.1 Public Procurement Performance

Public procurement performance is concerned with the achievement of objectives as well as responsibilities that have been laid down, from the viewpoint of the party looking into such matter. It is the extent to which the results of the procurement process demonstrate improvement in lead time, capacity utilization, cost and labour productivity (Kavua & Ngugi, 2014). Procurement performance is characterized by two elements; purchasing efficiency and effectiveness, and purchasing performance. Purchasing performance focuses on how well public entities are moving towards pre-determined objectives, making decisions on future initiatives aimed at performance improvements. Therefore the procurement process is a means to efficient, effective control of processes, and not simply an end. (Ouma & Kilonzo, 2014).

According to Oketch (2014), the public sector in Kenya is surrounded by numerous allegations of fraud, corruption and inefficiencies brought about by weak controls in the procurement process. Procurement and asset disposal in government entities have been riddled by bureaucracies as well as corruption, rendering the process inefficient and resulting to loss of colossal amounts of finances from government coffers (Otieno, 2015).

There have been numerous attempts to reform and regulate Public Procurement, and this has seen the emergence of legislation such as the Public Procurement and Disposal Act of 2005, which was later revised in 2009 to set up the necessary procedures for acquisition as well as the clearance of unserviceable, inoperable and spare equipment by government institutions (Mbae, 2014). Further, she indicates that subsidiary legislation was put up – The Public Procurement and Disposal Regulations (PPDR), which operationalized in 2007. Three independent bodies were established; Public Procurement Oversight Authority (PPOA), Public Procurement Oversight
Advisory Board (PPOAB) and Public Procurement Administrative Review Board (PPARB). The composition of these bodies, their functions, powers and jurisdictions are clearly outlined in the act (Otieno, 2015).

A procuring entity is required to prepare specific requirements that are related to the effects, works or services to be bought out, and also gives the correct, complete depiction of items to be bought ought, to allow for fair competition among suppliers participating or contractors in the procurement process (PPOA, 2005). Procurement performance function is measured through its efficiency and effectiveness in meeting the objective of procurement. It is now becoming a necessity to align procurement objectives with that of the organization (Muthuri, 2014).

Procurement performance provides the grounds for an organization to evaluate its progress towards its predetermined goals, to highlight its weaknesses and strengths and to determine its future projects with the aim of performance improvements. Poor procurement on the other hand results to inefficiency and increased costs. This also results to a decrease in profitability, thus becoming a major impediment to the achievement of organizational goals, results to setbacks in delivery, substandard goods and services and increased defects. Poor performance in both private and public sectors is as a result of the failure to adopt electronic procurement, and over dependence on traditional procurement activities (Ndiiri, 2016).

1.1.2 Integrated Financial Management Information Systems

According to Amemba, Nyaboke, Osoro, and Mburu (2015), Kenya has suffered problems in public procurement since existing legislations failed to advocate technological usage in procurement processes, and establishment of long term engagements with the buyer, maintaining
ethical standards in procurement has also been an uphill task. To have an improved performance in procurement in Kenya, a review of existing legislations needs to be conducted so as to encourage extensive technological use in the procurement process, which will foster long-term relations between buyers and suppliers, and bring about stakeholder involvement through training (Amemba et al., 2015).

IFMIS can be described as automation of Public Expenditure Management process which entails; formulation of budgets, execution of budgets and accounting with the help of a fully integrated system for financial management for line ministries and other spending agencies. IFMIS helps in public financial management and control, accounting, auditing as well as reporting. A full system also secures integration and communication with other relevant information systems (Diamond & Khemani, 2006). IFMISs are introduced to automate and computerize various aspects of budget executions as well as accounting operations across government institutions (USAID, 2008). The system is supported by a reliable database or a series of interconnected databases, where data expressed in financial form flow to and fro (Njonde & Kimanzi, 2014).

IFMIS has inbuilt control systems designed to assist management in ensuring that there is accountability in the deployment and use of public resources, therefore enhancing effectiveness and efficiency of public expenditure programs. Tracking of financial events through automated financial management results to improved control over expenditure, accountability and transparency in the budget cycle (Hendriks, 2012).

Public procurement traditionally, involved a lot of paper work and tender documentation, and was only done via stand-alone, incompatible computer systems, which were costly for both the client and contractor. Online tendering allows the parties in a tender process to access one system
via the internet, has cost savings in form of time and money, reduces transaction errors, while increasing speed of analysis (Weippert, 2001).

Procurement planning entails the process that is employed by organizations to enable them plan for their purchasing activities within a specified period, it is completed during the budgeting process and results to cost savings, efficient business processes, while increasing profitability. Planning is concerned with future consequences of judgements made presently (Thai, 2005). The objective of procurement planning is to help in the avoidance of haphazard procurement, thus making the government’s market place more attractive and transparent to the suppliers as well as service providers (Brahim, Abada, & Muhindo, 2014).

Technological growth has revolutionised the role of procurement departments from a transaction oriented function to a transformation oriented function, and thus becoming a strategic function. Strategic procurement therefore goes beyond the activity of procurement, but also focusses on sustaining supplier relationships and corporate buying via Supplier Relationship Management (SRM). Growth in the number of communication channels supports SRM, making the relationship management activity more versatile between buyers and suppliers. There are numerous ICT-based applications that influence procurement in numerous ways. E-procurement approaches provide benefits such as information sharing between buyers and contractors, improved relationships with existing suppliers, and developing new relationships with new suppliers (Kamal, Eldabi, Mazhar, Alshawi, & Sharif, 2014). Following the introduction of county governments by the 2010 constitution, the National Treasury embarked on the implementation of IFMIS to all counties in 2013 (Cherotich & Okibo, 2016).
1.1.3 Integrated Financial Management Information System and Public Procurement Performance

Procurement performance is a major contributor to the improvement of quality of services, while its absence or inappropriate use acts as a hindrance to change resulting to the deterioration of the purchasing function. Performance measurement therefore is important in guaranteeing performance of the organizations. Purchasing performance is as a result of purchasing efficacy, and purchasing productiveness, as this forms the basis for organizations to evaluate, how well they are nearing their pre-determined goals, helps them to focus on core competencies while eliminating their weaknesses, and also making putting in place measures for future initiatives, with the aim being to strengthen improvement in performance (Mburu & Mwangi, 2015).

Poor procurement performance results to increased inefficiency, and reduced costs of the procurement function, and also contribute to a decrease in profitability. This limits organizational growth and causes delays in delivery, low quality goods and services and increased defects. Inability to embrace e-procurement is the greatest contributor of poor procurement performance, especially where there is existence of traditional procurement procedures and procurement activities are poorly coordinated (Ndiiri, 2016).

Kinyua (2015), indicates that the quality of goods, services, and infrastructure as well as the effectiveness of public services are dependent on a properly managed public procurement system. Traditional purchasing procedures have been criticised because of inefficiencies such as numerous clerical activities that lack value, excessive paperwork for new purchases, excessive order processing time, as well as excessive cost of transactional activities (Oketch, 2014).
IFMIS e-procurement adoption in Kenya is seen as the most effective strategy in addressing the effects of public procurement misappropriations that have bedevilled the public sector from the time the country attained self-rule. Integration of financial management systems improves the ability to acquire financial information as well as operational performance, avail information on the financial position of the government, as well as information on the performance of the economy, thus demonstrating accountability to the public as well as donors (Biwott, 2015).

1.1.4 Public Procurement in Kiambu County

County governments are devolved units of government, established by the County Governments Act (2012). This piece of legislation is in line with the provisions of the new constitution, which came into operation in the year 2010. The act stipulates the composition, functions and roles of the independent arms of government. It also specifies decentralized units to the county assembly from the national government (Otieno, 2015).

The County Government of Kiambu has ten key departments that have been entrusted with the delivery of services to the residents of the expansive county. These departments are involved with the purchase of materials and services and also in the disposition of assets. The county government has therefore realized the need for capacity building initiatives so as to support these departments to effectively and efficiently manage their projects. Procurement has as result received a major emphasis, thus prompting the need to build capacity of those involved in the procurement process (Republic of Kenya, 2016).

Preparation of procurement plans and adherence to the same, carrying out risk based audits, as well as laying out an institutional framework have been prioritised, so as to ensure that there is
prudent management of scarce resources so as to realise maximum benefit. This in effect has reduced wastage in the county government, therefore realising a great impact on the intended beneficiaries. Procurement plans have also enabled the departments to prioritise their resources, enabling them to realise their desired outcomes. Kiambu County Government has also adopted e-procurement, and therefore all its procurement functions are performed on the IFMIS platform, raising transparency of the procurement process, and allowing more suppliers to access tenders. Several challenges have been encountered in the health sector, which have been characterised by construction delays resulting from the long process of acquiring bills of quantities, and slow procurement process (Republic of Kenya, 2016).

Kiambu County Government also requires all its suppliers to submit tender documents which indicate the requirements and qualifications for the contract. These documents are obtained directly from the county’s website or the treasury’s supplier website, where each supplier is required to login before gaining access to the site. The suppliers are then required to submit their enclosed tender documents to the county. To ensure that a conflict of interest does not arise, suppliers are required to indicate whether they have associations with the buying company, and in such cases the supplier is disqualified (Republic of Kenya, 2016).
1.2 Statement of the problem

Public Procurement process has been marred with malpractices such as corruption, misallocation of resources, bureaucracy, and disrespect of the rule of law. This has resulted to inefficiency, lack of accountability and transparency in the procurement systems, causing delays, exaggerated prices and poor service delivery (Mutua, 2010). Significant efforts have been made to integrate procurement into a more strategic view of the efforts by the government.

Electronic procurement has emerged as a major factor in the procurement process over the last decade. E-procurement streamlines the three important parts of the procurement process: sourcing, procurement and payment. It is more than just a system for making online purchases. Where the system has been properly implemented it connects companies and their business processes directly with suppliers, and at the same time managing these interactions. E-procurement offers more efficient integration of the supply chains providing better organization and tracking of all transaction records (Kagai, 2013)

Chemoiywo (2014), studied Public Procurement Procedures and Supply Chain Performance in State Corporations in Kenya, and found out that most parastatals comply with procurement procedures. This was indicated by the findings that officers have received training and they have also been sensitized on Public Procurement Act of 2005 and Regulations 2006. Mutui (2014), he found out that IFMIS implementation affects the overall procurement performance in government ministries in Kenya to a great extent, top management support and capacity building to a moderate extent, while employee commitment is also to a moderate extent.

Metoh (2011), in his study on factors affecting implementation of E-procurement System in the public sector, found out that bureaucracy in government contributes to non-implementation of e-
procurement in the public sector. Musau (2015), looked into environmental factors affecting procurement performance in county governments: a case of Uasin Gishu County. His study found out that legal, political, and socioeconomic environments affect procurement performance. The reviewed researchers have studied Public Procurement Performance in Kenya, but have not addressed Integrated Financial Management Information Systems and its influence on Public Procurement Performance in county governments. It is against this background that this study sought to investigate the influence of IFMIS on Public Procurement Performance in Kiambu County Government.

1.3 Research Objectives

1.3.1 General objective

The study’s general objective was to investigate the influence of IFMIS on Public Procurement Performance in Kiambu County Government.

1.3.2 Specific objectives

The study was guided by the following research objectives:

1. To determine the influence of IFMIS control systems on Public Procurement Performance in Kiambu County Government.

2. To investigate the influence of online tendering on Public Procurement Performance in Kiambu County Government.

3. To establish the influence of automated planning on Public Procurement Performance in Kiambu County Government.
4. To determine the influence of automated supplier engagement on Public Procurement performance in Kiambu County Government.

1.4 Research Questions

The study attempted to answer the following research questions:

1. To what extent does IFMIS control systems influence Public Procurement Performance in Kiambu County Government?
2. How does online tendering influence Public Procurement Performance in Kiambu County Government?
3. How does automated planning influence Public Procurement Performance in Kiambu County Government?
4. To what extent does automated supplier engagement influence Public Procurement Performance in Kiambu County Government?

1.5 Significance of the Study

The study findings were significant because poor management of public resources with respect to public procurement has been a topic of discussion following the entry of county governments in 2013. This research will be helpful to academic scholars, since it adds to the existing body of literature on related work. The findings can also be compared with other similar researches to find out whether there is consistency in what is studied. The research will also be helpful to the National Treasury, because of the institution’s involvement in the deployment of IFMIS, both at
the national and county levels. The results revealed the Influence of IFMIS on Public Procurement Performance, pointing out areas of strength and weakness, and thus the Finance Ministry can embark on sealing the loopholes and addressing the challenges. Further the research showed the importance of automation of County Government Procurement processes and how this helps to accomplish set out projects.

