INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM AND OPERATIONAL PERFORMANCE OF KENYA RURAL ROADS AUTHORITY

BY

EDMUND A. TOLLE

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MASTER OF BUSINESS ADMINISTRATION (MBA) DEGREE, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

OCTOBER, 2016

DECLARATION

I, the undersigned, declare that this research project is my original work and has not been submitted to any other college, institution or university other than The University of Nairobi for examination.

Signed: _____ **Date: _____**

EDMUND A. TOLLE

REG. NO.: D61/64371/2013

This research project has been presented for examination with our approval as the appointed university supervisors.

Signed: _____ **Date: _____**

Angela Kaguara

Lecturer

Department of Management Science, School of Business

University of Nairobi

TABLE OF CONTENTS

DECLARATION ..... **ii**

LIST OF FIGURES ..... **vi**

LIST OF TABLE ..... **vii**

ABBREVIATIONS AND ACRONYMS ..... **viii**

ABSTRACT ..... **ix**

CHAPTER ONE: INTRODUCTION **1**

1.1 Background of the Study 1

1.1.1 Integrated Financial Management Information System (IFMIS) 2

1.1.2 Operational Performance 3

1.1.3 IFMIS and Operational Performance 5

1.1.4 Kenya Rural Roads Authority (KeRRA) 7

1.2 Research Problem 8

1.3 Research Objectives 10

1.4 Value of the Study 11

CHAPTER TWO: LITERATURE REVIEW **12**

2.1 Introduction 12

2.2. Theories Underlying the Study 12

2.2.1 Technology Acceptance Model 12

2.2.2 Task-Technology Fit Theory 13

2.3 Operations Performance Measurement 14

2.4 Challenges of Implementing an IFMIS 16

2.5 Empirical Literature Review 17

2.6 Summary of Literature Review and Knowledge Gaps.....19

2.7 Conceptual Framework 20

CHAPTER THREE: RESEARCH METHODOLOGY 21

3.1 Introduction 21

3.2 Research Design.....21

3.3 Population and Sampling 21

3.4 Data Collection.....22

3.5 Data Analysis 23

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION 24

4.1 Introduction 24

4.2 Response Rate 24

4.3 General Information 25

4.3.1 Level of Education.....25

4.3.2 Years of Service at KeRRA.....25

4.3.3 Knowledge on IFMIS Practices and Operations 26

4.3.4 Duration of IFMIS System Operation 27

4.3.5 Frequency of Attendance of Trainings on Operation of IFMIS Application 28

4.3.6 Implementation of IFMIS application 29

4.4 IFMIS Practices.....29

4.4.1 The Application of IFMIS in Stock and Monitoring of Procurement Process..30

4.4.2 Usage of IFMIS to Enhance Transparency of Inter-governmental Fiscal Relations 31

4.4.3 Application of IFMIS to Enhance Public Access to Key Fiscal Information ...32

4.5 Operational Performance....33
4.6 Regression Analysis....34
4.6.1 Goodness of Fit of the Model....35
4.6.2 ANOVA....35
4.6.3 Coefficients....36
4.7 Challenges to IFMIS....38
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS...40
5.1 Introduction....40
5.2 Summary of the Study Findings....40
5.3 Conclusion....42
5.4 Recommendations....43
5.5 Limitations of the Study....43
5.6 Suggestion for further Study....43
REFERENCES....45
APPENDICES....53
Appendix I: Introductory Letter....**53**
Appendix II: Questionnaires....**54**

LIST OF FIGURES

Figure 2.1: Task-Technology Fit Theory.....14

Figure 2.2 Conceptual framework 20

LIST OF TABLE

Table 4.1 Response Rate 24

Table 4.2 Level of Education 25

Table 4.3 Years of Service at KeRRA 26

Table 4.4 Knowledge on IFMIS Practices and Operations 27

Table 4.5 Duration of IFMIS System Operation 27

Table 4.6 Trainings on Operation of IFMIS Application 28

Table 4.7 Implementation of IFMIS application 29

Table 4.8 Application of IFMIS in Stock and Monitoring of Procurement Process ... 30

Table 4.9 Usage of IFMIS to Enhance Transparency of Inter-governmental Fiscal Relations 31

Table 4.10 Application of IFMIS to Enhance Public Access to Key Fiscal Information 33

Table 4.11 Operational Performance Indicators 34

Table 4.12 Model Summary 35

Table 4.13 ANOVA 36

Table 4.14 Coefficients 37

Table 4.15 Challenges to IFMIS 39

ABBREVIATIONS AND ACRONYMS

DfID	Department for International Development
DI	Diffusion of Innovation
GDP	Gross Domestic Product
G-pay	Government Payments Solution
ICT	Information and Communication Technology
IFMS	Integrated Financial Management Information System
IPPD	Integrated Personnel Payroll Data
IT	Information Technology
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KURA	Kenya Urban Roads Authority
LMs	Line Ministries
LPO	Local Purchase Order
OECD	Organization for Economic Co-operation and Development
OP	Operational performance
PFM	Public Financial Management
SCM	Supply Chain Management
SPSS	Statistical Package for Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
TTF	Task-Technology Fit
USAID	United States Agency for International Development
WTO	World Trade Organization

ABSTRACT

Procurement in public sector plays a vital role in the economy of the third world countries and was estimated to account for 9-13 percent of the gross domestic product. However, much consideration should be focused on the procurement since many of its resources are poorly managed among different countries. Over the past years, the government of Kenya has embarked on various public financial management reforms with the goal of enhancing liability and transparency as well as support in the fiscal discipline achievements, efficiency and strategic allocation as well as funds utilization, monetary value and profitability in the public funds usage. Integrated financial management information system was introduced to assist the government in effectively leveraging old and new technology to improve the pace of reforms and management of cash and this became a vital target for the budgets of countries agenda to reform which is normally considered as a prerequisite for management effectiveness in achieving resources of budgets. However, despite a number of researches having reported optimistic findings with performance improvement by the financial systems found in public sector, there are still hurdles in the major economic areas and there have also been drawbacks reported by most scholars in the system's full functionality. The major goal of this research was to scrutinize the role of IFMIS on operational performance of Kenya Rural Roads Authority. Technology acceptance model together with task-technology fit theory was the foundation of the study. The study adopted case research design. The target population of this study was the departments of the KeRRA set-up. A census survey was followed and data collection was done through a questionnaire. The study reported a response rate of 70 percent. The study relied on descriptive statistics and inferential statistics in the analysis of the collected data. The study discovered that stock and monitoring, transparency and fiscal information have strong significant influence in determining operations performance and that the major challenge facing the implementation of IFMIS system was that some key activities at KeRRA were still being undertaken outside the system. The study therefore recommends that guideline on best practices should be embraced to ensure full implementation and functioning of IFMIS system.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

According to report by World Trade Organization (WTO), procurement in public sector plays a vital role in the economy of the third world countries and was estimated to account for 9-13 percent of the gross domestic product. However, much consideration should be focused on the procurement since many of its resources are poorly managed among different countries (Wittig, 2013). The government procurement value estimated by Organization for Economic Co-operation and Development (OECD) around the globe was US$ 2,000 billion which accounts to 7 percent of global GDP and 30 percent of the world's merchantable business (Agaba & Shipman, 2007). In many of third world countries, procurement in the public sector usual takes biggest share in the domestic market (Juma, 2010). Dorotinsky and Junghun (2003) posit that a good system of procurement is the link between procurement in the private and public sectors. Therefore, government are obliged to provide products, jobs and other services to be able to meet of citizen needs.

Over the past years, the Government of Kenya has embarked on various Public Financial Management (PFM) reforms with the goal of enhancing liability and transparency. The restructurings aimed at the main PFM systems of public procurement, parliamentary oversight, accounting and reporting, payroll and pensions, formulation and implementation of budget, collection of revenue, audits done internally and externally, public guarantees and debt, the macro-fiscal framework as well as cash management (Republic of Kenya, 2015). The main agenda of system of PFM is to help in the realization of financial regulation, efficiency and strategic funds allocation and utilization, monetary value and profitability in the usage of public

funds. It usually requires the authority of procurement in the issuance public tenders in case the procurement value goes beyond an assured brink (Van Weele, 2010). Among the key reforms undertaken by the Kenyan Government, was to come up with the computerized systems. The Integrated Financial Management Information System (IFMS) which was introduced to assist the government in effectively leveraging old and new technology to improve the pace of reforms and management of cash (Gakuu & Nyambura, 2014).

According to Sandberg and Abrahamsson (2010), achievement and sustainability of excellence in operations is much essential in current dynamic environment of economy. Change of customer expectations, pressures to cost, competition as well as other market and industry interruptions altogether cause a remarkable damage on capabilities of operations and performance. Dierickx (2009) observed that excellence in operations is not only required condition but also a future necessity to the thriving company and government. Effectiveness and efficient control of operation performance and improvements of process in order to attain success in performance of various magnitudes such as quality serviced, cost effectiveness, flexibility, reliability and scalability. It might not be a simple way to realize better prices for goods and service but it assists in the process of making decisions that outline trade in private and public institutions.

1.1.1 Integrated Financial Management Information System (IFMIS)

According to Bartel (2009), IFMIS is a system of information which monitors monetary activities and reviews information on finance. Ajayi and Omirin (2007) referred to IFMIS as a strong system of PFM which is an economic development catalyst. Casals (2009) noted that IFMIS is the information and communications

technology (ICT) usage in management of finances in decisions making based of budget management, responsibilities of trustees, and the financial reports preparation. While Diamond and Pokar (2005) defined IFMIS as a system which is computerized and utilized by financial managers in public sector for accounting, controlling, auditing and reporting. PFM restructuring is recognized as key indicator to efficiency in service delivery in the public sector as well as employment and wealth creation (Asselin & Srivastava, 2009).

