

**THE EFFECT OF INTEGRATED FINANCIAL MANAGEMENT
INFORMATION SYSTEMS ON THE FINANCIAL MANAGEMENT
OF PUBLIC SECTOR IN KENYA: A CASE OF THE KENYAN
MINISTRIES**

**BY
EVANS KAMAU MUIGAI**

**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN
PARTIAL FULFILLMENT OF THE REQUIREMENT OF AWARD
OF MASTER OF BUSINESS ADMINISTRATION DEGREE IN THE
SCHOOL OF BUSINESS OF THE UNIVERSITY OF NAIROBI**

NOVEMBER 2012

DECLARATION

I declare that this research is my original work and has not been presented for award of a degree in any other University.

SignedDate:

Evans Kamau Muigai

D61/60169/2011

This Project has been submitted for examination with my approval as the University Supervisor

Signed Date:

James M. Ng'ang'a

Department of Accounting and Finance

University of Nairobi

DEDICATION

I dedicate this project to my mother the late Rosemary Wanjiku Muigai without whom I would not be. I also dedicate it to my little girl Nicole Evans for her understanding during this entire period of study.

ACKNOWLEDGEMENT

First I wish to acknowledge the kind support of my supervisor Mr. James M. Ng'ang'a for his tireless guidance and positive criticism in this project work.

My sincere and cordial thanks are to Mr. Mirie Mwangi of the University of Nairobi for moderating this project work and for his technical assistance and various variable comments that I got from him during the development of this project paper.

I acknowledge and express my gratitude to the Ministry of labour and human resource development for allowing me to undertake this course.

I also thank the Staff of various Ministries who contributed in my data collection for their cooperation and assistance.

Lastly I am grateful to my family and friends for their support during the period I was undertaking this research project.

ABSTRACT

This study discusses the subject of the effects of Integrated Financial Management Information Systems (IFMIS) on the financial management of public sector. The IFMIS provides a critical financial management solution for countries whose administrative and economic infrastructure is obsolete, or has been destroyed through war and years of conflict. There is broad agreement that a fully functioning IFMIS can improve governance by providing real-time financial information that financial and other managers can use to administer programs effectively, formulate budgets, and manage resources. Sound IFMIS systems, coupled with the adoption of centralized treasury operations, can not only help developing country governments gain effective control over their finances, but also enhance transparency and accountability, reducing political discretion and acting as a deterrent to corruption and fraud.

The study covered 42 government Ministries in Kenya where 30 accountants involved in the use of Integrated Financial Management Information Systems were surveyed and data collected using both primary and secondary questionnaires and review of economic survey and statistical abstract. The study found out that IFMIS has greatly contributed to improvement in financial management in Kenya.

The study recommended that IFMIS should therefore be rolled out to all public sector departments in the country.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF ABBREVIATIONS	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the Study	1
1.2 Statement of the Problem	6
1.3 Research Objectives	8
1.3.1 Main Objective	8
1.3.2 Other Objective	9
1.4 Significance of the Study	9
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Theoretical Framework	11
2.2.1 Meta Theory Model	11
2.2.2 Contingency Theory	13
2.2.3 IT on Accounting	15
2.3 Review of Empirical Studies	15

2.3.1 Capacity and technical skills.....	16
2.3.2 Complexity of the System.....	17
2.3.3 Motivation of the work force	17
2.3.4 The case of Slovak Republic.....	18
2.3.5 The case of Malawi.....	20
2.3.6 The case of Uganda.....	20
2.4 Summary of Literature Review.....	21
CHAPTER THREE: RESEARCH METHODOLOGY	23
3.1 Introduction.....	23
3.2 Research Design.....	23
3.3 Population of the study	24
3.4 Data Collection	24
3.5 Data Analysis and Reporting	25
CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND PRESENTATION	26
4.1 Introduction.....	26
4.2 Secondary Data Analysis	26
4.3 Primary Data Analysis	34
4.4 Discussion.....	36

CHAPTER FIVE: SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS.....	38
5.1 Introduction.....	38
5.2 Summary.....	38
5.3 Conclusion and Recommendations.....	45
5.4 Recommendations.....	47
5.5 Limitations of the study	48
5.5.1 Time Constraint	48
5.5.2 Budgetary Constraint	49
5.5.3 Sample Selection.....	49
5.5.4 Cooperation.....	49
5.6 Suggestions for Further Research.....	49
REFERENCES.....	50
APPENDICES.....	53
Appendix A: Questionnaire	53

LIST OF TABLES

Table 4.1: Unit root test for before IFMIS.....	27
Table4.2: Unit root test for after IFMIS.....	28
Table 4.3: Comparative result of the F-Test for the two periods.....	29
Table 4.4: Global Statistics Summary for after IFMIS and before IFMIS	29
Table 4.5: Summary of the Regression Coefficients for the two periods.....	30
Table 4.6: Global statistics and Criteria.....	31
Table 4.7: Incremental GDP Growth For The two periods	32
Table 4.8: A comparative result of computed GINI indexes for the two periods.....	33
Table 4. 9: Use of IFMIS	34
Table 4.10: IFMIS review.....	35
Table 4.11: Effect of IFMIS in Financial Management of Public Sector.....	36