1.6 Scope of the Study

The study investigated the influence of IFMIS in Kiambu County Government. The research investigated issues covering Public Procurement Performance in Kiambu County Government. Kiambu County Government has been recognised by Kenya National Audit office for its strict adherence to procurement procedures. It is therefore necessary to find out the benefits that will be realised when IFMIS is properly utilised in County Governments in relation to Public Procurement Performance.

1.7 Limitations of the Study

Data for the study was obtained through questionnaires that were issued to respondents, and collected later after they were filled. Several challenges were bound to occur, for instance; some of the respondents took a long time to fill in the questionnaires, some of the respondents had responded to the questions wrongly. Some other respondents also failed to complete their questionnaires, or had them misplaced. This prompted the researcher to send them fresh copies,
thus consuming more time. Additionally accessing information from senior officials of the County Government was an uphill task.

To counter these limitations, the researcher in the course of time when the questionnaires were issued and the time they were collected, reminded the respondents to fill in the questions. Where a question was not understood, the researcher will requested the respondents to contact him for clarification. The respondents were also urged to take good care of the questionnaires, and to avoid cases of loss, the questionnaires were collected within a week, from the time they were issued to the respondents. County government officials were also be assured that the research was for academic purposes only and information provided would be treated with a high level of confidentiality.

1.8 Organization of the Study

Chapter one of this research comprises of study’s background, problem statement, research objectives, and research questions, scope of the study, significance of the study, limitations and the assumptions of the study. Chapter two begins with an introduction to literature review, and then proceeds to provide a review of theoretical literature, review of empirical literature, and a summary of reviewed literature as well as a conceptual framework. Chapter three entails the methodology for data collection, measurement and data analysis. It also entails the research design, target population, sampling procedure, research instrument, data analysis and ethical considerations. Chapter four comprises of study results and discussions. Key findings of this research are discussed, descriptive and inferential statistics. Chapter five is made up the research
summary, conclusions and recommendations. These are conclusions and recommendations that were reached by the researcher.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section focused on the relevant discussions to the study in order to acquaint the researcher with results of other studies related to this field. It included a review of theoretical literature and empirical literature which was helpful in relating the study to the larger on-going dialogue in the literature about the study. It highlights different authors and their perspectives in their areas of research on aspects of the influence of IFMIS on Public Procurement Performance in county governments.

2.2 Theoretical Literature Review

This section discusses the theoretical framework. Four major theories built a foundation for the study: Diffusion of innovation theory, Information Systems Success Model, E-Technology Perspective Theory, and Agency Theory.

2.2.1 Diffusion of Innovation Theory

Diffusion of innovation was first put across by Rogers (1962), and later revised in 2003. The adoption of a new innovation, even when it is advantageous is often met with a lot of difficulty. Most innovations take lengthy periods to be widely adopted from the time they first become available. According to Dillon and Morris (1996), lack of acceptance by users stands as a great hindrance to the success of a new Information System. In most cases users are reluctant to adopt information systems that would bring about successful results if they were to be employed.
Acceptance by the user is viewed to be critical in establishing whether an information system project succeeds or fails.

According to Rogers (1995), contrary to the expectations of many technologists who think that advantageous technologies will market themselves, most innovations diffuse at a very slow rate. A technological innovation presents both uncertainty to potential adopters, and an opportunity for a reduction in uncertainty to adopters, with the latter being able to focus on the innovation’s ability to solve their perceived or felt problems.

Practical problems occur in the determination of the end of one innovation, and the beginning of another. An idea that is perceived to be new for instance, the boundary question can only be answered by potential adopters, who in this case will be the ones perceiving the innovation. Several change agencies root for a package of innovations since they find that these innovations are adopted more rapidly. Characteristics of innovations, as they are perceived by users are helpful in explaining the differences in the rates of adoption. It is immaterial whether an innovation offers a great advantage, what is important is whether the individual perceives the innovation as advantageous. Where the perceived relative advantage of an innovation is greater, the rate of its adoption will also be rapid. An incompatible idea with the prevailing values, past experiences, and the needs of potential adopters will fail to be adopted as rapidly as a compatible innovation. Complicated innovations will also be adopted at a slow pace, compared to the ones that are readily understood by the members of a social system. It is however, being directly related to innovation characteristics that may influence individual adoption decisions (Rogers, 1995).

According to Dillon and Morris (1996), managerial influence in the organization has the ability to encourage or discourage acceptance, through a reward system or through expressed preferences. Thus managerial influence is of great importance. Diffusion theory offers a context for examining the uptake of Information Technology over a period of time, but fails to provide a detailed treatment of user acceptance. The assertion of this theory will be used to critically evaluate whether IFMIS E-procurement is disruptive, because the system puts in place control
systems, online tendering, automated planning and automated supplier engagement which is a
complete shift from the traditional methods of procurement, altering the status quo. The theory
will be necessary in helping the researcher to understand the implications of such a system to
various stakeholders and the organization as a whole.

2.2.2 Information Systems Success Model

The concept was adduced by Delone and McLean (1992), basing it from an earlier research on
communications by Shannon and Weaver. The earlier model advances six key pillars of
Information Systems success i.e. System Quality, Information Quality, Use, User Satisfaction,
Individual Impact as well as Organizational Impact. The D&M has largely been used to assess
the success of Information Systems. System Quality and Information Quality affect Use and User
Satisfaction. The amount of Use also affects User Satisfaction positively or negatively and vice
versa. Use and User Satisfaction precede individual impact, which eventually should have an
organizational impact.

DeLone and McLean IS success model examines the six dimensions at three different levels, i.e.
technical, semantic and influence levels. System Quality looks at success at the technical level,
focussing on the desired attributes of an information system. Information Quality has its focus on
information products at the semantic level; information success in communicating the intended
meaning. Use and User Satisfaction are measured at the influence level to analyse the interaction
of the products of information with its recipients. At the influence level, the influence of
information products on managerial decisions and organisational performance is measured.

Over the years, the model has also been revised to meet the various requirements set by several
the model needed modifications. Recognizing these proposals, D&M later revised the variables;
Individual Impact and Organizational Impact, changing them to Net Benefits, allowing this
model to be applied to any level of analysis that would be recognized as relevant by the
researcher (Delone & McLean, 2003). The other consideration that was included in this model
was that of Service Quality, as one important dimension, and Intention to Use as the alternative
measure, since measuring attitude is important in some contexts (Petter, DeLone, & McLean,
2008). Hellstén and Markova (2006), conclude that DeLone and McLean’s IS success model provides a great framework in the identification and development of various measures for various important dimensions, and has applicability in usability studies, so as to fathom the various aspects of IS Success.

This model will be useful in understanding the success of Integrated Financial Management Information System and its influence in county governments in Kenya. The model addresses the four research questions, the influence of control systems, the influence of online tendering, the influence of automated planning and the influence of automated supplier engagement on the performance of county governments. This is necessary in studying the influence of these variables on the performance of county governments, following the roll out of IFMIS systems to county governments, not only highlighting the challenges, but to also highlighting the benefits that will be realised following the usage of IFMIS on Public Procurement in county governments.

2.2.3 E-Technology Perspective Theory

E-procurement as stated by Choi and Dooley (2001), is a first generation concept whose main aim is the buyers, and should progressively move into e-sourcing, and eventually e-collaboration. E-collaboration helps suppliers and customers to raise their coordination through the internet by managing inventory, demand as well as planning the production, facilitating a frictionless procurement paradigm (Shale, 2014).

According to Min and Galle, (2002), e-procurement is a business-to-business procuring discipline that makes use of e-procurement in the identification of potential supply sources, for the buying of goods and services, transferring payments, and interacting with suppliers. Companies have widely adopted the internet, aiming to improve performance in their internal processes as well as the external processes (Barratt & Rosdahl, 2002). According to Morris,
Stahl, and Herbert (2003), e-procurement is the drive that allows organizations to amalgamate their supply chains from end-to-end, from supplier to the end user, with shared pricing, availability and performance data, allowing buyers and suppliers to obtain maximum and mutual beneficial as well as schedules prices.

Adoption of e-procurement is still in formative stages, falling short of e-sourcing and e-collaboration (Morris et al., 2003). Transition to modern e-procurement requires strategic adaptation. This strategy emphasises on organizational change (Shale, 2014). This theory is of great importance and addresses all the research variables in this study since the study aimed at investigating the influence of IFMIS on Public Procurement Performance in the county government. Understanding the impact of technology adoption in the procurement process was therefore necessary so as to contrast the presence of e-technology against manual based systems, giving a clear picture of the more viable of these two options.

2.2.4 Agency Theory

This concept was promoted by Adolf Augustus Berle and Gardiner Coit Means, who looked into the issues arising out of principal-agent relationships as early as 1932. They investigated this concept and applied it towards the development of large corporations. The results were the differences between the interests of directors and managers, from those of the owners of the firms, using this theory to cite the origins of these conflicts (Murtishaw & Sathaye, 2008). The work of Berle and Means was later revised by Jensen and Meckling in 1960s and 70’s. They coined a school of thought whose argument was that corporations are ordered in such a way that they minimize the costs of acquiring agents to work as instructed by the principal. It is
acknowledged that parties in a particular situation with the same goal, will have different motivations, resulting to conflicts (Jensen & Meckling, 1976).

Jensen and Meckling (1976), define agency relationship as a contract where one or more persons-the principal(s) - engage another- the agent- to perform a service on their behalf, and involve delegating decision making authority to the agent. The agent is required to act in best agent of the principal. Agency relationships arise so as to facilitate the adoption of policies concerning the alignment of objectives, so as to discourage self-interested behaviour by managers, while reducing the costs of agency. Public procurement contributes 60%-70% of expenditures by organizations. In public procurement, the parties comprise of: management, tendering committees, procurement departments and suppliers, where these parties form a principal agent relationship, where the management is the initial principal, and purchasing official, the agent. The manager lacks authority in the procurement process, thus cannot make decisions concerning purchases acquiring profit. The purchasing professional equipped with procurement knowledge has the responsibility of procurement activity, and is therefore the decider. Chances are that the agent will maximize his self-interest creating a conflict between his interests and that of the principal (Gathua, 2015).

This theory addressed the dependent variable- Public Procurement Performance. In this case relationships between the buying firm and the suppliers will be fostered resulting to improved public procurement performance. Information will flow freely between the supplier and the buyer, and they will also make use of available technologies. The principal will also put in place control mechanisms to ensure that the agent carries out purchases in accordance with the wishes of the principal.
2.3 Empirical Literature Review

This section looked at findings of other researchers and was helpful in the comparison of the findings of this research and what has been found before.

2.3.1 Integrated Financial Management Information System Control Systems and public procurement performance

Chado (2015), studied the effect of integrated financial management information systems on the financial management of the public sector in Kenya. Her study targeted 18 government ministries, adopting a census approach. She found out that internal control systems have a strong influence on financial management in the public sector. IFMIS is able to trace all the stages of a transaction process, therefore enhancing transparency. Use of IFMIS has also enhanced security of information, minimizing the risk of corruption and as a result improving the procurement system. The system also provides cross-referencing of personal identification numbers and this has significantly reduced fraud cases. She also found out that, since the implementation of IFMIS, confidence and credibility of ministries’ budgets has been enhanced, improving effectiveness and efficiency of public expenditure programmes. Built-in features in IFMIS facilitate effective monitoring and evaluation activities of the public sector.

Omokong (2014) investigated the effect of IFMIS on the performance of public sector organizations. Her sample included 94 respondents, representing 100% of the target population. She found out that the IFMIS software automated procedures and internal controls as a result promoting accountability, helping to streamline processes therefore reducing opportunity for corruption and tracking all the stages of the transaction process. On the relationship between IFMIS and financial control and governance, she established that IFMIS helped management in
ensuring accountability in the deployment and use of public resources, therefore improving effectiveness and efficiency of public expenditure programs. IFMIS has greatly enhanced security of information, minimizing the risk of corruption therefore improving the reliability of the system.