With focus to realm of governments, IFMIS is particularly a computerized process of PFM which covers from the preparation and implementation of budget to accounts and reporting (Peterson et al, 2008; GOK, 2011; and Semakula & Muwanga, 2012). The IFMIS institutionalization is a vital object for the budgets of countries agenda to reform which is normally considered as a prerequisite for management effectiveness in achieving resources of budgets (Diamond *et al.*, 2005). However, Karanja and Nyambura (2014) established that there is slow progress in stage of execution and this is due to lack of participation and system negligence by the key players such as accountant general, pilot ministries as well as ministry of finance. The need to introduce an IFMIS with accompaniment of commitments that are strong, adequate labour force and resources of finances, internal support and effective agenda for management change is a priority (World Bank, 2014).

1.1.2 Operational Performance

Operational Performance (OP) is the process of aligning units of business in an institution to enhance the combine working in order to attain major business goals (Sudarsana, Sivarami & Mohan, 2015). Schapper, Malta and Diane (2006) noted that the importance of procurement reform in public sector for most upcoming countries is

progressively more valued by global agencies of development, in recognition to the socio-economic costs and limitations in governance of public operations are comprised by an increment in sovereignty threats that brought about by foreign investment representation (Kishor, Sajeev & Callender, 2013). Procurement public contribute in reduction of expenditure and encourage growth of economy an increase in attention to policy.

According to Agaba and Shipman (2007) frameworks of public procurement found in first and third world economies are acknowledged to be typified through unsteady pressure among the expectations of public accountability and transparency, as well as efficient and effective management of resources. Muthoni (2010) alluded that any organization which does not adapt good operational performance practices is disadvantaged given that it will not achieve its goals and objective. Koskey (2010) further states that as much as the government has set up rules and regulations on how procurement should be done in all government institutions the need to have a good managerial good will in order for the effective of the procurement function is more than important for the procurement process in the organization than ever before.

Romi, Konishi, Conrade, Green and Cheng (2013) observed that operational performance is major procurement function since it brings about value addition to clients, identify new products, innovation driven and modern market possibilities institutions. The understanding on the operational performance would help the organization to develop good policies that can ensure that the buying of goods, services and works is done in the best way possible (Bartel, 2006). Public procurement is therefore subjected to different rules which include statutes, ministerial decrees and laws endorsed to safeguard public and donors' interests.

Currently, many flourishing operations of private sector are found to execute improvements in operations in the management of their resource and are therefore harvesting higher rewards throughout accompanied by lower labour cost.

The four key indicators cited to determine performance of operations are: Firstly, improvement of operations – streamlines, simplifies and standardizes. Operational performances are efficient economy's foundation. Inefficiency as well as lack of value addition in activities should be avoided (Kishor, Sajeev & Callender, 2013). Secondly, productivity tracking – what is tracked gets done. This is carried out through different avenues; however, technology advancement has resulted to an automated production being tracked in the current software invention (Bakker & Schaufeli, 2008). Thirdly, engineered standards - a goal is important to all. Standards that are engineered can be created via studies in motion and time as an objectivity instrument to estimate performance of individual. Fourthly, programs on incentive performance - Pay-for-Performance and Rewards, this can be done through different avenues to performance rewards. Incentives promote great level performance. Nature of human being is that they seem to bring out their utmost results. Programs for rewards tend to inspire workers as they feel valued for their work and this leads to high performance (Van Weele, 2010).

1.1.3 IFMIS and Operational Performance

Baily (2008) indicated that through availability of information relevancy, operations and professionals of procurement are managers whose focal point is on activities of strategies like operational performance, negotiations of contract as well as compliance of suppliers. It leads to reduction of cost of operations as it twists the procurement operations to an asset that is essential to an institution. Integrated financial

management information runs on simple platform which enhance improvement of consistency and compatibility of information of finances, reduction of governments ventures in the creation of accounting systems which are expensive (Njonde & Kimanzi, 2014). The ability to interface with existing platforms like Government Payments Solution (G-pay) and Integrated Personnel Payroll Data (IPPD) is among the main activities of an IFMIS.

In Kenyan context, the design experience in pilot and the entire development as well as execution of IFMIS application has lacked satisfaction. In the IFMIS design, the budget execution existence of processes of accountability tend to be programmed to a very high extent with no deliberation as to which is efficient and better way to achieve the expectations (Kinyeki, Mutai & Ngungu, 2006). The Kenyan government is faced with a challenge of hiring new managers. Main issue is capacity of knowhow and locality has been and still poses as a key threat. A review undertaken by the office of the attorney general in Kenya in the process of speeding the system functionality in July 2004, disclosed various challenges in the functioning of the system and its eventuality delays in implementations.

E-procurement IFMIS system is connected to a Master Item with prices which are indicative to used items. This assists in taking precautions on inflations of price of entities concerned with procurement, hence maintaining procurement value and approvals of inbuilt systems in every procurement process level controls, accountability, checks and an increase in effectiveness and maintaining competitive advantage, as well as lower costs of transaction. The design of IFMIS enables the increase of government monitoring of procurement activities handled by major

players, such as youth, women and disabled people (Cornelia, Muhumuza & Basheka, 2010).

Mutui (2014) observed that for any organization to realize incredible rewards related to e-procurement, there in need for collaboration and consultation between governments, suppliers and other stakeholders and the training of over 4000 suppliers on e-procurement is to ensure that the suppliers fully understood that government procurement has gone online and they should not be left behind and to improve operational performance. IFMIS comes in hand to increase the bond between suppliers and government through provision of painless information access, making the bidding process to be simple and ensuring saving of cost on taxpayers' money. Mahmood (2010) stated that in the struggle to implement durable strategies, many governments resolved to going back their procurement annual plans as a potential solver of their problems.

1.1.4 Kenya Rural Roads Authority (KeRRA)

KeRRA is an entity of state with responsibility of offering direction to the building, preservation as well as managing of the roads in the rural areas across Kenya. The authority has the mandate to develop, rehabilitate, and preserve roads in the rural network. This body operates under the Ministry of Transport and Infrastructure (MoT&I). It's one of the parastals that were brought up as a result of Amendments to Roads Act 2007 in which Kenya Urban Roads Authority (KURA) and Kenya National Highways Authority (KeNHA) were also formed in 2009. KeRRA headquarters are in Nairobi, Blueshield Towers, hospital road upperhill area and the Authority is headed by a Director General. It has 47 regional offices in every county within the country and has several departments including maintianence, roads 2000,

structures, survey, human reourecs and administrtion, legal, public relations, Information and Communication Technology (ICT), finance and process of procurement.

Under the National state programs, KeRRA has been carrying out road works activities including the Annuity program where the government started an ambious program of tarmaking 10,000 kms of roads in the country and through Road 2000 program in the Rift valley county (Eight Districts), Coast, Eastern and Nyanza counties. Some of these projects are ongoing, while others are complete. Government of Kenya showed the intention adding the participation of private sector in the infrastructure services provision in order to revitalize the infrastructure nationally. The sector of infrastructure was chosen to benefit on the functions due to quality and importance of infrastructure plays in the development of nation (World Bank, 2014).

1.2 Research Problem

According to Davenport and Brooks (2004), a fully functioning IFMIS does not only assist the governments of third world countries to increase efficiency in management of operations of finances, but also ensures accountability and transparency, thus leads to reduction of political diplomacy which act as a corruption and fraud preventer. There are factors that affect IFMIS implementation these include: ICT readiness, obvious assurance given by pertinent corporations to operational performance reform objectives, sound project design, adequate resources and human resource capacity allocated to the project a phased approach to implementation and project management capability (Cornelia, Muhumuza & Basheka, 2010).

Overally, the key objective of IFMIS procurement module is to enhance accountability, transparency, as well as public expenditure responsiveness. This application is vital in fighting corruption and wasteful spending in the entire procurement process (Ajayi & Omirin, 2007). IFMIS and operational performance have drawn much attention among scholars and researchers (Peterson et al, 2008; and Koskey, 2010). A number of researches reported optimistic findings in performance improvement by the financial systems found in public sector. A study by Bartel (2006) found out that the factors which are normally quoted to contribute to failure of IFMIS system are resistance of institutions to transformation, technology limitation as well as inadequacy capacity of labour force. Gallagher (2007) carried out a study on building fiscal infrastructure in post-conflict societies found out that limited commitment of high level, unsuccessful co-ordination of projects, planning as well as loose project design and they are found cause serious shortcoming in the performance of operations.

A report by OECD provided in the year 2007 on procurement in Kenyan public sector pre-empted immense qualification improvement which should be done through additional of more educated experts and providing training required to assist in the filling of gaps left by professional in the procurement of public sector (Owegi & Aligula, 2006). Nevertheless, this information given in the report lacked professionalization sense which functions via the legislation which is currently in the Supplies Practitioners Management Act, 2007. The existence of the factors that contribute to procurement Kenyan public sector is obviously susceptible to indiscretion given the court cases evidence as well as controversial continuation of infection in procedures of procurement of public projects (Aketch, 2013; Mosoba, 2012).

Despite IFMIS drawing much attention to researchers within the past recent years, there have been drawbacks reported by most of them in the full functioning of the system. Odoyo, Adero and Chumba (2014) observed that IFMIS usage among the public sector is faced with problems of system feature complications, flexibility, security as well as consistency matters that could show significant effect on sourcing processes among organisations. Abass and Bichanga (2014) established main factors which affect implementation strategy of public roads to be processes of procurement which is ineffective. This research therefore contributes to this knowledge gap by investigating the role of IFMIS on performance of operations in the Kenya Rural Roads Authority (KeRRA). This research focused on answering the following questions of research: Is there association between IFMIS and operational performance of KeRRA? What are the challenges facing KeRRA in the implementation of IFMIS?