Mburu and Ngahu (2016), studied the influence of integrated financial management information system on financial management in county government of Nakuru Kenya, where 104 employees comprising of all accountants and finance related employees from all ministries in the county government were used in the study. They found out that the county has achieved efficient monetary allocation towards the delivery of public services, there has also been steady increase in revenue. IFMIS has also raised fiscal prudence in the county, and the county is able to meet its financial obligations and pay its contractors in good time.

Kwena (2012) studied integrated financial management and information systems in public sector, a case of selected government ministries. The study targeted 134 senior management accountants across government ministries. The study found out that IFMIS aims to provide a high level of safety to its users, the system also easily reports abusers of the system, and all known abuses are easily reported leading to the identification of culprits. The study also revealed that the system provides security for personal data, and that IFMIS is safe to use providing high levels of data integrity for its users. Omokonga (2014), in her study concerning the effect of IFMIS on financial transaction processing in the public sector, found out that there was a great reduction in wasteful spending and irregular expenditure.

Oversight and control of the procurement cycle supports accountability while enhancing integrity within the process of procurement. The processes bring about valuable information to facilitate
efficiency and performance within the procurement life cycle. Internal controls are put in place to enhance the realisation of an efficient public procurement process, and at the same time protecting integrity related goals and objectives. These internal controls verify whether legal, administrative and financial procedures have been adhered to; and these are financial controls, internal audit as well as management controls. This ensures conformability in application of procurement rules and procedures in procurement across the whole public sector (OECD, 2016).

2.3.2 Online Tendering and Public Procurement Performance

Rotich, Muma, and Waruguru (2015) sought to establish the relationship between e-tendering and procurement performance among county governments in Kenya. Their sample comprised of 120 employees in procurement, finance, accounts and IT departments in Kericho County at management and non-management levels. They found out that e-tendering practices have brought about faster submission of tender documents by prospective suppliers reducing excessive paper work in the procurement process by ensuring the storage of software data. This in effect has reduced the tender cycle by improving supplier choice and categorizing beforehand the particulars of tender performance, and lowering the expenditure associated with tendering process.

Eshitoli, (2016) looked into e-tendering adoption and procurement performance of oil marketing companies in Kenya. The research investigated the number of oil marketing firms that had embraced e-tendering practices. Her sample comprised of 50 respondents at the top, middle and lower levels of management, from 20 leading firms. The study found that marketing firms in
Kenya had adopted e-tendering, but also relied on traditional tendering methods. Tender documents were still prepared manually and presented as hard copies.

Orina (2013) investigated e-procurement readiness factors in Kenya’s public sector. Her study comprised of 171 government agencies- 18 ministries and 153 parastatals. 50 respondents were used from these institutions, comprising of procurement and ICT staff. The study results revealed that adoption of e-procurement in the public sector is still very low. They also reported apathy in the utilization of online procurement systems, though most institutions have these systems in place. Electronic ordering also lacks usage, since most respondents indicated that rarely were orders placed through electronic means. The level of integration of ICT system with supplier system was reported to be very low.

Biwott (2015) studied integrated financial management information systems implementation and impact on public procurement performance at national government of Kenya. His study employed the census approach, covering all the 18 ministries under the National government. Respondents comprised of procurement managers located at ministry headquarters. His study found out that IFMIS has been incorporated by ministries in conducting their procurement practices enabling ministries to conduct e-procurement efficiently. Oketch (2014) looked into the implementation of government electronic procurement system in the county of Mombasa, Kenya. 11 ministries in the county government of Mombasa were studied, targeting head of procurement in each ministry or department. The study found out that there was very little supplier involvement in implementation of e-procurement system.

Ndiiri (2016) studied e-procurement implementation and performance of county governments in Kenya. All the forty seven county governments in Kenya were studied, where a census approach
was used. The respondents were procurement managers, operations managers or their equivalent. The study found out that there is improved flow of information, shortlisting of tenders is done by the e-procurement system, ordering is done through the county website, all counties make requisitions online, and tenders are advertised online, specifications for procured items are posted to county websites, and that there is competitive bidding and sourcing.

2.3.3 Automated Planning and Public Procurement Performance

Procurement planning is the process that is employed by organizations to enable them plan for their purchasing activities within a specified period, it is completed during the budgeting process and results to cost savings, efficient business processes, while increasing profitability. Planning is concerned with eventual impact of resolutions made presently (Thai, 2005). The objective of procurement planning is to help in the avoidance of haphazard procurement, thus making the government’s market place more attractive and transparent to the suppliers as well as service providers (Brahim et al., 2014).

Gathua (2015) examined public procurement process in Kenya: a review of its performance in the university of Nairobi Kenya. He drew a sample of 40 respondents from a population of 87, which consisted of principal/deputy principal, procurement staff, chairpersons/deans/directors and administrative staff at the central unit and college. He found out that these departments prepared annual procurement plans, in a participatory manner and in line with the set objectives. Procurement plans are formulated and reviewed bi-annually.

Kibet and Njeru (2014), looked into the effects of procurement planning on procurement performance: a case study of Agricultural Development Corporation in Nairobi. Their sample
was drawn from personnel in ADC who have a contribution in the preparation of plans and staff members responsible for funds allotment for the various tasks in Nairobi centre. Forty respondents (40) were drawn from every cadre. The study found out that ADC managed its procurement by using a procurement portfolio, making procurement forecasting the elementary function that lays the stage for ensuing procurement activities. Existence of procurement plans minimizes dependency on suppliers, enabling compliance to procurement collection and categorization of needs thus impacting procurement performance positively.

Wambui (2013), studied the role of procurement on organizational performance: a survey of public secondary schools in Imenti North District, Kenya. The target population was 30 schools, where 40 targeted supplies staff were surveyed. The study found out that supplies personnel in the institutions studied had not been trained in procurement and that the policy framework is inadequate as well as the finances to improve procurement in public schools. These officers only relied on procurement manuals for schools and colleges provided by PPOA. Procurement plans are absent and therefore procurement fails to play a strategic role. For this reason the respondents felt that it was important to have additional skills to carry out their roles of procurement in an effective and efficient manner.

Aladejebi & Adedeji (2015), studied the effect of procurement planning on the performance of selected agricultural firms in Ondo State, Nigeria. 105 employees in 35 agribusiness firms were targeted. The study revealed that sampled organizations have a weak functional ERP system used for procurement purposes. It was also found out that procurement officers did not seek approvals from the organizations authority so as to determine the items and quantities to procure, before the procurement process. Market capability was not done so as to determine where to procure goods and services from.
2.3.4 Automated Supplier Engagement and Procurement Performance

Sengbeh (2015), investigated ethical procurement practices and supply chain performance of Kenyan energy sector. Thirty two (32) questionnaires were administered to procurement and finance directors in administration departments in each energy sector firms. The researcher found out that transparency in public tendering procedures is guaranteed in government owned entities in the energy sector. Where the award wishes to get the lowest bid, it was found out that the energy sector firm debriefs all unsuccessful suppliers on the weaknesses of their tender documents. Fair and equal treatment of suppliers is provided. The firms therefore adhere strictly to transparency in public tendering process, provides access to reliable information, thus ensuring that the objectives of transparency in procurement are implemented. He further found out that firms in energy sector make use of technology systems to improve transparency, and stakeholders understand the means through which contracts are evaluated and awarded, and that there is fair treatment of suppliers. Supplier confidentiality is also safeguarded.

Mandiyambira (2012), looked into managing supplier relationships to improve public procurement performance. His study used 180 respondents from nine state universities encompassing all the procurement officers. He found out that long-term relationships with several suppliers were the most effective strategy of managing supplier relationships for both long-term and short-term contracts and for complex products.

Akenroye, Ojo, and Aju, (2012) studied purchasing and supply management practices in corporate Nigeria: an investigation into the financial services industry. One hundred and fifty (150) respondents were used in their survey, comprising of senior management personnel from banks, insurance, investment, mortgage and pension management companies in Nigeria. The
study looked into supplier development variables. The researchers found out that there is need to engage suppliers in performance review, training and capacity development programmes necessary to support suppliers.

Kamal, Eldabi, Mazhar, Alshawi, and Sharif (2014) explored the role of supplier relations for sustainable operations: an OR perspective. A purposive sampling technique was used to choose respondents, who included senior managers, managers, assistant managers as well as other employees in the procurement department. Fifty (50) respondents were used in this study. The researchers found out that various e-procurement technologies such as Electronic Data Interchange (EDI), E-marketplace, and E-Auction etc. have little impact on supplier relationships. Separate stakeholder-driven interventions, are beneficial and results to sustainable goals and objectives.

Amemba et al. (2013) studied challenges affecting public procurement performance processes in Kenya. The study found out that in Kenyan public procurement context, the relationship between the supplier and the buyer is mainly on a transactional basis across most public institutions. There also lacks a sense of partnership since the buyer majorly focuses on the cheapest price, and therefore buyers make bids to see who will come up with the lowest price. Suppliers on the other hand try to make a price high enough to recover their costs and make a profit. This is therefore not beneficial, since one side will have to win, while the other one loses.

2.4 Summary of the Literature and Research Gaps

IFMIS e-procurement has significant benefits that would result to efficiency and effectiveness in the organization in relation to public procurement. Traditional methods of public procurement
were laborious, open to misuse by corrupt officials and favoritism to set of suppliers, therefore eliminating competition that ensures that an organization gets value for money. The process was painfully long and lacked transparency. From the reviewed literature, it is evident that adoption of technology is revolutionizing the approach to public procurement. However, there is little research on the influence of IFMIS on public procurement to the devolved units of government, which is very crucial in the growth the economy at the grassroots.