1.3 Research Objectives

The key study objective was to scrutinize the role of IFMIS on operational performance of KeRRA.

Specific Objectives

The study's specific objectives were as follows:

i. To determine the relationship between IFMIS and operational performance of KeRRA.
ii. To establish the challenges facing KeRRA in the implementation of IFMIS.

1.4 Value of the Study

The findings will help KeRRA employees and other users of the operations and supply chain management in the operational performance identify areas where IFMIS need to be strengthened to improve operations effectiveness and efficiency and organisation management on the level of implementation of IFMIS in supply chain management process.

To national treasury and other public offices as it will provide information on the IFMIS on operational performance in relation to transparency, accountability, efficiency and effectiveness.

To suppliers, training and building capacity on their ability to work with government and providing information on tendering, evaluation, delivery and payment of goods and services rendered.

The finding of this research, will benefit the operations management and supply chain management profession and certified bodies by adding knowledge on operational performance and to future researchers, it is expected that the result of the study will form basis for future researchers in the field of IFMIS, supply chain management and procurement areas.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The research examined the relationship between the application of IFMIS on operational performance at Kenya Rural Roads Authority. This chapter presents the theories on which the study is embedded to, it gives review of literature provided by other scholars who researched on the related topics.

2.2. Theories Underlying the Study

For better understanding of the research, this study will be guided by the following underlying technological theories. These theories will help in understanding the way IFMIS is adopted in Kenya Rural Roads Authority.

2.2.1 Technology Acceptance Model

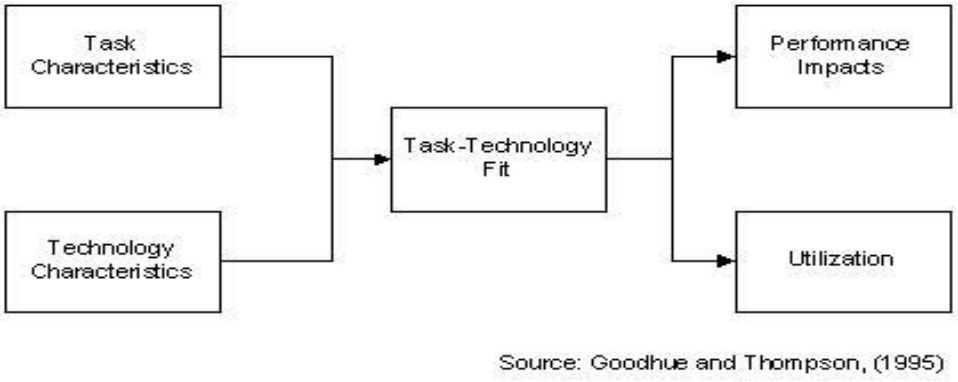
Technology Acceptance Model (TAM) has been widely applied by various scholars in explaining the usage of ICT in various fields (Chyou, 2012; Ramdani and Kawalek, 2008). This theory is derived from the theory of reasoned action (TRA) and it explains how users come to accept and embrace technology. The model suggests that key issues affecting decision of consumers on when and how to use technology newly provided in an organization are always perceived in usefulness. The level of people's believe in the usage of a given scheme affects performance of how they perceive the ease of usage. Thus, one will believe that usage of a given application is supposed to be effortless (Davis, 1989). However, Technology acceptance theory has underwent upgrading to include other factors to help explain and predict the acceptance of new technology apart from using only perceived usefulness and perceived ease of use. TAM has been upgraded by incorporating Ajzen's (1991) Theory of Planned Behavior (TPB) and Roger's (1995) Diffusion of Innovation (DI) to include the subjective norms and perceived behavioural control.

2.2.2 Task-Technology Fit Theory

The theory developed by Goodhue and Thompson (1995) states that the probability of getting positive on performance of individuals is based on IT and that its usage can exceed the IT capabilities in order link up the tasks performed by users. These scholars came up with a task-technology fit measurement which comprised of 8 key aspects: authorization, quality, ease of use/training, locatability, compatibility, systems reliability, production timeliness, as well as users' relationship. All factors are estimated from a range of 2 to 10 based on a likert scale of seven points that ranges from strongly agree to strongly disagree. They discovered the estimate of tasks, alongside the usage as a key determinant of reports of consumers in the improvement of performance of jobs and efficiency attributable to the system usage.

Despite the fact that the operation of this model is analyzed individually, there is an analogous model presented by Zigurs and Buckland (1998) which operates at the group level. From the first assignment, the application of Technology Task Fit theory is based on the information systems of diverse range which is comprised of systems of e-business as well as expansion of various theories linked to output of information system like TAM. This theory estimates provided by Goodhue and Thompson underwent various changes in order to fit the objective of a given research. For the current study the relationship between IFMIS on the entire operational performance will be tested. Since the government uses this system to monitor the public financial management by controlling, accounting, auditing and reporting. This system was tailored to help government and its departments to be able to collect, spend public resources efficiently, manage and in a transparent way, hence improving service delivery which eventually can lead to better performance and productivity.

Figure 2.1: Task-Technology Fit Theory



Source: Goodhue & Thompson (1995)

2.3 Operations Performance Measurement

As observed by Huse and Gabrielsson (2004), the implementation of a strategy must be done as planned improve the general performance of operations successfully, this should followed by abandon of the thought by executives that lower-level managers tend to have similar strategic thinking and its execution of fundamental principles, as well as the necessity. Reforms of governments are based on the perception that procurement in public sector is a tool which is effective in following a varied range of social objectives. Oftenly, debates on policies tend to incline on the expansion of the line of goals instead of assessing the compatible potentiality of the approved objectives.

According to Brennan (2007) measuring performance of operations in the procurement department is key to an increasing vital function of supply chain in an economic downturn. Raw material together with service cost reduction enable organizations to have a competitive advantage on the prices of end goods to thrive well in competitive business world. The key challenge is that the solution has to be gotten before going to issue of compatibility (Cornelia, Muhumuza, & Basheka, 2010).

In many operations undetaken by governments, IFMIS application can mean the automation of financial management public processes whaich range from preparation of budget, accounting execution to giving reports (Lianzuala & Khawlhring 2008). Diamond and Khemani (2006) and Chene (2009), a well-designed IFMIS application can serve as a tool of management which has a provision to a wide margin of financial and non-financial information.

Integrated financial management information system involves public expenditure autamation processes which include formulation of budget, execution budget, as well as accounts done with aid of a fully financial management integrated system in spending agencies and line ministries (LMs) (Department for International Development (DfID), 2003). Such system observes effectiveness in the control which is based on accountability and transparency. This application also can provide instant information on finances which consumers utilize in budgetformulation, resources management as well as effective project monitoring. According to the United States Agency for International Development (USAID) practical guide (2008), a good financial system together with centralized treasury operations adoption can assist governments of third world countries to control their finances effectively.

The success of a project implementation is characterized by many factors. "A project is generally considered to be successfully implemented if it: comes in on-schedule (time criterion), comes in on-budget (monetary criterion), achieves basically all goals originally set for it (effectiveness criterion) and it is accepted and used by the clients for whom the project is intended (client satisfaction criterion)" (Pinto & Slevin, 1987). Alternatively, implementation is assumed to be a success if it achieves a large fraction of its potential benefits for example personnel reductions or a decrease in the cost of information technology.

2.4 Challenges of Implementing an IFMIS

Re-Engineering Strategic Plan of IFMIS (2011-2013) identified parallel running of the system where despite the applications intention being computerized and flawlessly integrated in the key functions of business, most of the major functions are being done outside the application. The second challenge with budget released by exchequer where when funds id released then it facilitates the commencement of IFMIS following process of releasing of manual funds is completed. Consequently, when the supply function of the budget is eternally to IFMIS there is a danger of credit grant and release of exchequer being effected online using the Oracle Dossiers. Another challenge identified is that of approvals of manual payment where the system captures all transactions for payment processing and compliance. There being systems that are parallel for approval of payment.

In addition, there is a challenge of payment vouchers being manual executed in that, in the process of receiving invoices, there is preparation of payment vouchers which are backed by local purchase orders (LPOs), evidence of delivery, requisitions and thereafter to be approved manually. After the process of approval, they are fed in an IFMIS application to effect the payment. Another challenge is on orders of purchase where purchase orders which are manual are given to suppliers and thereafter 'dead data' entered in the IFMIS yet the system produces purchase orders. The sixth challenge is of errors where the manual capture of invoices and local purchase order in the systems certainly gives errors which might compromise the integrity of data on the IFMIS.

The accomplishment of the adoptions of the e-government is a mixed bag. Alshehri and Drew (2010) observed that while many governing bodies globally has adopted e-government to aid in cost reduction, services improvement, time saving as well as an increase in efficiency and effectiveness in the public procurement. However, the e-

government adoption is faced with a number of barriers and challenges which are cultural, technological, social, and organizational issues that need to be put into consideration and be carefully treated in the adoption of e-government. Further, Njuru (2011) then identified common hurdles in execution which included new technology introduction is done prior to uncertainties, fear, resistance to organizational change, enthusiasm, talents and skills sets, limited global benchmarking of ICT, cyber-attacks and security issues, competences, resistance to change and lack of skills as well as expertise.