Table 2.1 Summary of Empirical Literature

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Study</th>
<th>Findings</th>
<th>Gap</th>
</tr>
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<tbody>
<tr>
<td>Akenroye, T., Ojo, O., Aju, O.</td>
<td>2012</td>
<td>Purchasing and management practices in corporate Nigeria: an investigation into the financial services industry</td>
<td>There is need to engage suppliers in performance review, training and capacity development programmes</td>
<td>This study did not address strategic approaches to purchasing so as to facilitate commercial gains</td>
</tr>
<tr>
<td>Mandiyambira, R.</td>
<td>2012</td>
<td>Managing supplier relationships to improve public procurement performance</td>
<td>Long-term relationship with several suppliers is the most effective strategy for the management of supplier relationship, for both long-term and short-term projects.</td>
<td>The study only focused on managing supplier relationship so as to engender value for money in public sector procurement</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
<td>Title</td>
<td>Findings</td>
<td>Additional Information</td>
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<tr>
<td>Orina, D</td>
<td>2013</td>
<td>E-procurement readiness factors in Kenya’s public sector</td>
<td>Adoption of e-procurement in the public sector is still very low, as well as apathy in the utilization of online procurement systems.</td>
<td>The study did not address challenges of e-procurement readiness</td>
</tr>
<tr>
<td>Oketch, C.</td>
<td>2014</td>
<td>Implementation of government electronic procurement system in the county of Mombasa, Kenya</td>
<td>There was little supplier involvement and essential online documents to support e-procurement were absent</td>
<td>The study failed to address government readiness in the adoption of e-procurement system</td>
</tr>
<tr>
<td>Omokonga, S.</td>
<td>2014</td>
<td>Effect of IFMIS on the performance of public sector organizations</td>
<td>IFMIS automates procedures and internal control, therefore reducing opportunity for corruption, while tracking the stages of the transaction process</td>
<td>The public sector ought to employ the use of Information systems to enhance transparency and effectiveness, while reducing opportunity for discretion and corruption</td>
</tr>
<tr>
<td>Kibet, W., Njeru, A.</td>
<td>2014</td>
<td>Effects of procurement planning on procurement performance: a case of agricultural development corporation, Nairobi</td>
<td>Existence of procurement plans reduces dependency on suppliers, and therefore impacting procurement performance positively.</td>
<td>This study focused only on performance indicators to gauge whether procurement plans have been adopted by public institutions in the delivery of service to the public.</td>
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<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Title</td>
<td>Findings/Implications</td>
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<tr>
<td>Chado, H.</td>
<td>2015</td>
<td>Effect of IFMIS on the financial management of the public sector in Kenya</td>
<td>The findings of the research indicated that IFMIS is able to trace all stages of a transaction process enhancing transparency. Public procurement needs to be conducted on IFMIS since this translates to the tracking of financial events through an automated financial system resulting to transparency and accountability.</td>
<td></td>
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<tr>
<td>Rotich, G., Muma, B., Waruguru, E.</td>
<td>2015</td>
<td>Relationship between E-tendering and procurement performance among county governments in Kenya</td>
<td>Online tendering practices have resulted to faster submission of tender documents by prospective suppliers, reducing tender cycle. The study failed to address organizational flexibility in the implementation and use of Online tendering system.</td>
<td></td>
</tr>
<tr>
<td>Biwott, E.</td>
<td>2015</td>
<td>IFMIS implementation and impact on public procurement performance at national government of Kenya</td>
<td>IFMIS has been incorporated by ministries in conducting their procurement practices, enabling ministries to conduct procurement efficiently. The study only addressed IFMIS implementation and its impact on public procurement performance.</td>
<td></td>
</tr>
<tr>
<td>Gathua, F.K.</td>
<td>2015</td>
<td>Public procurement process in Kenya: A review of its performance in the University of Nairobi</td>
<td>The relevant departments prepare annual procurement plans, and these plans impacted positively on procurement performance by providing efficient utilization of available resources. There is need for organizations to focus their attention on procurement planning tendering procedures and adaptation of government policies in procurement.</td>
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<tr>
<td>Author(s)</td>
<td>Year</td>
<td>Title</td>
<td>Summary</td>
<td>Notes</td>
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<tr>
<td>Sengbeh, A.B.</td>
<td>2015</td>
<td>Ethical Procurement practices and supply chain performance of Kenyan energy sector</td>
<td>Transparency in public tendering procedures is guaranteed in government owned entities in the public sector, the energy sector also debriefs all unsuccessful suppliers on the weaknesses of their tender documents</td>
<td>This study was only based on ethical procurement practices on supply chain performance</td>
</tr>
<tr>
<td>Amemba, C., Nyaboke, G., Osoro, A., Mburu, N.</td>
<td>2015</td>
<td>Challenges affecting public procurement performance process in Kenya</td>
<td>The relationship between the buyer and the seller in Kenya is handle on a transactional basis in most institutions, there lacks a sense of partnership between the supplier and the buyer</td>
<td>The study only looked into challenges faced partners in public procurement so as to ensure there is cost effectiveness in the utilization of government resources</td>
</tr>
<tr>
<td>Mburu, M.M., Ngahu, S.</td>
<td>2016</td>
<td>Influence of IFMIS on financial management in Nakuru County Government</td>
<td>IFMIS has raised financial prudence, and that the county is able to meet its financial obligations. Efficient monetary allocation has also been realized</td>
<td>The study did not address the effectiveness of IFMIS in implementation of development projects in county governments</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
<td>Title</td>
<td>Findings</td>
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<tr>
<td>Eshitoli, W.</td>
<td>2016</td>
<td>E-tendering adoption and procurement performance of oil marketing firms in Kenya</td>
<td>Marketing firms in Kenya had adopted e-tendering, but still relied on traditional tendering methods. The study did not address incorporating e-tendering in the procurement function.</td>
<td></td>
</tr>
<tr>
<td>Ndiiri, F.K.</td>
<td>2016</td>
<td>E-procurement implementation and performance of county governments of Kenya</td>
<td>Counties have embraced e-procurement with the aim of boosting versatility of operations, strategic adaptability, technical adaptability as well as contextual adaptability. The study did not look into e-procurement implementation in the promotion of procurement performance.</td>
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2.5 Conceptual Framework

**Independent Variable**

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<th>IFMIS Control Systems</th>
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<tr>
<td>• Information security</td>
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<td>• Fraud Detection</td>
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<th>Online Tendering</th>
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<tr>
<td>• Time reduction</td>
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<td>• Transparency</td>
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<tr>
<th>Automated Planning</th>
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<tr>
<td>• Cost reduction</td>
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<td>• Procurement delays</td>
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<th>Automated Supplier Engagement</th>
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<tbody>
<tr>
<td>• Contract management</td>
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<tr>
<td>• Supplier performance</td>
</tr>
</tbody>
</table>

**Dependent Variable**

<table>
<thead>
<tr>
<th>Public Procurement Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-procurement effectiveness</td>
</tr>
<tr>
<td>• Transparency</td>
</tr>
<tr>
<td>• Accountability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Procurement efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Decreased lead times</td>
</tr>
<tr>
<td>• Compliance</td>
</tr>
</tbody>
</table>

**Figure 2.1: Conceptual Framework**
(Source: Researcher, 2017)
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This discusses the various research approaches that were followed in the completion of this study. It is a blueprint for data collection, measurement and data analysis. The following subsections were included: research design, target population, sampling design, reliability, validity, data collection instrument, analysis of data and ethical considerations.

3.2 Research Design

Orodho (2004) illustrates that research design is the blueprint, framework or disposition that is used to initiate answers to research problems. A descriptive study shows an accurate profile of an individual, a situation or an event. Descriptive research design is concerned with the description, explanation and interpretation of the present conditions of a phenomena (Robson, 2002).

This study adopted a descriptive research design to acquire information about the current state of the phenomena and to also describe the relationship between the variables. A descriptive research design facilitates the study of relationships between variables, through the use of the regression model. This design also helps to save on both time and cost by eliminating the struggles of having to run after respondents so as to obtain the required response rate. A descriptive research design involving collection of data to establish whether a relationship exists between IFMIS and public procurement performance and to what extent was adopted.
3.3 Target Population

Target population is defined as the population which the researcher wants to generalize results Mugenda & Mugenda (2003). The target population included members of staff from Kiambu county government of Kenya, working in procurement department. The study population was narrowed to include top management, supervisors, and procurement officers. The procurement department was key in determining the influence of IFMIS in public procurement performance.

Table 3.1: Target Population

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Subtotal</th>
<th>Percentage Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Supervisors</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Departments</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Sub counties</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Hospitals</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Kiambu County Government (2016)

3.4 Sampling Procedure and Sample size

Sampling is concerned with the selection of individuals for a study. Individuals selected represent a larger group from which they are selected (Mugenda & Mugenda, 2003). From the population frame, the required number of respondents was selected to make a sample. There are 100 employees in the procurement department. At least 10% of the target population would be
appropriate, but a population with a higher sample size makes the results more reliable (Mugenda & Mugenda, 2003). The researcher used stratified and simple random sampling, where each member of the population had an equal chance of being represented in the sample.

The total number of accessible respondents was less than ten thousand; the following formula was applied since the population was less than 10000.

\[ nf = \frac{n}{1 + \frac{n}{N}} \]

Where:

- \( nf \) = the desired sample size (where pop < 10000)
- \( n \) = desired sample size (where pop > 10000)
- \( N \) = Estimate of the population size

\( n \) is also determined as follows:

\[ n = Z^2 \times pq/d^2 \]

Whereby:

- \( n \) = sample size desired
- \( Z \) = standard normal deviation at the appropriate confidence level, which is equal to 1 at 95% confidence level
- \( p \) = proportion of the population with characteristics being measured, in this case it is estimated to be 0.5
- \( q = 1-p \)
d = level of statistical significance set, which is 0.05 in this case

\[ n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \]

\[ = 384 \]

\[ nf = 384 \frac{1}{1 + \frac{384}{100}} \]

\[ = 79.34 \]

80 respondents

Table 3.2: Sample Size

<table>
<thead>
<tr>
<th>Stratum</th>
<th>Population</th>
<th>80% of the Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Supervisors</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>Departments</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>Sub counties</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Hospitals</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100</td>
<td>80</td>
</tr>
</tbody>
</table>

Source: Kiambu County Government
3.5 Data Collection Instrument

Data collection entails the precise, systematic gathering of information relevant to the research purpose. This study made use of a semi-structured questionnaire -capturing the various variables of the study and Likert scale was used to allow for consistency and ease of answering questions—as the major tool for the collection of primary data. Questionnaires enable respondents to obtain clarification concerning the questions (Kothari, 2004). Closed ended questions generate specific responses, while allowing specific responses and easy analysis of data. Open ended questions on the other hand give the respondents a chance to provide more information on the influence of integrated financial management information system on public procurement performance. The questionnaire was administered to staff members working in the procurement department.

3.5.1 Pilot Testing

According to Mugenda and Mugenda (2003), a sample size of 1% to 10% of the sample size for the actual study, is a reasonable number of participants to consider in enrolling a pilot test. Ten (10) employees in procurement department in Nairobi County Government were considered to test the reliability and validity of the questionnaire. The instrument was issued to the procurement staff members for a period of ten working days. Their views about the questionnaire and the possible areas of correction were helpful in refining the research instrument enabling the instrument to give more accurate information concerning IFMIS and its influence in Kiambu County Government.

3.5.2 Validity

Validity is defined as the accuracy and meaningfulness of inferences which are based on the results (Mugenda & Mugenda, 2003). Validity entails finding out whether study findings
represent what they indicate (Saunders, Lewis, & Thornhill, 2008). Validity is the degree to which results obtained from analysis of data actually represent the phenomenon. Kimwele (2011), indicates three subgroups of validity: Construct, internal and external validity. In order to test and improve validity of the instrument, the researcher did a pre-test of the questionnaire in a pilot study. Expert judgement of content validity was used. Kothari, (2004) indicates that determination of content validity is based on judgement and intuition. It can be judged by a panel of individuals who are responsible in judging how well the instrument meets standards, but there are no numerical ways of expressing it. Validity was assured through constant consultations with the supervisor to find out whether the instrument measures what it was intended to measure. The suggestions raised by the supervisor were used to improve clarity of items on the questionnaire.

3.5.3 Reliability

Reliability is the extent to which data collection techniques or analysis procedures yield consistent findings after repeated trials (Saunders et al., 2008). To avoid participant error, a more neutral time was selected when the employees were neither on a high, nor on a low. To avoid participant bias especially in instances where the bosses may be authoritarian, elaborate steps were taken to guarantee respondents of their anonymity when filling the questionnaires. The study applied internal consistency technique to assess reliability of the instrument. Internal consistency involves administering a single test to a sample of subjects and correlating a score from one item with scores from other items (Mugenda & Mugenda, 2009).

Pilot test was helpful in identifying areas of review, clarifying the instrument, and ensuring that the questions were in line with the objectives. To determine correlation among items, Cronbach’s Coefficient Alpha is computed where a coefficient of 0.70 or more, indicates that there is a high
degree of reliability (Mugenda & Mugenda, 2009). The results of the pilot study are indicated in table 3.3 below.

Table 3.3: Reliability Analysis

<table>
<thead>
<tr>
<th>Scale Mean if Item Deleted</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Procurement Performance</td>
<td>15.6843</td>
</tr>
<tr>
<td>IFMIS Control Systems</td>
<td>15.9451</td>
</tr>
<tr>
<td>Online Tendering</td>
<td>15.8994</td>
</tr>
<tr>
<td>Automated Planning</td>
<td>15.7473</td>
</tr>
<tr>
<td>Automated Supplier Engagement</td>
<td>15.6118</td>
</tr>
<tr>
<td>Cronbach’s Alpha (overall)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

Results as indicated by table 3.5.2 above the overall Cronbach’s Alpha coefficient were 0.773, and which was above the minimum threshold of 0.70. This showed that the items of the questionnaire had a high consistency, and for this reason the variables of the study were retained the way they were. If any of the variables were to be removed, there would not have any effect on the stability of the other variables.

3.6 Data Collection Procedure

The researcher obtained a letter of introduction from the Kenyatta University, and after approval by the National Council for Science Technology and innovation, the researcher embarked on the process of data collection, after providing these approvals to Kiambu County Government, requesting to carry out the study. An introduction letter was issued to the respondents so as to ensure that they felt respected and that they were also giving consent for their participation. The researcher then moved into the area under study, identified the target population and proceeded
to select the respondents. The questionnaires were administered through drop and pick later method. The whole exercise of data collection took a period of one month.

3.7 Data Analysis and Presentation

Data analysis entails bringing order, structure and meaning to a large volume of data collected (Mugenda & Mugenda, 2003). This involves the organization of data in a meaningful way, editing, coding as well as thematic presentations. Data gathered from questionnaires was thoroughly and carefully scrutinised to ensure that only complete, accurate and relevant data was finally coded. This was attained by counter checking all documented responses from all questionnaires to detect and eliminate inconsistencies as well as irrelevancies in the responses. Qualitative data was analysed through the use of content analysis, where information gathered was summarized first, followed by categorization of this information, coding into emerging themes and finally presenting it in a narrative form. Quantitative data was analysed through the use of descriptive statistics which included: frequencies, percentages, means, standard deviations and Multiple Linear Regression Model. Multiple Regression Analysis is helpful in the determination of relationship between independent and dependent variables.

The Regression Model applied is as follows:

\[ Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + e \]

Where:

\( Y \) = Public procurement performance (dependent variable)

\( B_0 \) = Constant Term
B₁, B₂, B₃, B₄ = Beta coefficients

X₁ = IFMIS control Systems

X₂ = Online tendering

X₃ = Automated planning

X₄ = Automated supplier engagement

e = Error term representing omitted variables

Analysed data was presented in form of findings, interpretations, conclusions and recommendations through the use charts, tables and figures.

Independent and independent variables were administered to test for normality so as to confirm whether the data had a normal distribution or not. The test was done through the use of Kolmogorov Smirnov test and Shapiro Wilk test. These tests are necessary in the confirmation of whether regression coefficients are in a linear model, which determines the normality of a model. The tests are done such that given H₀ and H₁, with α = 0.05, reject H₀ if p-value is less than α or else fail to reject H₀

Multicollinearity was checked by examining regression coefficients to determine changes that occurred in the inclusion or exclusion of other variables. Large changes are an indication that the variables cause multicollinearity, and therefore should be removed from the model. The process is repeated until when the regression coefficients no longer change. Variance Inflation Factor was be used to detect multicollinearity. This factor is responsible for inflating sample variance,
where one or more VIFs are an indication of the presence of multicollinearity in the data. VIF > 5 or 10 is an indication that associated regression coefficients are poorly estimated due to multicollinearity in the data.

3.8 Ethical Considerations

This research maintained a high confidentiality of the respondents. Anonymity of the respondents was also guaranteed, and information provided treated with a high sense of confidentially. The research also avoided causing embarrassment, harm or material disadvantage to the respondents. The researcher also guaranteed the respondents that the research was intended for academic purposes only.
CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction
This chapter comprises of results, analysis and findings of the study and how they relate to the study objectives. Presentation of the results is based on IFMIS and its influence on public procurement performance in Kiambu County Government. Data for this study was collected through the use of a questionnaire, which was designed with the objectives of the study.

4.1.1 Response Rate
This section indicates the response rate for all the questionnaires that were issued and also justifies whether the responses were adequate for the analysis of data. Out of 80 respondents that were targeted in the data collection process, 62 questionnaires were filled and returned representing a response rate of 78%. Table 4.1 below indicates the response rate.

Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Population</td>
<td>80</td>
<td>100.00</td>
</tr>
<tr>
<td>Responses</td>
<td>62</td>
<td>78.00</td>
</tr>
<tr>
<td>Non – responses</td>
<td>18</td>
<td>22.00</td>
</tr>
</tbody>
</table>

Source: Research Data (2017)
The acquired results are acceptable as supported by Mugenda and Mugenda (2003) who pointed out that 50% response rate is satisfactory, 60% is good enough, while 70% and above is considered very good. The high response effort was made possible because of the efforts of the researcher to remind the respondents to fill in the questionnaires. Failure to respond to the questionnaires by 22% of the respondents’ maybe attributed to their absence from their stations when the study was being conducted.

### 4.2 Respondents Demographic Data

Respondents indicated their gender as highlighted by the results in figure 4.1 below:

![Pie Chart: Gender of Respondents](image)

**Figure 4.1: Gender of Respondents**

Source: Research Data (2017)
The results of the study indicated that 51.6% of staff in the procurement department were female, while male staff members were represented by 48.4%. Both types of gender were given consideration in the study, though there were more female staff members compared to the male gender. This indicated that the county government of Kiambu offered equal opportunity, and that no gender was discriminated while appointing members of staff.

4.4.2 Age of Respondents

The respondents indicated their age categories and these responses are captured in figure 4.2 that follows.

![Figure 4.2: Age of Respondents](image)

Source: Research Data (2017)

From the findings, 38.7% who formed the majority of the staff members were in the age category of 31-40 years. This was followed by those aged between 21-30 years at 29%, those between 41-
50 years at 22.6%, and finally those over 50 years at 9.7%. This was an indication that majority of those who worked in the procurement department were of a relatively young age and this can be attributed to their technical knowhow and knowledge of computer and information systems which form the backbone for IFMIS.

### 4.2.2 Period of Service with the Procurement Department in Kiambu County

The aim of this section was to investigate the period of service in years that staff members had worked in the procurement department. These results are as indicated by figure 4.3 below.

![Figure 4.3: Period of Service](image)

The findings of this study indicated that 80.65% forming the majority among staff members had worked with the County Government of Kiambu for a period of 2 to 5 years, while the remaining 19.35% had worked with the County government for a period of 1 year or less. This was informed by the fact that county governments have only been in existence for less than five years, when the country went into an election, and elected governors to head county governments.
as stipulated by the Kenyan Constitution promulgated in the year 2010. The majority of these respondents had great knowledge on how the procurement department operated and the IFMIS as well.

4.2.3 Level of Education

This section investigated the level of education for the members of staff in the procurement department in Kiambu County Government. The results are illustrated in figure 4.4 below:

![Level of Education Chart]

**Figure 4.4: Level of Education**

Source: Research Data (2017)
The results of the study indicated that 56.45% of the staff members were university graduates, followed by 25.81% diploma holders, while 17.74% of the staff members had post-graduate qualifications. The high level of university graduates was an indication that those who were users of IFMIS had the requisite knowledge to transact on the platform. This can be attributed to the need for those who are users of the systems to possess high qualifications.

### 4.2.4 Job Position

This section indicated the job positions of the members of staff in procurement department in the County Government of Kiambu. Figure 4.5 below illustrates the findings.

![Job Position](image)

**Figure 4.5: Job Position**

Source: Research Data (2017)
The finding indicated that a majority of the staff members working in the procurement department in Kiambu County Government were mainly departmental staff members (66.13%), followed by supervisory staff members at 22.58%, other (support staff) at 8.06% and management staff at 3.2%. Majority of the staff members were departmental staff who are mainly the users of IFMIS, followed by their supervisors, while managerial staff formed the least group. This is an indication that IFMIS is most applicable at the operational level of management, where most organizational transactions occur, with managers receiving periodical reports.

4.3 Descriptive Statistics

Data collected was analyzed in accordance with the study variables that is; IFMIS Control Systems, Online Tendering, Automated Planning, Automated Supplier Engagement, and Public Procurement Performance. Descriptive statistics are helpful in summarizing the main features of the variables.

4.3.1 IFMIS Control Systems

The respondents who were users of IFMIS were requested to give a rating on the extent to which they agreed on IFMIS control systems in Kiambu County Government. A scale of 1-5 was provided where 1 represented very low extent, 2 low extent, 3 neutral, 4 moderate extent and 5 great extent. The findings of the study are presented in table 4.2 below.
Table 4.2: IFMIS Control Systems

<table>
<thead>
<tr>
<th>IFMIS Control Systems</th>
<th>Percentage Responses (%)</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very low extent</td>
<td>Low extent</td>
<td>Neutral extent</td>
<td>Moderate extent</td>
</tr>
<tr>
<td>Use of IFMIS has resulted to control of expenditure in the use of public resources</td>
<td>1.6  8.1    17.7  33.9  38.7  62</td>
<td>4.00</td>
<td>1.024</td>
<td></td>
</tr>
<tr>
<td>IFMIS helps restrict disclosure of sensitive information to unauthorized persons</td>
<td>4.8  9.7    22.6  37.1  25.8  62</td>
<td>3.69</td>
<td>1.110</td>
<td></td>
</tr>
<tr>
<td>IFMIS use to monitor procurement process increases risk of detection and also as</td>
<td>8.1  11.3   25.8  16.1  38.7  62</td>
<td>3.66</td>
<td>1.318</td>
<td></td>
</tr>
<tr>
<td>deterrent to corruption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IFMIS use has helped to expedite reports and data transmission</td>
<td>0.0  12.9   29.0  27.4  30.6  62</td>
<td>3.76</td>
<td>1.035</td>
<td></td>
</tr>
<tr>
<td>IFMIS exposes corrupt officials in the procurement process</td>
<td>4.8  11.3   24.2  27.4  32.3  62</td>
<td>3.71</td>
<td>1.179</td>
<td></td>
</tr>
<tr>
<td>IFMIS control system have enhanced confidence with the procurement process</td>
<td>0.0  6.5    32.3  37.1  24.2  62</td>
<td>3.79</td>
<td>0.890</td>
<td></td>
</tr>
<tr>
<td><strong>Aggregate</strong></td>
<td></td>
<td></td>
<td><strong>3.77</strong></td>
<td><strong>1.093</strong></td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

Mean scores of 3.5 – 5.0 on the Likert scale represented “Moderate extent” and “Great extent”. Scores of 2.5 – 3.4 represented “Neutral extent”, while scores of 1.0 – 2.4 represented “Very low extent” and “low extent”. A mean score for the five variables was computed.

Respondents indicated that the use of IFMIS had resulted to control of expenditure in the use of public resources in public procurement to a moderate extent (mean score = 4.00), IFMIS helps restriction of disclosure of sensitive information to unauthorized persons to a moderate extent.
(mean score = 3.69), use of IFMIS to monitor the procurement process has increased the risk of
detection, therefore acting as a deterrent to corruption, to a moderate extent (mean score = 3.66),
IFMIS use has helped to expedite reports and data transmission to a moderate extent (mean score
= 3.76), IFMIS exposes corrupt officials in the procurement process to a moderate extent (Mean
score = 3.71), and that IFMIS control systems have enhanced confidence in the procurement
process to a moderate extent (3.79). The findings of this study indicate that Kiambu County
Government should strengthen control systems to ensure that IFMIS is effective in the
procurement process.

The aggregate mean indicates that IFMIS controls impacts public procurement performance in
Kiambu County Government to a moderate extent (µ = 3.77). The aggregate standard deviation
was 1.093. The findings of this study are consistent with (Chado, 2015) as well as (Omokonga,
2014), who studied Effect of IFMIS on performance of public sector of public sector
organizations, and Effect of IFMIS on financial management of the public sector in Kenya. They
found out that control systems ensure that IFMIS is secure, helping to eliminate vices such as
corruption and also resulting to control of expenditure of public resources. Public procurement
when conducted on IFMIS platform translates to tracking of financial events enhancing
transparency and accountability and at the same time reducing opportunity for discretion and
corruption. These findings are supported by Diffusion of Innovation Theory that is useful in
evaluating whether IFMIS is disruptive, since the system puts in place control systems
eliminating discretion in public procurement.
4.3.2 Online Tendering

The respondents were required to rate online tendering in the County Government of Kiambu. A scale of 1-5 was provided, where 1 was very low extent, 2 low extent, 3 neutral, 4 moderate extent, and 5 great extent. Table 4.3 below summarizes these findings.

Table 4.3: Online Tendering in Kiambu County Government

<table>
<thead>
<tr>
<th>Online Tendering</th>
<th>Percentage Responses (%)</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online tendering is faster and more efficient than a traditional purchasing cycle</td>
<td>Very Low extent</td>
<td>1.6</td>
<td>8.1</td>
<td>17.7 33.9 38.7 62 4.00 1.024</td>
</tr>
<tr>
<td>e-tendering promotes good procurement practices resulting to competitive advantage</td>
<td>Low extent</td>
<td>4.8</td>
<td>9.7</td>
<td>22.6 33.9 29.0 62 3.73 1.133</td>
</tr>
<tr>
<td>Online tender portal acts as a database for tender advertisement and award of contracts improving access to county government tenders</td>
<td>Neutral extent</td>
<td>0.0</td>
<td>9.7</td>
<td>22.6 27.4 40.3 62 3.98 1.016</td>
</tr>
<tr>
<td>Online tendering increases transparency of the procurement process, while reducing ordering and handling costs and tendering cycle time</td>
<td>Moderate extent</td>
<td>1.6</td>
<td>14.5</td>
<td>16.1 37.1 30.6 62 3.81 1.084</td>
</tr>
<tr>
<td>Adoption of e-procurement practices promotes supplier engagement, eliminating collusion, cartels and bid rigging</td>
<td>Great extent</td>
<td>1.0</td>
<td>19.4</td>
<td>25.8 35.5 19.4 62 3.55 1.019</td>
</tr>
<tr>
<td>Extent to which online tendering has eliminated irregularities in the award of tenders</td>
<td></td>
<td></td>
<td>11.3</td>
<td>27.4 38.7 22.6 62 3.73 0.944</td>
</tr>
</tbody>
</table>
Online tendering in Kiambu County

<table>
<thead>
<tr>
<th>Variable</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>3.82</td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

Mean scores of 3.5 – 5.0 on the Likert scale represented “Moderate extent” and “Great extent”. Scores of 2.5 – 3.4 represented “Neutral extent”, while scores of 1.0 – 2.4 represented “Very low extent” and “low extent”. A mean score for the five variables was computed.