2.5 Empirical Literature Review

Karanja and Nyambura (2014) investigated aspects that influence IFMIS implementation in the Ministries of Kenyan government. The focus of the study was on the office of Ministry of Finance located in Meru County. The scope of the study was all the employees in management. The research used inferential estimation in the analysis of the data collected and SPSS was used to generate the output that gave coefficients of correlation between the variables under study. The study highlighted funding inadequacy as the key hurdle to IFMIS implementation. This research established that the implementation cost was a barrier.

Odoyo, Adero and Chumba (2014) investigated the effect of IFMIS on management of cash practices among the civil service. Contingency theory was the basis of their study. Research design they used was descriptive survey. The focus of their research was on a sample of 70 staff members at the Eldoret West District treasury. The findings of the study indicated that IFMIS flexibility and reliability had a positive effect on management of cash. Their study further discovered that a system which is reliable should be timely, accurate, consistent and complete in information collection and the IFMIS supporting infrastructure should be protected from corruption, destruction, breach of confidentiality, and unauthorized access to ensure efficiency in

management of cash. The design of local IFMIS which is flexible reduces the possibilities of cash management failure.

Njonde and Kimanzi (2014) analysed the IFMIS effectiveness and public sector performance in Kenya. Management of public finance is being scrutinized by community of donor and public in accountability enhancement among the expenditures of government public service delivery improvement. Their research revealed that there was effectiveness in financial reporting through IFMIS, internal controls, budgeting and government projects implementation. However, there were barriers in internal controls. The research further discovered a positive relationship between IFMIS effectiveness and management of public finances.

Saida and Okibo (2014) established that assessed the procurement process effect on implementation of strategy in corporations of public road in Kenya. Descriptive survey research design was used with a population sample 150 workers who were gotten from Kenya Urban Roads Authority (KURA) National Highways Authority (KeNHA) and Kenya Rural Roads Authority (KeRRA). Their research discovered that there was a failure in implementation strategies among corporations of public roads. The conclusion of the study was that key aspect that affects implementation strategy in public road corporations was ineffectiveness in procurement processes.

2.6 Summary of Literature Review and Knowledge Gaps

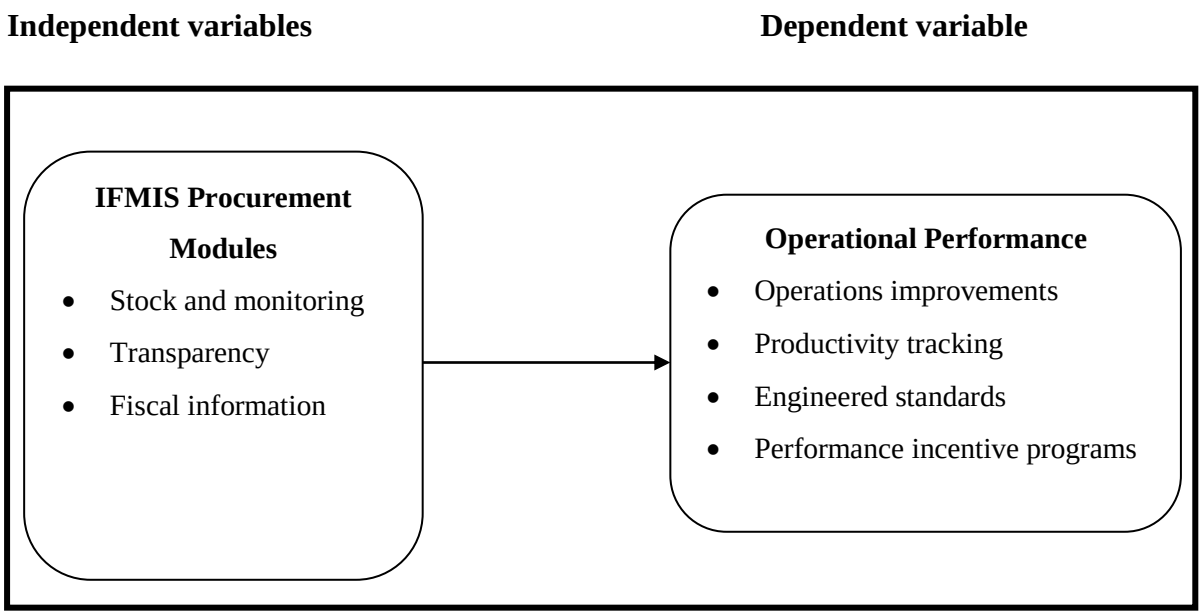
Scholars	Study	Major Findings	Knowledge Gap
Kipngeno and Okello (2015)	Use of e-procurement on performance function of county government.	E-procurement is positively related with operations performance of SCM.	Integration of Enterprises Resource Performance system in operational performance
Odoyo, Adero and Chumba (2014)	Effects on IFMIS on cash management in the public service	Reliability of IFMIS system is one which is accurate, timely and complete.	Challenges in developing IFMIS infrastructure, destruction and unauthorised access.
Ndegwa and Amuhaya (2014)	Factors affecting the adoption of global sourcing	The was significant influence of fluctuation, complex logistics, tariff and non tariffs barriers	Challenges in IFMIS infrastructure development.
Alsheri and Drew (2010)	Success of e-government adoption.	More governments around the world are introducing e-government to reduce cost, improve services	Challenges in culture change, organisation and social issues.
Rodin-Brown (2008)	Roadmap to implementation of sucessful IFMIS	IFMIS systems are complicated, expensive and difficult to manage.	IFMIS planning, resources, budgeting and management capacity.
Karanja and Nyambura (2014)	Aspects that influence IFMIS implementation in government ministries of Kenya.	Inadequate funding and the cost of implementation was among challenge was a challenge in implementation of IFMIS.	Challenges in implementation process of workable IFMIS.
Abass and Okibo (2014)	Assessment the procurement process and its effect on implementation strategy in road public corporations as per the Vision 2030 in Kenya	Failure in implementation of strategic plans in corporations of public road.	The study was that key aspect that affects implementation strategy in public road corporations was ineffectiveness in procurement processes.

Source: Author (2016)

2.7 Conceptual Framework

The study investigated how IFMIS related to operational performance of KeRRA. The model of concept illustrated in Figure 2.3 shows the linkage of independent variables and dependent variable. The independent variables used by this research were: the use of IFMIS in stock and monitoring of expenditure payments; to enhance transparency of departments' economic relations; and to supervision of cumulative fiscal information from other public entities. While the dependent variable namely operational performance, were measured in terms of operations improvements, productivity tracking, engineered standards, and through performance incentive programs.

Figure 2.2 Conceptual framework



Source: Author, 2016

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the study research design and methodological procedures followed during the study process. The chapter contains research design, target population, sampling design, research instruments, and data collection procedures and data analysis.

3.2 Research Design

The study adopted a case study research design. The application of this technique helps in narrowing down a wide study into a topic which is simple and researchable. As much as it might not be able to give answers to questions being used completely, it assists in giving indications as well as allowance for additional explanation and necessitates the creation of hypotheses based on subject under study (Greenbank, 2003). This design of research can be vital in estimation of the applicability of scientific models and theories in the real world (Kothari, 2004). Therefore, it was used in this study to help in establishing the relationship between IFMIS and operational performance at KeRRA.

3.3 Population and Sampling

The population which was targeted by the study was the departments of the KeRRA set-up. A census survey was conducted on the 10 departments of KeRRA namely Maintenance, Roads 2000, Finance, Procurement, Legal, Survey, ICT, Structures, HR & administration, and Public relations at the headquarters.

Respondents (Departments)	Middle Level Management	Top Level Management
Maintenance	10	5
Roads 2000	6	3
Finance	7	3
Procurement	7	2
Legal	3	2
Survey	5	2
ICT	4	2
Structures	9	3
HR& administration	5	2
Public relations	4	2
Total	**60**	**26**

The research focused on 5 respondents from each department totalling to 50 respondents. All respondents were from middle level management and top management employees.

3.4 Data Collection

Primary data was collected by use of structured questionnaires, designed to gather information regarding the issues being addressed in the study. Questionnaire is the most appropriate tool as it enables one to gather large amounts of data over a very short period of time from the primary source (Mugenda & Mugenda, 2003). The employees were given one week to fill the questionnaire after which the researcher picked them.

3.5 Data Analysis

Descriptive statistics was applied in percentage computation, mean and standard deviation to show the outcomes. The study further carried out an inferential estimation to find out the linkage of independent to dependent variable under investigation. This was done through regression analysis. The Statistical Package for Social Sciences (SPSS) program was used to generate the data output which was interpreted. The research assumed the following regression equation:

$$OP = \alpha + \beta_1 SM_1 + \beta_2 TR_2 + \beta_3 FI_3 + \varepsilon$$

Where: OP = Operational Performance

α = Constant

SM_1 = Stock and monitoring

TR_2 = Transparency

FI_3 = Fiscal information

β_1, β_2 and β_3 are regression coefficients of the variables.

ε = Error term.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides the outcomes of the findings of the study on integrated financial management information system and operational performance of Kenya rural roads authority. The findings of this study are presented in form of tables. The chapter presents descriptive and inferential analyses as outlined in chapter three.

4.2 Response Rate

The study targeted to carry out survey on 50 respondents, but only 35 out of the total targeted number were able to fill and return the questionnaire. The response rate accounted to 70 percent. Nevertheless, among the 15 questionnaires some were either not filled properly or were not returned. Thus, were not used in this analysis as shown in table 4.1. This response rate was considered acceptable and satisfactory to make conclusions for the study as advocated by Mugenda & Mugenda (2003) that a response rate of above 70 percent is excellent.