The findings indicated that, online tendering is faster than traditional purchasing cycle to a moderate extent (mean score = 4), e-tendering promotes good procurement practices resulting to competitive advantage to a moderate extent (mean score = 3.73), online tender portal acts as a database for tender advertisement and award of contracts improving access to county government tenders to a moderate extent (mean score = 3.98), online tendering increases transparency of the procurement process, reducing ordering and handling costs and tendering cycle times to a moderate extent (mean score = 3.81), adoption of e-procurement practices promotes supplier engagement, eliminating collusion, cartels and bid rigging to a moderate extent (mean score 3.55), extent to which online tendering has eliminated irregularities in the award of tenders to a moderate extent (mean score = 3.73), online tendering in Kiambu County Government to a moderate extent (mean score = 3.95). The county government should strengthen e-procurement practices so as to facilitate supplier engagement and thus supplier confidence in the process. The high performance of an aggregate mean of (µ=3.82), can be attributed to the automation of the procurement process resulting to improved confidence in the process.
The results of this study are in line with the findings of (Rotich, Benard, & Waruguru, 2015) as well as (Ndiiri, 2016), who studied Relationship between E-tendering and procurement performance among county governments in Kenya, and E-procurement implementation and performance of county governments of Kenya respectively. They found out that e-tendering makes the tendering process more efficient and attractive to suppliers. County governments have also adopted e-procurement with the aim being to boost versatility of operations as well as technical adaptability. Online tendering has also resulted to faster submission of tender documents, reducing the tender cycle. These findings are supported by E-technology Perspective Theory, in that transition to modern e-procurement requires strategic adaptation, and the theory supports organizational change.

4.3.3 Automated Planning

This study sought to establish the extent of automated procurement planning in Kiambu County Government. A scale of 1-5 was employed, where 1 indicated strongly disagree and 5 indicated strongly agree. The results are summarized in Table 4.4 below.
Table 4.4: Automated Planning

<table>
<thead>
<tr>
<th>Automated planning</th>
<th>Percentage response (%)</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes what is the importance</td>
<td>Strongly disagree</td>
<td>0.0</td>
<td>6.5</td>
<td>9.7</td>
</tr>
<tr>
<td>Automated planning helps to reduce haphazard procurement</td>
<td>Disagree</td>
<td>0.0</td>
<td>9.7</td>
<td>16.1</td>
</tr>
<tr>
<td>county governments more attractive to suppliers</td>
<td>Neutral</td>
<td>3.2</td>
<td>4.8</td>
<td>22.6</td>
</tr>
<tr>
<td>Automated plans helps in the identification and appointment</td>
<td>Agree</td>
<td>0.1</td>
<td>6.5</td>
<td>22.6</td>
</tr>
<tr>
<td>of responsive suppliers</td>
<td>Strongly agree</td>
<td>0.0</td>
<td>4.8</td>
<td>41.9</td>
</tr>
<tr>
<td>Existence of automated planning reduces dependency on suppliers</td>
<td></td>
<td>0.0</td>
<td>8.1</td>
<td>27.4</td>
</tr>
<tr>
<td>Automated planning reduces procurement delays</td>
<td></td>
<td>1.6</td>
<td>1.6</td>
<td>19.4</td>
</tr>
<tr>
<td>Automated planning reduces costs involved in the procurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automated planning influences procurement by providing focused</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and efficient utilization of resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.97</td>
<td>0.924</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

A mean score of 3.5 - 5.0 represented “Agree” and “Strongly Agree”, 2.5 – 3.4 “Neutral”, 1.0 – 2.4 “Strongly Disagree” and “Disagree”. The finding indicated that respondents agreed that automated planning was important (mean score = 4.24). Respondents also agreed that automated planning helps to reduce haphazard procurement making county governments more attractive to
suppliers (mean score = 3.98), the also agreed that automated plans helps in the identification and appointment of responsive suppliers (mean score 3.87).

Respondents also agreed with the statement that existence of automated planning reduces dependency on suppliers (mean score = 3.98). They agreed that automated planning reduces costs involved in the procurement costs (mean score 3.68), automated planning cost reduces costs involved in the procurement process (mean score = 3.97). The respondents also agreed that automated planning influences procurement by providing focused and efficient utilization of resources (mean score = 4.06). The aggregate mean (µ=3.97) and aggregate standard deviation (σ = 0.924) indicated that automated planning is highly effective in Kiambu County Government.

The findings of this research are in agreement with those of Gathua (2015) as well as Kibet and Njeru (2014) who found out that existence of procurement plans reduces dependency on suppliers, as a result influencing public procurement positively and that procurement plans should be prepared in a participatory manner and in line with the set objectives. These findings are supported by Information Systems Success model that lays more emphasis on service quality and realization of net benefits to the organization. Automated planning helps the organization to realize maximum benefits.

4.3.4 Automated Supplier Engagement

The study sought to find out the extent of automated supplier engagement in Kiambu County Government. A scale of 1-5 was used where 1 represented very low extent whereas a score of 5 indicated great extent. The results are indicated in Table 4.5 below:
### Table 4.5: Automated Supplier Engagement

<table>
<thead>
<tr>
<th>Automated Supplier Engagement</th>
<th>Percentage Response (%)</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very low extent</td>
<td>Low extent</td>
<td>Neutral extent</td>
<td>Moderate extent</td>
</tr>
<tr>
<td>What is the importance of supplier engagement</td>
<td>0.0</td>
<td>3.2</td>
<td>8.1</td>
<td>53.2</td>
</tr>
<tr>
<td>Automated supplier engagement improves transparency by helping suppliers understand the means through which contracts are evaluated</td>
<td>0.0</td>
<td>1.6</td>
<td>25.8</td>
<td>45.2</td>
</tr>
<tr>
<td>Automated supplier engagement helps in managing relationships for both long-term and short-term contracts</td>
<td>0.0</td>
<td>1.6</td>
<td>25.8</td>
<td>37.1</td>
</tr>
<tr>
<td>Automated supplier management facilitates involvement of suppliers in performance review, training and capacity development</td>
<td>0.0</td>
<td>1.6</td>
<td>22.6</td>
<td>38.7</td>
</tr>
<tr>
<td>Automated supplier engagement helps to create and maintain contacts with suppliers therefore decreasing procurement costs</td>
<td>0.0</td>
<td>1.6</td>
<td>17.7</td>
<td>41.9</td>
</tr>
<tr>
<td>Automated supplier management makes the process of acquisition of goods and services efficient</td>
<td>0.0</td>
<td>3.2</td>
<td>24.2</td>
<td>32.3</td>
</tr>
<tr>
<td><strong>Aggregate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2017)
A mean score of 1 – 2.4 represented “very low extent” and “low extent” 2.5 – 3.4 represented “neutral”, while 3.5 – 5 represented “moderate extent” and “great extent”.

The findings from this study indicated that automated supplier engagement was important to a moderate extent (mean score = 4.21), automated supplier engagement improves transparency by helping suppliers understand the means through which contracts are evaluated to a moderate extent (mean score = 3.98), automated supplier engagement helps in managing relationships for both long-term and short-term contracts to a moderate extent (mean score = 4.06), automated supplier management facilitates involvement of suppliers in performance review, training and capacity development to a moderate extent (mean score = 4.11), automated supplier engagement helps to create and maintain contacts with suppliers therefore decreasing procurement costs to a moderate extent (mean score = 4.18), automated supplier management makes the process of acquisition of goods and services efficient to a moderate extent (mean score = 4.10). The findings of this study represented by an aggregate mean (μ=4.11) and (σ =0801), indicated that automated supplier engagement had great impact in the County Government of Kiambu and guaranteed that the procurement process was transparent.

These findings concur with the findings of Sengbeh (2015) and Mandiyambira (2012), who found out that long-term relationships with a number of suppliers is an effective strategy in the management of supplier relationships, for both long-term and short-term projects, and that informing unsuccessful suppliers on the weaknesses of their tender documents is vital in the procurement process. The results of this study are supported by Diffusion of Innovation Theory in that supplier engagement is a complete shift from the traditional methods of procurement,
where disqualified suppliers would not be informed of their reasons for disqualification and thus were unable to make improvements for future dealings.

### 4.3.5 Public Procurement Performance

Public procurement performance was also measured, where a scale of 1 – 5 was used. 1 represented very low extent, while 5 represented very high extent. The study findings are indicated in Table 4.6 below:

**Table 4.6: Public Procurement Performance**

<table>
<thead>
<tr>
<th>Public Procurement Performance</th>
<th>Percentage Response (%)</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Low     Low  Moderate High  Very high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transparency of the procurement process</td>
<td>0.0  4.8  17.7  37.1  40.3</td>
<td>62</td>
<td>4.13</td>
<td>0.877</td>
</tr>
<tr>
<td>Decreased lead times in delivery of goods</td>
<td>0.0  3.2  22.6  35.5  38.7</td>
<td>62</td>
<td>4.10</td>
<td>0.863</td>
</tr>
<tr>
<td>Accountability in the procurement process</td>
<td>1.6  9.7  37.1  24.2  27.4</td>
<td>62</td>
<td>3.66</td>
<td>1.039</td>
</tr>
<tr>
<td>Satisfaction of stakeholders in procurement</td>
<td>0.0  4.8  25.8  30.6  38.7</td>
<td>62</td>
<td>4.03</td>
<td>0.923</td>
</tr>
<tr>
<td>Compliance with procurement rules</td>
<td>0.0  0.0  25.8  40.3  33.9</td>
<td>62</td>
<td>4.08</td>
<td>0.775</td>
</tr>
<tr>
<td>How would you rate public procurement performance in Kiambu county government</td>
<td>0.0  1.6  19.4  37.1  41.9</td>
<td>62</td>
<td>4.19</td>
<td>0.807</td>
</tr>
<tr>
<td><strong>Aggregate</strong></td>
<td><strong>4.03</strong>  <strong>0.881</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2017)
Mean scores of 1 to 2.4 indicated very low extent, 2.4 to 3.4 indicated moderate extent, and 3.5 to 5.0 indicated high extent and very high extent. The findings indicated that respondents agreed that procurement process was more transparent to a high extent (mean score = 4.13), there was decreased lead time in delivery of goods to a high extent (mean score = 4.10), there was a high extent of accountability in the procurement process (mean score = 3.66), stakeholders in the procurement process had been satisfied to a high extent (mean score = 4.03), compliance with procurement rules was had been done to a high extent (mean score = 4.08), public procurement performance in Kiambu County Government was at high extent (mean score = 4.19). The aggregate mean score ($\mu = 4.03$) and aggregate standard deviation ($\sigma = 0.881$), indicated that public procurement performance in the county government of Kiambu had been significantly transformed following the introduction of IFMIS in the procurement process. More emphasis should be to ensure that accountability in the procurement process is enhanced as indicated by the mean score of (3.66).

The results of this study are in line with the findings of Kibet and Njeru (2014) who found out that procurement planning reduces dependency on suppliers, enabling adherence to procurement portfolio and needs categorization thus impacting procurement performance positively. The study also concurs with the findings of Ndiiri (2016) who found out that there is improved flow of information, shortlisting of tenders is done by the e-procurement system, ordering is done through the county website, all counties make requisitions online, and tenders are advertised online, specifications for procured items are posted to county websites, and that there is competitive bidding and sourcing, thus improving procurement performance. These findings are supported by Agency Theory, in that relationships between the buying firm and suppliers is
fostered, resulting to improved public procurement performance. Control measures are also put in place to ensure that purchases are in line with the desires of the organization.

4.4 Diagnostic Tests

To check on normality and multi-collinearity in the data set, and to establish that there was no doubt on the validity on the conclusions reached from the findings, diagnostic tests were employed.