Table 4.1 Response Rate

Response Rate	**Frequency**	**Percent**
Responded	35	70
Not Responded	15	30
Total	**50**	**100**

Source: Research data (2016)

4.3 General Information

4.3.1 Level of Education

The study required the respondents to indicate their level of education and the results are as shown in table 4.2. Most of the respondents (42.8 percent) had attained undergraduate degree, 28.6 percent of the respondents had postgraduate degree, 14.3 percent had higher diploma while 14.3 percent had diploma. However, there was none in the categories of primary and secondary level. This is an indication that the respondents had achieved requisite education level to handle their respective duties at KeRRA and therefore, were well informed on the topic being researched. Thus, were able to give relevant information for this study.

Table 4.2 Level of Education

Level of Education	Frequency	Percent
Diploma	5	14.3
Higher Diploma	5	14.3
Undergraduate	15	42.8
Postgraduate	10	28.6
Total	**35**	**100**

Source: Research data (2016)

4.3.2 Years of Service at KeRRA

In determination of the time-span of time that the respondents had worked at KeRRA, outputs are shown in Table 4.3. 42.8 percent had worked with KeRRA for a period of 4 – 5 years, 28.6 percent had worked in the firm for 1 – 3 years, while 28.6 percent had worked for 6 years and above. This result indicates that most of the respondents

had worked long enough at KeRRA and therefore were able to understand how it works and its operations. Thus, an indication that the respondents had adequate working experience in their respective organizations; and therefore, possessing the necessary knowledge and information which is considered valuable for this study.

Table 4.3 Years of Service at KeRRA

Work Experience	Frequency	Percent
1-3 years	10	28.6
4-5 years	15	42.8
6 years and above	5	28.6
Total	**35**	**100**

Source: Research data (2016)

4.3.3 Knowledge on IFMIS Practices and Operations

The study sought to ascertain whether the respondents had knowledge on IFMIS practices and operations. From the outcomes shown in table 4.4, majority (85.7 percent) of the respondents had knowledge on IFMIS practices and operations. The remaining 14.3 percent indicated that they did not have any knowledge about the IFMIS practises and operations. Therefore from the outcomes, it can be understood that the respondents in question are well equipped with knowledge about the system hence the information provided was relevant. Hence this enabled the study to establish the insight of the subject being studied.

Table 4.4 Knowledge on IFMIS Practices and Operations

Responses	Frequency	Percent
Yes	30	85.7
No	5	14.3
Total	**35**	**100**

Source: Research data (2016)

4.3.4 Duration of IFMIS System Operation

The study sought to determine the years of which IFMIS has been in operation and the outcomes are as shown in table 4.5. The results disclose that 50 percent of the respondents stated that the system had been in operation for a period of 1 – 3 years, 33.3 percent said that IFMIS application had been in operation in their respective departments for duration of between 4 – 5 years. The remaining 16.7 percent confirmed that IFMIS application had only been in operation for less than 1 year.

Table 4.5 Duration of IFMIS System Operation

Duration	Frequency	Percent (percent)
Less than 1 year	5	16.7
1-3 years	15	50.0
4-5 years	10	33.3
Total	**30**	**100**

Source: Research data (2016)

Therefore from the outcomes, it can be understood that the IFMIS system has been in operation for quite a while. The number of years a firm has had this system in

operation determines the experience of the respondents in operation of the system. Thus, an indication that the respondents have had adequate operational experience in their respective department at KeRRA and for that reason, possess the necessary knowledge and information which is considered valuable for this study.

4.3.5 Frequency of Attendance of Trainings on Operation of IFMIS Application

The study sought to determine the frequency of IFMIS training that the respondents undergo at KeRRA and the results are as shown in table 4.6. The findings indicate that some respondents attended trainings on IFMIS occasionally and always where each was represented by 28.6 percent respectively. While those who never attended any training, those who rarely attended and those who sometimes attended had a representation of 14.3 percent each. This result indicates that most of the respondents had attended training on IFMIS to understand how it works and its operations. Thus, this is an indication that the respondents had adequate knowledge on how IFMIS application operated.

Table 4.6 Trainings on Operation of IFMIS Application

Attendance	**Frequency**	**Percent (percent)**
Never	5	14.3
Rarely	5	14.3
Sometimes	5	14.3
Occasionally	10	28.6
Always	10	28.6
Total	**35**	**100**

Source: Research data (2016)

4.3.6 Implementation of IFMIS application

The study sought to establish whether the departments of KeRRA had fully implemented IFMIS application and the results are as indicated in table 4.7. The findings reveal that majority of the respondents (57 percent) felt that their respective departments had not fully implemented IFMIS application. On other hand, 43 percent of the respondents admitted that their departments had fully implemented IFMIS application. This signifies that some departments at KeRRA have not fully implemented IFMIS application.

Table 4.7 Implementation of IFMIS application

Responses	Frequency	Percent
Yes	16	43
No	19	57
Total	**35**	**100**

Source: Research data (2016)

4.4 IFMIS Practices

The study sought to establish the extent to which departments had participated in some of the IFMIS practices available at KeRRA. These included: the departments' application of IFMIS in stock and monitoring of procurement process; the departments' usage of IFMIS to improve intelligibility of fiscal relations among the governmental departments as well as the way they apply IFMIS in ensuring access to important information by public. This was done by use of a likert scale of 1 – 5 where: 1 represented very small extent; 2 represented small extent; 3 represented moderate extent; 4 represented large extent; and 5 represented very large extent.

4.4.1 The Application of IFMIS in Stock and Monitoring of Procurement Process

On the question of how IFMIS was being applied in stock and monitoring of procurement process, the study discovered that to a moderate extent IFMIS was being used to control stock and monitor procurement process through department application of e-POS (electronic Point of Sale) solution to enhance efficiency in expenditure payment and by departments using modern resource scheduling techniques in managing their stocks each with a mean of 3.1 respectively.

Table 4.8 Application of IFMIS in Stock and Monitoring of Procurement Process

Responses	N	Mean	Std. Deviation
The department applies e-POS (electronic Point of Sale) solution to enhance efficiency in expenditure payment	35	3.1429	.84515
My department applies modern resource scheduling techniques in managing its stocks	35	3.1429	1.14128
The department applies modern Control & Assets tracking techniques like; barcode based data capture & tracking devices	35	2.8571	1.26358
The department maintains automated cross-checking of numbers identifying individuals and dictating of fraud, regulations available for automated disbursement of cash as well as the way to identify shadow workers	35	2.7143	.89349
My department applies modern technologies to control inventories	35	2.7143	1.04520

Source: Research data (2016)

Some respondents felt that to a small extent (Mean = 2.8), their respective departments applied modern control & assets tracking techniques like; barcode based

data capture & tracking devices. While others revealed that still to a small extent their departments maintained automated cross-checking of numbers identifying individuals and dictating of fraud, regulations available for automated disbursement of cash as well as the way to identify shadow workers as well as their department applying modern technologies to control inventories and each of these factors reported a mean of 2.7. The findings are as summarized in table 4.8.

4.4.2 Usage of IFMIS to Enhance Transparency of Inter-governmental Fiscal Relations

On whether the IFMIS was used to enhance transparency of inter-governmental fiscal relations, the results are as provided in table 4.9.

Table 4.9 Usage of IFMIS to Enhance Transparency of Inter-governmental Fiscal Relations

Responses	N	Mean	Std. Deviation
The department participates in knowledge sharing in the design stage with other departments	35	3.5714	.91670
My department is able to enhance its flexibility and responsiveness to changes in customer demand	35	3.4286	1.19523
My department partakes in an established effective information flow on financial matters	35	2.8571	1.14128

Source: Research data (2016)

The departments participated in knowledge sharing in the design stage with other departments to a moderate extent (Mean = 3.6). Similarly, still to a moderate extent

(Mean = 3.4) the departments were able to enhance their flexibility and responsiveness to changes in customer demand. However, to small extent (Mean = 2.9) some departments undertook in established effective information flow on financial matters.

4.4.3 Application of IFMIS to Enhance Public Access to Key Fiscal Information

The study had interest in finding out if the department at KeRRA applied IFMIS to enhance public access to key fiscal information and the results are as shown in table 4.10. From the results provided in this table, it is clear that the departments had inter-organizational relationship and interdependency with other departments as regards to proper financial reporting in order to enable the public access key data but to a moderate extent (Mean = 3.6). Likewise, to a moderate extent (Mean = 3.4) the departments at KeRRA had implemented models of e-government like G2C, G2B, and G2G, that enhanced access to public information and that the departments had established automated identification of exceptions to normal operations and cross-referencing of inventories of goods procured respectively. In addition, KeRRA departments partook in the presentation of timely and relevant financial data and reporting that was adequate to meet the information needs of the public and other stakeholders to a moderate extent (Mean = 3.3). On other hand, the respondents indicated that their respective departments maintained websites and platforms which were accessible to the public and that their departments maintained cooperation and effective communication mechanisms to a small extent (Mean = 2.7) and (Mean = 2.6) respectively.

Table 4.10 Application of IFMIS to Enhance Public Access to Key Fiscal Information

Responses	N	Mean	Std. Deviation
The department has Inter-organizational relationship and interdependency with other departments as regards to proper financial reporting in order to enable the public access key data	35	3.5714	.91670
The department has implemented models of e-government like G2C, G2B, and G2G, that enhanced access to public information.	35	3.4286	.73907
The department has established automated identification of exceptions to normal operations and cross-referencing of inventories of goods procured.	35	3.4286	.73907
The department partakes in the presentation of timely and relevant financial data and reporting that is adequate to meet the information needs of the public and other stakeholders.	35	3.2857	.71007
The department maintains a website and platform which is accessible to the public.	35	2.7143	.89349
My department maintains Cooperation and effective communication mechanisms.	35	2.5714	1.19523

Source: Research data (2016)

4.5 Operational Performance

The extent to which KeRRA departments had achieved indicators of operation performance was done on based on likert scale of 1 – 5 where: 1 = very small extent; 2 = small extent; 3 = moderate extent; 4 = large extent; and 5 = very large extent. The results of this inquiry are as illustrated in table 4.11. The two main operation

performance indicators discovered by this study were: engineered standards (Mean = 3.8) and performance incentive programs (Mean = 3.8). Productivity tracking reported a mean of 3.5, while operations improvements provided a mean = 3.2. This signifies that the operations performance at KeRRA can best be measured based on engineered standards and performance incentive programs.