4.4.1 Test for Normality

The study tested for normality by using both Kolmogorov Smirnov and Shapiro Wilk tests. The results are shown in Table 4.7 below.

Table 4.7: Test of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Df</td>
</tr>
<tr>
<td>Public Procurement Performance</td>
<td>.127</td>
<td>62</td>
</tr>
<tr>
<td>IFMIS Control System</td>
<td>.118</td>
<td>62</td>
</tr>
<tr>
<td>Online Tendering</td>
<td>.122</td>
<td>62</td>
</tr>
<tr>
<td>Automated Planning</td>
<td>.157</td>
<td>62</td>
</tr>
<tr>
<td>Automated Supplier Engagement</td>
<td>.119</td>
<td>62</td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

The results in table 4.9 above indicate that using Shapiro- Wilk test the p-value is above 0.05. Public procurement performance had a p-value 0.70, IFMIS control system was 0.217, online tendering 0.117, automated planning 0.45, automated supplier engagement 0.41. The results
indicated that the p-value for the independent variables was above 0.05 and was therefore significant, indicating that the data was normally distributed.

### 4.4.2 Test for Multicollinearity

Variance inflation factors (VIF) was employed to investigate whether the independent variables were strongly correlated. VIF should not go beyond 10 for the variables as well. The results of Variance Inflation Factors are shown in Table 4.8 below.

**Table 4.8: Test for Multicollinearity**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFMIS Control Systems</td>
<td>.742</td>
<td>1.347</td>
</tr>
<tr>
<td>Online Tendering</td>
<td>.695</td>
<td>1.439</td>
</tr>
<tr>
<td>Automated Planning</td>
<td>.602</td>
<td>1.660</td>
</tr>
<tr>
<td>Automated Supplier Engagement</td>
<td>.832</td>
<td>1.202</td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

Test for correlation between the independent variables in this study indicated severe multicollinearity was not exhibited by the data. The results indicated that none of the independent variables had a VIF of 10, and the tolerance for all the variables were greater than 0.1, therefore this study concluded that there was no multi-collinearity among the variables.
4.5 Regression Analysis

To examine the relationship between dependent and independent variables of the study, regression analysis was employed. Multiple linear regression analysis was used to determine the relation between public procurement performance and the four independent variables; IFMIS control systems, online tendering, automated planning and automated supplier engagement. The results are indicated in table 4.9 below:

Table 4.9: Regression Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.738(^a)</td>
<td>0.545</td>
<td>0.513</td>
<td>0.21207</td>
</tr>
</tbody>
</table>

The coefficient of determination $R^2$, was 0.545 explaining the variation in the influence of IFMIS on public procurement performance. This indicates that the independent variables contribute 54.5% to public procurement performance. Other factors that were not included in the study contributed 45.5% to public procurement performance. Further research therefore should be carried out to determine the other factors that influence public procurement performance.
### Table 4.10: ANOVA Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3.083</td>
<td>4</td>
<td>.771</td>
<td>17.213</td>
<td>.000a</td>
</tr>
<tr>
<td>Residual</td>
<td>2.552</td>
<td>57</td>
<td>.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.634</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Supplier, Planning, IFCS, Tendering

b. Dependent Variable: Performance

ANOVA results indicated that the regression model had a level of significance of 0.000, which helped to conclude that the model was significant. F value at 5% level of significance was 17.213. This indicated that the entire model was significant i.e. there was a significant relationship between IFMIS and Public Procurement Performance.
Table 4.11: Coefficient Results

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.856</td>
<td>0.402</td>
</tr>
<tr>
<td>IFMIS Control System</td>
<td>0.139</td>
<td>0.062</td>
</tr>
<tr>
<td>Online Tendering</td>
<td>0.162</td>
<td>0.079</td>
</tr>
<tr>
<td>Automated Planning</td>
<td>0.211</td>
<td>0.098</td>
</tr>
<tr>
<td>Automated Supplier Engagement</td>
<td>0.292</td>
<td>0.090</td>
</tr>
</tbody>
</table>

Source: Research Data (2017)

Predictors: (Constant), Automated Supplier engagement, Automated Planning, IFMIS Control Systems, Online Tendering

Dependent Variable: Public Procurement Performance

The results of this study indicated that IFMIS control systems, online tendering, automated planning, and automated supplier engagement at 95 per cent level of confidence, had a positive relationship with public procurement performance. Independent coefficients were 0.139, 0.162, 0.211, and 0.292 respectively.

4.5.1 IFMIS Control System and Public Procurement Performance

The first objective aimed at determining the relationship between IFMIS control systems and public procurement performance. The model indicated that IFMIS control systems had a positive relationship with public procurement performance with a beta value of ($\beta =0.139$, p-value $=0.029$). The p-value of 0.029 was significant since this was less than 0.05 (p < 0.05), and
therefore at 5% significance level ($\alpha = 0.05$), enough evidence exists to conclude that IFMIS control systems have a great influence on public procurement performance.

This is as a result of the IFMIS control systems eliminating the excesses of the procurement process, therefore making the process more efficient and tamper proof. The findings of this study are in agreement with those of Kwena (2012), whose study found out that IFMIS aims to provide a high level of safety to its users, the system also easily reports abusers of the system, and all known abuses are easily reported leading to the identification of culprits. The study also revealed that the system provides security for personal data, and that IFMIS is safe to use providing high levels of data integrity for its users. The county government of Kiambu should strengthen their IFMIS control systems to realize more improvement in public procurement performance.

### 4.5.2 Online Tendering and Public Procurement Performance

The second objective investigated the relationship between online tendering and public procurement performance. The model indicated that online tendering is significantly related to public procurement performance with a beta value ($\beta = 0.162$, p-value = 0.046). This p-value of 0.046 at a significance level of 5% ($\alpha = 0.05$) is statistically significant, indicating a positive relationship between online tendering and public procurement performance.

Therefore there was sufficient evidence to conclude that online tendering had influence in determining public procurement performance. This is attributable to confidence in the procurement process, owing to the fact that the tendering process is now automated implying that majority of the tenders are awarded to qualified suppliers.
The findings were similar to those of Rotich et al (2015), who found out that online tendering reduced the tender cycle by improving the choice of suppliers and stating in advance the specifications of tender performance, and reducing the costs associated with tendering process. Kiambu county government should therefore work towards ensuring that online tendering bears more fruit.

4.5.3 Automated Planning and Public Procurement Performance

The third objective aimed at establishing whether there was a relationship between automated planning and public procurement performance. From the model, automated planning is seen to significantly influence public procurement performance with a beta value of ($\beta = 0.211$, p-value = 0.036). The p-value at 5% significance level was less than 0.05, which demonstrated a positive relationship between automated planning and public procurement performance. Therefore there was sufficient evidence to conclude that automated planning influenced public procurement performance. This can be attributed to improvements in procurement plans, more so through automation and thereby reducing uncoordinated procurement activities.

The results of this study concur with the findings of Brahim et al (2014), who found out that the objective of procurement planning is to help in the avoidance of haphazard procurement, thus making the government’s market place more attractive and transparent to the suppliers as well as service providers. The county government of Kiambu therefore should improve its procurement plans, since this will greatly influence public procurement to desired performance.
4.5.4 Automated Supplier Engagement and Public Procurement Performance

The fourth objective of the study investigated the relationship between automated supplier engagement and public procurement performance. Interpreting the observed correlations, it was observed that public procurement performance is more influenced by automated supplier engagement with a beta value of ($\beta = 0.292$, $p$-value =0.002). The $p$-value was lower than 0.05 at 5% level of significance and was therefore significant, and that there was a positive relationship between automated supplier engagement and public procurement performance. This therefore was reason enough to conclude that automated supplier engagement influenced public procurement performance.

This implies that the IFMIS provides for better and efficient methods of engaging the suppliers and also helps to foster these relationships, making the county government procurement attractive to the suppliers. The findings are in agreement with the findings of Mandiyambira (2012) who found out that long-term relationships with several suppliers was the most effective strategy of managing supplier relationships for both long-term and short-term contracts and for complex products. The county government of Kiambu therefore ought to improve on automated supplier engagement so as to realize high public procurement performance. Akenroye et al (2012) found out that there is need to engage suppliers in performance review, training and capacity development programmes necessary to support suppliers.

These study results indicated that at 5% level of significance, all the coefficients were statistically significant, which was enough evidence to conclude that there was a positive
relationship between public procurement performance and all the independent variables; IFMIS control systems, online tendering, automated planning, and automated supplier engagement.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary to the major findings of the study and the conclusions reached, as well as recommendations based on the objectives of the study. Also outlined are the restrictions of the study and recommended research areas.

The general objective of this study was to investigate the influence of IFMIS on Public Procurement Performance in Kiambu County Government. More specifically the study intended to; determine the influence of IFMIS control systems on Public Procurement Performance in Kiambu County Government, investigate the influence of online tendering on Public Procurement Performance in Kiambu County Government, establish the influence of automated planning on public procurement performance in Kiambu County Government, determine the influence of automated supplier engagement on public procurement performance in Kiambu County Government.

Out of the eighty respondents that were targeted by the study, sixty two responded by correctly answering questions in the questionnaires, and also returned the questionnaires for analysis. This represents a response rate of 78%.

5.2 Summary of the findings

5.2.1 IFMIS Control Systems on Public Procurement Performance

On determining the influence of IFMIS control systems on public procurement performance, the findings of the study indicated that use of IFMIS has resulted to control of expenditure in the use of public resources had the highest rating, followed by IFMIS control systems have enhanced
confidence with the procurement process, then followed by IFMIS use has helped to expedite reports and data transmission, IFMIS exposes corrupt officials in the procurement process, IFMIS helps restrict disclosure of sensitive information to unauthorized persons. IFMIS use to monitor procurement process increases the risk of detection and deters corruption had the lowest rating. Majority of IFMIS control system factors were above the aggregate mean.

The results of the study also confirmed that there was a strong positive relationship between IFMIS control system factors and public procurement performance. This was evidenced by a beta value, and p-value of ($\beta =0.139$, $p$-value =0.029). This therefore indicates that IFMIS control systems had a significant effect on public procurement performance, and there was enough evidence to support this.

5.2.2 Online Tendering on Public Procurement Performance

The study findings on the influence of online tendering on Public Procurement Performance was to a moderate extent as indicated by the factors; that online tendering was faster and more efficient than traditional purchasing cycle, e-tendering promotes good procurement practices resulting to a competitive advantage, online tender portal acts as a database for tender advertisement and contract award, therefore improve access to tenders by county governments, online tendering also raises transparency of the procurement process, and adoption of e-procurement promotes supplier engagement. The results therefore guide the conclusion that online tendering and public procurement performance had a significant relationship. This was ascertained by a beta value of ($\beta =0.162$, $p$-value = 0.046). This $p$-value of 0.046 at a significance level of 5% ($\alpha =0.05$) is statistically significant.
5.2.3 Automated Planning on Public Procurement Performance

The study sought to determine the influence of automated planning on public procurement performance. The results indicated that automated planning had consistent mean above the overall mean of the variables. This was measured through; automated planning helping to reduce haphazard procurement, automated planning helping to identify suppliers, and procurement cost reduction. Automated planning reducing procurement delays received the lowest rating. The study therefore implied that there was a positive relationship between automated planning and public procurement performance. This was guided by a beta value of ($\beta = 0.211$, p-value = 0.036). The p-value at 5% significance level was less than 0.05, which demonstrated a positive relationship between automated planning and public procurement performance.

5.2.4 Automated Supplier Engagement on Public Procurement Performance

The study evaluated the influence of automated supplier engagement on public procurement performance. Automated supplier engagement was based on improving transparency, managing relationships for both long-term and short-term contracts, involvement of supplier in training and capacity development, creating and maintaining contacts with suppliers and efficiency of acquisition of goods and services. The findings of the study indicated that supplier engagement, creating and maintaining supplier contracts, involvement of suppliers in training and capacity development, managing supplier relationship, and improving transparency had been achieved moderately. A significant relationship was revealed among the four independent variables and the dependent variable. This was evidenced by a beta value of ($\beta = 0.292$, p-value =0.002). The p-value was lower than 0.05 at 5% level of significance and
was therefore significant, and that there was a positive relationship between automated supplier engagement and public procurement performance.

5.3 Conclusion

The conclusions of the study were that IFMIS control systems positively relates with public procurement performance. This was indicated by both descriptive and regression analysis, whereby IFMIS control Systems impact public procurement performance to a moderate extent. IFMIS control systems also demonstrated a positive relationship with public procurement performance.