Table 4.11 Operational Performance Indicators

Responses	N	Mean	Std. Deviation
Engineered standards	35	3.8571	1.00419
Performance incentive programs	35	3.8571	.64820
Productivity tracking	35	3.5714	.91670
Operations improvements	35	3.2857	1.17752

Source: Research data (2016)

4.6 Regression Analysis

This method was used by this study as a technique to model and analyze the relationship between operation performance (dependent variable) and independent variables (or 'predictors') which are in this case stock and monitoring, transparency, and fiscal information. The study therefore presented model summary which was used to measure the goodness of fit, the ANOVA that tested the hypothesis, and the coefficients of each independent variable.

4.6.1 Goodness of Fit of the Model

The results to test goodness of fit were given through the provision of the *R* Squared value which is the amount of variation explained by the independent variables. From the model summary of a linear regression given in table 4.12 shows the relationship between dependent variable and independent variables. This model provided an *R* value of 0.672 and R^2 value of 0.452. In interpretation, this would mean all the independent variables used in this study can only explain 45.2 percent of the variation of dependent variable. However, the results of the model reveal that the model would be improved by other factors other than those used in the study to determine the relationship between IFMIS and its operational performance.

Table 4.12 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.452	.399	.77835

a. Predictors: (Constant), Stock and monitoring, Transparency, Fiscal information

Source: Research data (2016)

4.6.2 ANOVA

Table 4.13 shows the results of ANOVA for the study model. The ANOVA model gave the regression sum squares of 15.505 and residual sum square of 18.780. The regression mean square is 5.168 while the residuals had a mean of 0.606. The results further presented an *F* – significance value of 8.531, with a *p* – value of 0.000; it means that the model has a strong significance in predicting operation performance. Therefore, stock and monitoring, transparency, and fiscal information were found to

have a strong influence in determining operations performance of Kenya Rural Roads Authority.

Table 4.13 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.505	3	5.168	8.531	.000[a]
	Residual	18.780	31	.606		
	Total	34.286	34			

a. Predictors: (Constant), Stock and monitoring, Transparency, Fiscal information
b. Dependent Variable: Operation Performance

Source: Research data (2016)

4.6.3 Coefficients

The results of the coefficients are as displayed in table 4.14. From the results provided, it can be understood that all the independent variables namely: the application of IFMIS in stock and monitoring of procurement process, usage of IFMIS to enhance transparency of inter-governmental fiscal relations, as well as how IFMIS is applied to improve public accessibility to important financial information are significant in predicting the operation performance at KeRRA. Specifically, stock and monitoring revealed to be a strong predictor as it provided a coefficient of 0.685 (t = 4.115) together with a significant p – value of 0.000. The outcomes on transparency variable also gave significant positive coefficient value of 0.757 (t = 3.204) and p – value of 0.003. Moreover, the other independent variable (fiscal

information) reported a positive coefficient of 0.521 (t = 2.294) with a *p* – value of 0.029.

Table 4.14 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	z/t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.317	1.923		-1.725	.094
	Stock and monitoring	.659	.160	.685	4.115	.000
	Transparency	.829	.259	.757	3.204	.003
	Fiscal information	.707	.308	.521	2.294	.029

a. Dependent Variable: Operation performance

Source: Research data (2016)

The initial regression equation used by the study was:

$OP = \alpha + \beta_1 SM_1 + \beta_2 TR_2 + \beta_3 FI_3 + \varepsilon$

Where: OP = Operational Performance

α = Constant

SM_1 = Stock and monitoring

TR_2 = Transparency

FI_3 = Fiscal information

Therefore, from the findings provided in the regression coefficient table, the study adapted the new model as follows:

$OP = -3.317 + 0.685SM + 0.757TR + 0.521FI + \varepsilon$

Based on the regression results given in table 4.11, there is an indication that stock and monitoring, transparency and fiscal information altogether have a significant relationship on operational performance of KeRRA. The results concur with the findings of Wainaina (2014) that IFMIS practices such as stock and monitoring, transparency and fiscal information have significant impact on the performance on Kenyan commercial state corporations. Furthermore, Njonde and Kimanzi (2014) in their study which analysed IFMIS effectiveness and public sector performance in Kenya, revealed that there was effectiveness in financial reporting through IFMIS, internal controls, budgeting and government projects implementation.

4.7 Challenges to IFMIS

The study further inquired to know whether there were challenges to the implementation of IFMIS and the results are as shown in table 4.15. This was also done by use of likert scale of 1 – 5 where: 1 = very small extent; 2 = small extent; 3 = moderate extent; 4 = large extent; and 5 = very large extent. To a large extent (Mean = 4.0) key activities still being undertaken outside the system was a challenge to implementation of IFMIS system. Manual payment vouchers where when invoices are received, payment vouchers are prepared, supported with LPO's, requisitions and evidence of delivery was also a challenge but to a moderate extent (Mean = 3.7).

The other challenges which affected implementation of IFMIS to a moderate extent were found to be manual purchase orders being issued to suppliers and then 'dead data' entered onto the system (Mean = 3.5); there being existence of parallel systems for payment approval (Mean = 3.4); the budget supply function being outside the IFMIS (Mean = 3.1); and manual capture of LPOs and invoices onto the IFMIS

inevitably resulting into errors (Mean = 3.1). This is an indication that key activities still being undertaken outside the system was a major challenge to implementation of IFMIS system.

Table 4.15 Challenges to IFMIS

Responses	N	Mean	Std. Deviation
Key activities are still undertaken outside the system	30	4.0000	1.43839
Manual payment vouchers where when invoices are received, payment vouchers are prepared, supported with LPO's, requisitions and evidence of delivery	35	3.7143	1.40527
Manual purchase orders are currently issued to suppliers and then 'dead data' is then entered onto the system	35	3.5714	1.31251
There is an existence of parallel systems for payment approval	35	3.4286	1.42014
The budget supply function is outside the IFMIS	35	3.1429	1.26358
Manual capture of LPOs and Invoices onto the IFMIS inevitably results into errors	35	3.1429	1.57448

Source: Research data (2016)

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, provides conclusions of the study based on findings and it also gives recommendations on the topic under study namely IFMIS system and operational performance of Kenya rural roads authority. The chapter further provides suggestion for further study.

5.2 Summary of the Study Findings

The summary given was based on the findings of the study. The study reported a response rate of 70 percent. It was discovered that most of the respondents investigated had achieved prerequisite level of education where 42.8 percent of them had attained undergraduate degrees and 28.6 percent were reported to have postgraduate degrees. The study disclosed that 42.8 percent of the respondents had worked with KeRRA for a period of 4 – 5 years and that majority (86 percent) of them had knowledge on IFMIS practices and operations. 50 percent of the respondents stated that the IFMIS system had been in operation for a period of 1 – 3 years while 33.3 percent said that the application had been in operation in their respective departments for duration of between 4 – 5 years. The findings further revealed that some respondents had always and occasionally attended trainings on IFMIS.

57 percent of the participants of this study felt that their respective departments at KeRRA had not fully implemented IFMIS application. However, 43 percent of the respondents admitted that their departments had fully implemented IFMIS application. It was further discovered that IFMIS application was being used to control stock and monitor procurement process through department application of e-

POS (electronic Point of Sale) solution to enhance efficiency in expenditure payment and by departments using modern resource scheduling techniques in managing their stocks. The departments were found to participate in knowledge sharing in the design stage with other departments to a moderate extent (Mean = 3.6). On the same note, with a mean of 3.4, the departments were able to enhance their flexibility and responsiveness to changes in customer demand.

Based on the findings, the KeRRA departments had inter-organizational relationship and interdependency with other departments as regards to proper financial reporting in order to enable the public access key data. Likewise, the departments at KeRRA had implemented models of e-government like G2C, G2B, and G2G, that enhanced access to public information and that the departments had established automated identification of exceptions to normal operations and cross-referencing of inventories of goods procured respectively. In addition, KeRRA departments were found to partake in the presentation of timely and relevant financial data and reporting that was adequate to meet the information needs of the public and other stakeholders.

The major challenge facing the implementation of IFMIS system was that key activities at KeRRA are still being undertaken outside the system. The findings if the study shows that the two main operation performance indicators were found to be engineered standards and performance incentive programs. The study provided a model R value of 0.672 and R^2 value of 0.452 which meant that stock and monitoring, transparency, and fiscal information as used in this study was able to explain 45.2 percent of the variation of operation performance. The model further gave a p – value of 0.000, which indicated that the model was significant in predicting operation performance and therefore, stock and monitoring, transparency, and fiscal information

put together were found to have a strong influence in determining operations performance of Kenya Rural Roads Authority

5.3 Conclusion

The study concludes that best practices on IFMIS system contribute much on operational performance of KeRRA at large. Such practices include application of IFMIS in stock and monitoring of procurement process, usage of IFMIS to enhance Transparency of Inter-governmental Fiscal relations, and application of IFMIS to enhance public access to key fiscal information.

The study has as well revealed that there are difficulties which can be experienced in the implementation of IFMIS application. Especially, when the key activities are still being undertaken outside the system, this can derail the full implementation of the system. Other obstacles such as existence of parallel systems for payment approval, manual payment of vouchers when invoices are received, payment vouchers being prepared, supported with LPO's, requisitions and evidence of delivery, manual purchase orders being currently issued to suppliers and then 'dead data' entered onto the system, manual capture of LPOs and invoices onto the IFMIS inevitably resulting into errors, as well as budget supply function being outside the IFMIS, also seem to pose a risk to the successful implementation of IFMIS application.

To enhance more efficiency in the current dynamic world, KeRRA should adopt and embrace new and modern systems of managing finances. Changes in technology are inevitable and this also affects the whole processes and the skills of the workforce. Such changes have to be embraced from within and not imposed from external

sources. This can be done through borrowing knowledge from success stories on IFMIS usage. It also calls for proper control and monitoring to ensure sustainability.

5.4 Recommendations

The study therefore recommends that guideline on best practices should followed to ensure full implementation and functioning of IFMIS system. Such idea should go along with capacity-building training programmes that cover all the key actors in the public sector. The respective stakeholders should come up with a legal framework, an agenda for effective change management, and a strong project management team which would help the institution in creating a well-defined project implementation plan.

5.5 Limitations of the Study

This study was limited to the influence of integrated financial management information system on the operational performance with focus on Kenya rural roads authority. The cost and time issues were found to limit the study to the scope of study, however, given more time and financial support the research would have been expanded to cover a wide range. Some respondents were unreachable translating to other questionnaires were not being filled and/or returned.

5.6 Suggestion for further Study

This study focused on major variables such as stock and monitoring, transparency, and fiscal information. It can be therefore recommended that further study based on factors other than the one used in this study should be employed in determining the influence on operation performance of organizations. This study was restrained to Kenya Rural Roads Authority; however, there is need to find out the how the

integrated financial management information system relate to operational performance in other sectors/institutions which play key role in the development of the country to help in finding further insight of the subject matter.

REFERENCES

Abass S. S. & Bichanga W. O. (2014) Assessment on the effect of procurement process on strategy implementation in road public corporations as per the Kenya's Vision 2030

Agaba, E & Shipman N. (2007). Public Procurement Reform in Developing Countries: The Ugandan Experience. In G. Piga & K. V. Thai (Eds.), *Advancing Public procurement Practices*.

Ajayi, I. A., & Omirin, F. F. (2007). The Use of Management Information Systems (MIS) In Decision Making In The South-West Nigerian Universities, *Educational Research and Review,* Vol. 2, No. 5, pp. 109-116.

Ajzen I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes* 50, 179 – 211

Ajzen, I. & Fishbein, M. (1980), *Understanding attitudes and predicting social behavior*, Englewood Cliffs, NJ: Prentice-Hall

Aketch, J., & Karanja, P. (2013).Factors Influencing Procurement Performance in Constituency Development Fund (CDF): Case of CDF Use in Makadara Constituency. *International Journal of Social Science & Entrepreneurship*. 1(2), 41 – 55.

Alshehri, M. & Drew, S. J. (2010) Challenges of e-government services adoption in r Saudi Arabia from an e-ready citizen perspective, *World Academy of Science, Engineering and Technology*, 66, 1 – 17.

Asselin, L. and Srivastava, (2009), "Integrated Financial Management Systems: Experiences in Latin America", *World Bank* (mimeo), Washington DC

Baily, P. J. H. (2008). *Procurement Principles and Management*. Harlow, England: Prentice Hall Financial Times.

Bakker, A. B. & Schaufeli, W. B. (2008), "Positive organizational behaviour: engaged employees in flourishing organizations", Journal of Organizational Behaviour, Vol. 29, pp. 147-54.

Ball, R. L. (2005). Government Procurement. Retrieved from www.govpro.com.

Barney J. B., & Hesterly W., (1996). Organizational Economics: Understanding the Relationship between Organizations and Economic Analysis. In Clegg S. R., Hardy C., & Nord W. R. (Eds.) *Handbook of Organization Studies, Sage Publications, London.*

Barney, J., (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17* (1), 99-120.

Bartel, M. L. (2009). Integrated Financial Management Systems: A Guide to Implementation Based on Experience in Latin America. Washington, DC: Institute for Democratic Strategies, *LATPS Occasional Paper Series*.

Brennan, P. J. (2007) *Promoting the Value of Public Procurement: Measurement Systems and Performance Metrics for Public Procurement*. Radcliffe Publishing Ltd, Oxon.

Casals A., (2009). Integrated Financial Management Systems Best Practices: Bolivia and Chile," funded under USAID Contract AEP-I-00-00-00010-00, Task Order No. 01 *Transparency and Accountability*.

Chene, M. & Hodess, R. (2009). The Implementation of Integrated Financial Information Management Systems (IFMIS), *Transparency International*, 2(1), 23 – 79.

Chyou T., Jiin J., Hao C., Cheng F. & Yu B. (2012). Acceptance of Qr Code In Taiwan: An Extension Of The Technology Acceptance Model. *PACIS 2012 Proceedings.* Paper 12. http://aisel.aisnet.org/pacis2012/12

Cornelia K. S., Muhumuza, E. & Basheka, B.C. (2010). Developing Public Procurement Performance Measurement Systems in Developing Countries:

The Uganda Experience. In Piga, G & Thai, K.V. (2007). Advancing Public Procurement: Practices, Innovation and Knowledge-sharing, *Pr Academics Press*: USA

Davis, F. D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *Management Information System Quarterly*, 13(3): 319 – 340, doi:10.2307/249008

Davis, F. D.; Bagozzi, R. P.; Warshaw, P. R. (1989), User acceptance of computer technology: A comparison of two theoretical models, *Management Science*, 35: 982 – 1003, doi:10.1287/mnsc.35.8.982

Diamond, J. & Pokar K. (2005), Introducing Financial Management Information Systems in Developing Countries, International Monetary Fund.

Diamond, J. & Pokar K. (2005), Introducing Financial Management Information Systems in Developing Countries, *International Monetary Fund*.

Dierickx, I., K. & Cool, (2009). Asset Stock Accumulation and Sustainability of Competitive Advantage. *Management Science, 35* (12), 1504-1511.

Dorotinsky, W. & Junghun, C. (2003).The World Bank's Experience with Financial Management Information System (FMIS) Projects. Washington, D.C.: World Bank, PRMPS, draft, 4/16/03.

Furlotti, M. (2014). A model of Best Practices for a Sourcing Process. *Helsinki Metropolia University of Applied Sciences*. Master of Business Administration.

Gakuu J. K. & Nyambura E. N. (2014). Factors Influencing Implementation of Intergrated Financial Management Information System in Kenya Government Ministries. *Research Journal of Finance and Accounting*, 5(7), 10

Gallagher, M. C. (2007). Building Fiscal Infrastructure in Post-Conflict Societies. USAID under Contract GEG-I-06-04-00001-00 Task Order No. 06.

GOK (2011). Integrated Financial Management Information System (IFMIS) IFMIS Re-Engineering, From Modular, to Full Cycle End–To-End Processes, *Strategic Plan 2011-2013*

Goodhue, D. & Thompson, R. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*, 19(2).

Greenbank P. (2003) The Role of Values in Educational Research: the case for reflexivity, *British Educational Research Journal*, 29(6) 791 – 801

Huse, M., Gabrielsson, J. (2004), Past trends and future challenges in research on boards and governance: A review of major management journals between 1990-2002, paper presented at *4th EURAM Annual Conference,* St Andrews, 5 – 9

IMF (2006). *World Economic Outlook*. Washington DC.

Juma, M. J. O., (2010). Public Procurement Reforms in Kenya, Presentation to the OECDDAC Conference, 3rd-5th May, PPOA- Nairobi.

Kipngeno, G. R. & Okello, B. (2015). Analysis of Use of E-Procurement on Performance of the Procurement Functions of County Governments in Kenya. *International Journal of Economics, Commerce and Management, 3* (6), 1381-1398.

Kishor V. A. Sajeev S. M. & Callender G. (2013). Critical Factors that Influence SCM Implementation Success in the Public Sector. *Journal of Public Procurement*. 6(1&3), 79.

Koskey, J., (2010). Public Sector Procurement in Kenya: The need for a Coherent Policy Framework. *Journal of Economics, KIPPRA Kenya*

Lianzuala, A. & Khawlhring, E. (2008). IFMIS Project., accessed on 12th, August 2016, from www.docstoc.com

Ministry of Finance Report (2003). Public Performance Contracting Report. Nairobi, Kenya.

Mosoba, T., (2012).Public Procurement System in Kenya. Nation Media Group, Nairobi.

Muthoni, K., (2010). Procurement and Contracting in Public Organizations in Kenya. Journal of Public Procurement, 3(2), 215-26.

Ndegwa, P. M., & Amuhaya, M. I. (2014). Factors Affecting the Adoption of Global Sourcing: A Case Study of Tuskys Supermarkets, Kenya. *IOSR Journal of Business and Management (IOSR-JBM), 16* (4), 72-76.

Njonde, J. N. & Kimanzi, K. (2014). Effect of integrated financial management information system on performance of public sector: A case of Nairobi County Government. *International Journal of Social Sciences and Entrepreneurship, 1* (12), 913-936.

Njuru, J. W. (2011). Implications of E-Government on Public Policy and Challenges of Adopting Technology: The case of Kenya. *Journal of global affairs and public policy* 1(1).

Odoyo, F. S., Adero P., & Chumba S. (2014). Integrated Financial Management Information System and Its Effect on Cash Management in Eldoret West District Treasury, Kenya. *International Journal of Business and Social Science, 5* (8), 31-37.