Further it was put to bed that online tendering demonstrated a significant relationship with public procurement performance. Online tendering had a moderate impact on public procurement performance, as demonstrated by descriptive statistics. The regression analysis model indicated that online tendering is significantly related to public procurement performance.

It was also consummated that automated planning significantly relates with public procurement performance. This was demonstrated by the fact that automated planning was seen to be highly effective as pointed out by descriptive statistics. Regression analysis also confirmed that automated planning was significantly related to public procurement performance.

Automated supplier engagement also relates with public procurement performance. Descriptive statistics indicated that automated supplier engagement had a great impact on public procurement performance. Regression analysis also confirmed that public procurement performance is significantly related to automated supplier engagement. These study results therefore help to conclude that all the independent variables positively relate with public
procurement performance. Thus a change in either IFMIS control systems, online tendering, automated planning and automated supplier engagement would significantly affect public procurement performance.

5.4 Contribution of the study to knowledge

This study investigated influence of IFMIS on public procurement performance in the county government of Kiambu in Kenya. Majority of the empirical studies reviewed on the performance of the public sector following the implementation of IFMIS in this sector. There was minimal focus on devolved county governments, following the deployment of IFMIS. It is therefore important that more research is done to investigate the influence of IFMIS in regards to other areas where its application has taken shape. This study therefore adds to the existing body of empirical literature that other researchers will find resourceful in their research work. The study also adds to theoretical literature since it supports the suggestions of both Diffusion of Innovation and Information Systems Success theories in bringing on board computer information systems to improve the procurement process in county governments.

5.5 Policy recommendations

Based on the variables of the study; IFMIS control systems, online tendering, automated planning and automated supplier engagement, the findings of this study are beneficial to a number of stakeholders if put to use. This study recommends that county governments should put policies flexible enough to handle technological changes. Policies to strengthen the IFMIS platform should be put in place to ensure the systems control mechanisms are safeguarded. The county governments should also come up with strong password policies to ensure that access to
this system is only granted to authorized personnel. The study also recommends that county have the responsibility of strengthening online platforms, so as to enhance effectiveness and efficiency in all activities of the counties.

5.6 Limitations of the study
This research was investigative in nature causing respondents to fear that they would be involved negatively, and that the information they provided was sensitive. This sparked an initial resistance and lack of cooperation. To counter this fear, the researcher clarified that the aim of the study was to obtain data for academic purposes only, and that the data they provided was to have a high level of confidentiality. The study involved departments as well as hospitals within vast geographical region, and to this end proper planning to cover all the departments was essential. Several respondents forgot to fill their questionnaires, and this prompted the researcher to take a personal initiative of visiting their offices to remind them to fill the questionnaires. IFMIS is considered a sensitive area and this limited the study, but through determination and patience of the researcher, this limitation was subverted.

5.7 Suggestions for Further Research
This study only considered the questionnaire as the main tool of data analysis, other methods such as interviews can be employed in the collection of data so as to facilitate counterchecking of the information provided. The study only focussed on Kiambu county government, and should therefore be extended to include other counties, as well as other jurisdictions where there is devolved governance, and use of IFMIS. Future research work should focus on other factors that affect public procurement performance other than the four factors investigated in
this study. Future studies should also investigate the negative impact of IFMIS on public procurement performance. Future repetitions to this study should consider county governments’ willingness to implement changes and policies that will strengthen IFMIS. This study also recommends further research on public procurement in the private sector in Kenya.
REFERENCES


Chemoiywo, P. K. (2014). Public Procurement Procedures and Supply Chain Performance in


82


Rotich, G., Benard, M., & Waruguru, E. (2015). Relationship Between E-Tendering and


APPENDICES

APPENDIX 1: QUESTIONNAIRE

This questionnaire seeks to obtain data that will be helpful in studying integrated financial management information system and its influence on public procurement performance in Kiambu County Government. Kindly provide information candidly and honestly as possible. All the information provided will be treated with a high level of confidentiality, and will only be used for academic purposes only. Provide your answers on the blank spaces provided, or by crossing the relevant box. Do indicate your name anywhere on the questionnaire.

Section A: General Information

1. What is your Gender? (tick appropriately in the space provided)

   Female ( )     Male ( )

2. Indicate your age category? (tick in the space provided)

   Below 20 years [ ]  21-30 years [ ]  31-40 years  41-50 years

   Over 50 years [ ]

3. Please indicate your highest education level

   Post Graduate [ ]   Graduate [ ]   Diploma [ ]   Certificate [ ]

4. For how long have you been with the County Government of Kiambu?

   Less than one year [ ]  2-5 years [ ]

   In which department? .................................................................
5. Indicate which among the following positions best describe you.

   Management staff [ ]  Supervisory Staff [ ]

   Departmental Staff [ ] Other (Please Specify) ............................

SECTION B: IFMIS CONTROL SYSTEMS

6. 

   a) Kindly indicate to your level of acceptance to the following statements in regards to IFMIS control systems in Kiambu County Government. A rating of 1-5 on the likert scale has been provided; where: 5 = Great extent, 4 = Moderate extent, 3 = Neutral, 2 = Low extent, 1 = Very low extent

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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</thead>
<tbody>
<tr>
<td>IFMIS use has resulted to control of expenditure in the use of public resources</td>
<td></td>
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<tr>
<td>Use of IFMIS has helped to restrict the disclosure of sensitive information to unauthorized individuals</td>
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<tr>
<td>Use of IFMIS to monitor the procurement process has increased risk detection, therefore acting as a deterrent to corruption</td>
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<tr>
<td>Use of IFMIS has helped to expedite reports and data transmission</td>
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<tr>
<td>IFMIS exposes corrupt officials in the procurement process</td>
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</tbody>
</table>
b) To what extent have IFMIS control systems helped in enhancing confidence with the procurement process?

No Extent [ ]  Small Extent [ ]  Moderate Extent [ ]

Large Extent [ ]  Very Large Extent [ ]

SECTION C: ONLINE TENDERING

7.

a) What is your acceptance level in regards to the following statements in line with online tendering in Kiambu County Government? A rating of 1-5 on the likert scale has been provided; where: 5 = Great extent, 4 = Moderate extent.

3 = Neutral, 2 = Low extent and 1 = very low extent.

<table>
<thead>
<tr>
<th>Statement</th>
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</thead>
<tbody>
<tr>
<td>An online tendering system is faster and more efficient compared to the traditional purchasing cycle</td>
<td></td>
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<tr>
<td>e-tendering promotes good procurement practices resulting to competitive supply and equal treatment of bidders</td>
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<tr>
<td>Online tender portals act as a database for tender advertisement and award of contracts, therefore improving access to county government tenders</td>
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<td></td>
</tr>
<tr>
<td>Online tendering increases transparency of the procurement process, while reducing ordering and handling costs, as well as tendering cycle times</td>
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</tbody>
</table>
Full adoption of E-procurement practices such as e-invoicing, e-requisitioning, e-informing, e-sourcing promotes supplier engagement, therefore eliminating cartels, collusion and bid rigging

b) To what extent has online tendering eliminated irregularities in the award of tenders?

No Extent [ ]  Small Extent [ ]  Moderate Extent [ ]

Large Extent [ ]  Very Large Extent [ ]

8. How do you rate the online tendering in Kiambu County Government?

Excellent [ ]

Very good [ ]

Good [ ]

Poor [ ]

Very poor [ ]

SECTION D: AUTOMATED PLANNING

9.

a) Does Kiambu County Government Use automated procurement Plans

Yes [ ]
No [ ]  

Don’t know [ ]

b) If yes, what is the importance of automated planning in procurement performance?

Very important [ ]

Important [ ]

Undecided [ ]

Not important [ ]

Not important at all [ ]

c) The following statements can be attributed to procurement planning. Indicate the extent to which you agree or disagree with each statement. Use the Likert scale where: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = Strongly agree

<table>
<thead>
<tr>
<th>Statement</th>
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<tbody>
<tr>
<td>Automated planning has helped to reduce haphazard procurement making the county governments markets more attractive to suppliers</td>
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<tr>
<td>Automated plans facilitate the identification and appointment of responsive suppliers</td>
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<tr>
<td>Existence of automated plans reduces dependency on suppliers</td>
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<tr>
<td>Automated planning reduces delays in procurement</td>
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</tbody>
</table>
Automated planning reduces costs involved in the procurement process

Automated planning influences procurement by providing focused and efficient utilization of resources

SECTION E: AUTOMATED SUPPLIER ENGAGEMENT

10.

a) Has Kiambu County Government adopted automated supplier engagement

   Yes [ ]

   No [ ]

   Don’t know [ ]

b) If yes what is the importance of supplier engagement?

   Very important [ ]

   Important [ ]

   Undecided [ ]

   Not important [ ]

   Not important at all [ ]

c) Indicate your level of acceptance to the statements in connection to automated supplier engagement in County Government of Kiambu? A rating of 1-5 on the likert scale has been provided where: 5 = Great extent, 4 = Moderate extent, 3 = Neutral, 2 = Low extent, and 1 = Very low extent.
Automated supplier engagement improves transparency by helping suppliers understand means through which contracts are evaluated and awarded.

Automated supplier management helps in managing supplier relationships for both long-term and short-term contracts.

Automated supplier management facilitates involvement of suppliers in performance review, training and capacity development.

Automated supplier engagement helps to create and maintain contacts with suppliers therefore decreasing procurement costs.

Automated supplier relationship management makes the process of acquisition of goods and services efficient.

**SECTION F: PUBLIC PROCUREMENT PERFORMANCE**

11. How would you rate public procurement performance in Kiambu County Government based on the following? 1 = Very low, 2 = low, 3 = Moderate, 4 = high, 5 = very high

<table>
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<tr>
<th>Statement</th>
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</thead>
<tbody>
<tr>
<td>Transparency of the procurement process</td>
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<tr>
<td>Decreased lead-times in delivery of procured goods</td>
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</tr>
<tr>
<td>Accountability in the procurement process</td>
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<tr>
<td>Satisfaction of the stakeholders in procurement</td>
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<td>-----------------------------------------------</td>
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<tr>
<td>Compliance with procurement rules and regulations</td>
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</tbody>
</table>

12. How would you rate the overall public procurement performance in Kiambu County Government?

- Very high [ ]
- High [ ]
- Moderate [ ]
- Low [ ]
- Very low [ ]

13. In your opinion, what challenges do you face in public procurement in Kiambu County Government?

………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

14. What recommendations would you make to enhance the performance of public procurement in Kiambu County Government?

………………………………………………………………………………………………………………
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

THANK YOU FOR YOUR RESPONSES!
APPENDIX 2: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:  
MR. MWANGI GEORGE MUGWE  
of KENYATTA UNIVERSITY, 6-1001  
JUJA, has been permitted to conduct research in Kiambu County  
on the topic: INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM  
AND ITS INFLUENCE ON PUBLIC PROCUREMENT PERFORMANCE IN KIAMBU COUNTY GOVERNMENT, KENYA  
for the period ending:  
18th July, 2018  

Permit No: NACOSTI/P/17/47270/18196  
Date of Issue: 18th July, 2017  
Fee Received: Ksh 1000

Applicant's Signature

Director General  
National Commission for Science, Technology & Innovation
APPENDIX 3: RESEARCH AUTHORIZATION LETTER NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 221349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

Ref: No. NACOSTI/P/17/47270/18196

Date: 18th July, 2017

Mwangi George Mugwe
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Integrated Financial Management Information System and its influence on public procurement performance in Kiambu County Government, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Kiambu County for the period ending 18th July, 2018.

You are advised to report to the County Commissioner and the County Director of Education, Kiambu County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.
APPENDIX 4: RESEARCH AUTHORIZATION LETTER KENYATTA UNIVERSITY

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke
P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: D53/29587/2014

DATE: 28th June, 2017

Director General,
National Commission for Science, Technology and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR GEORGE MUGWE MWANGI — REG. NO. D53/29587/2014

I write to introduce Mr. George Mugwe Mwangi who is a Postgraduate Student of this University. He is registered for M.B.A degree programme in the Department of Management Science.


Any assistance given will be highly appreciated.

Yours faithfully,

MRS. LUCY N. MBAAKI
FOR: DEAN, GRADUATE SCHOOL

28 JUN 2017

GK/awm