Odoyo, F. S., Adero, P., & Chumba, S. (2014). Integrated Financial Management Information System and Its Effect on Cash Management in Eldoret West District Treasury, Kenya", *International Journal of Business and Social Science*.5(8), 1 – 23.

Owegi, F., & Aligula, E., (2006). Public Sector Procurement in Kenya: The Need for a Coherent Policy Framework. *Kenya Institute for Public Policy Research and Analysis*, Nairobi.

Perunović, Z. & Lindgaard, J. P. (2007). Outsourcing Process and Theories. Paper presented at *POMS 18th Annual Conference Dallas*, Texas, U.S.A. May 4 to May 7.

Peterson, S., C. Kinyeki, J. Mutai, Kipsang, S. W. (2008)., "Computerizing Accounting Systems in Developing Bureaucracies: Lessons from Kenya", *Public Budgeting and Finance*, 16(4), Winter, 45 – 58.

Pinto, J. K. & Slevin, D. P. (1987) Critical Factors in Successful Project implementation IEEE Transactions on Engineering Management, (EM-34) 22 – 27.

Pisano, G.P., (1990). The R&D Boundaries of the Firm: An Empirical Analysis. *Administrative Science Quarterly*, 35, 153-176.

Ramdani, B. & Kawalek, P. (2008). *Exploring SMEs' adoption of broadband in the Northwest of England*, in Dwivedi, Y.K., Papazafeiropoulou, A. and Choudrie, J. (Eds), *Handbook of Research on Global Diffusion of Broadband Data Transmission*, Information Science Reference, Hershey, PA, 504 - 523.

Republic of Kenya (2015). The public procurement and asset disposal act. *Kenya Gazette Supplement* No. 207 (Acts No. 33). The Government Printer, Nairobi

Rodin-Brown, E. (2008). Integrated Financial Management Information Systems: a Practical Guide edited by Steve Rozer and Marck Gallagher. United States Agency for International Development. Development Alternatives, *Inc. Under the Fiscal Reform and Economic Governance Task Order*, GEG-I-00-04-00001-00 Task order No. 06.

Rogers E. M. (1995). *Diffusion of Innovations*, (4th Edition). Free Press

Romi, A.; Konishi, N.; Conrade, P.; Green, W. & Cheng, M. (2013). The International Integrated Reporting Framework: Key Issues and Future Research Opportunities. *Journal of International Financial Management & Accounting*, 25(1), 233-453.

Roy, V. & Aubert, B. (1999). Resource Based View of the Information Systems Sourcing Mode. *Scientific Series*, 99s-34.

Sandberg, E., & Abrahamsson, M., (2010).The Role of Top Management in Supply Chain Management Practices. International *Journal of Retail Distribution Management*, 38(1), 57–69.

Schapper, P. R., Malta J. N. V. & Diane L. G. (2006). An Analytical Framework For The Management And Reform Of Public Procurement *Journal Of Public Procurement, 6*(1 & 3), 1 – 26

Scott, C., Lundgren, H., & Thompson, P., (2011). *Guide to Supply Chain Management*, Springer-Verlag Berlin Heidelberg.

Semakula L. & Muwanga R. (2012). Uganda: implementing an Integrated Financial Management System and the automation of the budget process. *Budget Strengthening Initiative.*

Semakula, L. & Muwanga, R. (2012). Implementing an integrated FMS and the automation of the budget process, Budget strengthening initiative.

Sudarsana R. G., Sivarami R. C. & Mohan R. P. (2015). Financial management focus on operational performance of paper industry in Andhra Pradesh State of India: Empirical Research Findings. *Journal of Financial Management and Analysis, 27* No. 2.

Trent, R. & Monczka, R. (2003). International purchasing and global sourcing: What are the differences? *Journal of Supply Chain Management, 39* (4), 26-36.

Van Weele, A. J. (2010). *Purchasing and supply chain management: Analysis, Strategy, Planning and Practice*. Cengage Learning EMEA; 5th Revised edition.

Wainaina A. M. (2014). The effects of integrated financial management information system on financial performance of commercial state corporations in Kenya. *Unpublished Thesis.* Master of Business Administration. Univesity of Nairobi.

Wittig, W. A. (2013). *Public procurement and the development Agenda*. United Nations Conference on Trade and Development, World Trade Organization, International Tade Centre. https://www.wto.org/english/tratop_e/gproc_e/wkshop_tanz_jan03/itcdemo1_e.pdf

World Bank Report (2014). LR-Public Financial Management – IFMIS. *Projects and Operations.* Accessed on September, 2nd 2016, from http://www.worldbank.org/projects/P109775/lr-public-financial-management-ifmis?lang=en

Zigurs, I., B. & Buckland K. 1998. A theory of task/technology fit and group support systems effectiveness. *MIS Quarterly*. (September) 313–334.

APPENDICES

Appendix I: Introductory Letter

P.O. Box -00100

Nairobi, Kenya

Dear respondents,

I am a student at University of Nairobi Department of Management Science in the School of Business undertaking Masters' Degree in Business Administration. I request you to spare your time to fill this questionnaire that is intended to find out **IFMIS and Operational Performance at Kenya Rural Roads Authority.** Kindly spare some time to fill the attached questionnaire to enable me complete the study for which I will be very grateful. You are kindly requested to fill in the blank spaces at the end of each question or statement or simply put a tick where appropriate. This information will be used purely for academic purposes and will be treated in strict confidence. You need not include your name. Any additional information that you might feel is necessary for this study is welcome.

Your participation in this study will be valuable as it will contribute to the achievement of the study objectives. Please respond as honestly and truthfully as possible. Put a tick (√) on the appropriate answer on the statements below.

Acceptance to be a respondent in this study

I _____ have agreed to participate in the study

Signature (Do not indicate your name)

Thanks in advance for your support.

Regards,

_____

UON Student

Appendix II: Questionnaires

Instructions

Please do not write your name or that of your school anywhere on this questionnaire. Please tick [√] where appropriate or fill in the required information on the spaces provided.

Section A: Demographic Data

1. Name of your department/section (optional) ……
2. What is your highest level of education?

   Certificate [ ] Diploma [ ] Higher Diploma [ ] Undergraduate [ ]

   Postgraduate [ ] Any other _____

3. How long have you worked at KeRRA?

   Less than 1 year [ ] 1-3 years [ ] 4-5 years [ ] 6 years and above [ ]

Section B: Relationship between integrated financial management information system and operational performance of Kenya Rural Roads Authority.

4. Do you have knowledge on IFMIS practices and operations?

   Yes [ ] No [ ]

How long have you operated on IFMIS system?

Less than 1 year [ ] 1-3 years [ ] 4-5 years [ ] 6 years and above [ ]

How often do you attend trainings on operating IFMIS application?

Never [ ] Rarely [ ] Sometimes [ ] Occasionally [ ] Always [ ]

Have your department fully implemented IFMIS application?

Yes [ ] No [ ]

5. Based on the likert scale of 1 – 5 where: 1 = Very Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent, indicate the extent of which your respective department has participated in the following IFMIS activities?

IFMIS PRACTICES	**1**	**2**	**3**	**4**	**5**
A. The department application of IFMIS in stock and monitoring of procurement process					
The department maintains automated cross-referencing of personal identification numbers for fraud detection, automated cash disbursement rules and identification of ghost workers					
My department applies modern resource scheduling techniques in managing its stocks					
My department applies modern technologies to control inventories					
The department applies modern Control & Assets tracking techniques like; barcode based data capture & tracking devices					
The department applies e-POS (electronic Point of Sale) solution to enhance efficiency in expenditure payment					

B. The department usage of IFMIS to enhance Transparency of Inter-governmental Fiscal relations	**1**	**2**	**3**	**4**	**5**
My department partakes in an established effective information flow on financial matters					
The department participates in knowledge sharing in the design stage with other departments					
My department is able to enhance its flexibility and responsiveness to changes in customer demand					

C. The department application of IFMIS to enhance Public access to key Fiscal information	**1**	**2**	**3**	**4**	**5**
My department maintains Cooperation and effective communication mechanisms					
The department has adopted e-government models such as G2G, G2B, and G2C which enhance public access to key fiscal information					
The department maintains a website and platform which is accessible to the public					
The department has established automated identification of exceptions to normal operations and cross-referencing of inventories of goods procured					
The department partakes in the presentation of timely and relevant financial data and reporting that is adequate to meet the information needs of the public and other stakeholders					
The department has Inter-organizational relationship and interdependency with other					

departments as regards to proper financial reporting in order to enable the public access key data					

Section C: Challenges to IFMIS

Indicate the extent at which the following are challenges to the application of IFMIS. Use a likert scale of 1 – 5 where: 1 = Very Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent.

Challenges	**1**	**2**	**3**	**4**	**5**
Key activities are still undertaken outside the system					
There is an existence of parallel systems for payment approval					
Manual payment vouchers where when invoices are received, payment vouchers are prepared, supported with LPO's, requisitions and evidence of delivery					
Manual purchase orders are currently issued to suppliers and then 'dead data' is then entered onto the system					
Manual capture of LPOs and Invoices onto the IFMIS inevitably results into errors					
The budget supply function is outside the IFMIS					

Section D: Operational Performance

Indicate the extent at which your department has achieved the following operational performance indicators. Use a likert scale of 1 – 5 where: 1 = Very Small Extent; 2 = Small extent; 3 = Moderate Extent; 4 = Large Extent; 5 = Very Large Extent.

Operational Performance Indicators	**1**	**2**	**3**	**4**	**5**
Operations improvements					
Productivity tracking					
Engineered standards					
Performance incentive programs					

THE END

THANK YOU