LIST OF ABBREVIATIONS

BOP - Balance of payment

CoA-Chart of Accounts

CoA-Chart of Accounts

GoK-Government of Kenya

IAS-International Accounting Standards

IFMIS- Integrated financial management information system

IFRS-International Financial Reporting Standards

IMF- International Monetary Fund

IT-Information Technology

OLS – Ordinary Least Squares

PEM – Public Expenditure Management

PFM- Public Financial Management

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Western countries are convinced that the information society will result in economic and social benefits (Audenhove, 2000). The author quoting organization for economic cooperation and development notes that information infrastructures are expected to stimulate economic growth, increase productivity, create jobs and improve the quality of life. The GoK has for a long time been much concerned over the persistent poor performance in financial management due to lack of reliable and timely information for decision making. A review by the department of Accountant General at treasury - financial management, accounting systems and role of audits (KPMG/ Accountants General report; June 1997), revealed weaknesses in the management of financial information. It reviewed how timeliness of financial information if improved could form the basis for improving control of expenditure against budget.

The establishment of an IFMIS has become an important benchmark for the country's budget reform agenda often regarded as a precondition for achieving effective management of budgetary resources (Diamond et al, 2005).

Integrated Financial Management System (IFMIS) is an information system that tracks financial events and summarizes financial information. In its basic form, an IFMIS is little more than accounting system configured to operate according to the needs and specifications of the environment in which it is installed. Generally IFMIS refers to the

use of information and communications technology in financial operations to support management and budget decisions, fiduciary responsibilities, and the preparation of financial reports and statements. In the government realm, IFMIS refers more specifically to the computerization of the public financial management processes, from budget preparation and execution to accounting and reporting, with the help of an integrated system for financial management of line ministries, spending agencies and other public sector operations.

An IFMIS stores, organizes and makes access to financial information easy. It not only stores all the financial information relating current and past years spending, but also stores the approved budgets for these years' details on inflows and outflow of funds, as well as complete inventories of financial assets (e.g. equipment, land and buildings) and liabilities (debt). A strong Public Financial Management (PFM) system is a catalyst for economy's growth and development. It ensures that the government and its departments raise manage and spend public resources in an efficient and transparent way. Sound systems, strong legal and regulatory frameworks as well as a competent and productive civil service are the cornerstones of an efficient PFM regime. Public Financial Management reforms have been identified as the key drivers to efficient public service delivery and creation of wealth and employment.

Over the last decade, the GoK has undertaken a number of PFM reforms aimed at enhancing accountability and transparency. These reforms have targeted the core PFM systems of budget formulation and execution, Public Procurement, Revenue collection,

Internal and External audit, parliamentary oversight, Payroll and pensions, Public debt and guarantees, Accounting and Reporting and the Macro-fiscal framework. The PFM reform is also instrumental in the fight against wasteful spending and corruption. Various studies show positive results and an improved performance by the public financial systems, although challenges still remain in key areas of the economy. This calls for sustained implementation of the government's reform programs. One of the major reforms embarked on is the automation of Public Financial Management processes, Electronic Funds Transfer, the Pension System and the Public Debt Management systems among others have been premised on the realization of GoK can effectively leverage existing and emerging technology to enhance the pace of reforms.

Obstacles should not be underestimated. The road to implementing successful IFMIS in developing countries is paved with difficulties, such as resistance from the bureaucracies involved; lack of decision-making from the top; corruption and fraud; and, in the case of conflict ridden countries, the instability and violence that impair any efficient long-term work. Moreover, IFMIS systems are complicated, expensive and difficult to manage and maintain. Obstacles notwithstanding, the task is still feasible. The technology exists and aid agencies can play a very important role in helping the decision makers choose the most adaptable and appropriate tools for their environments. The choice of a step-by-step or phased approach offers the best chances for successful implementation as a project can be carefully monitored and reviewed regularly. Given the cost of such exercises, it is important to aim first for a sound "entry level", which, once functioning effectively, can then be extended to support additional functions.

Political will is crucial to this process. Once the decision has been made to implement an IFMIS, the battle is half-worn. Garnering support from those who will use the new system, and overcoming resistance from those who stand to lose from its implementation, can be an equally daunting challenge. Change management is therefore an important part of any IFMIS project. IFMIS implementation requires patience. The full project life-cycle- from definition of objectives, to system specifications, to system procurement, configuration, testing and rollout- can easily take 7-10 years, or longer, to complete. For this reason, IFMIS implementation is best done when it is divided into clearly defined stages with clear objectives and milestones. As each stage is completed, stakeholders should carefully assess project progress and ensure that the system under development still meets the needs of the government, and that government commitment to the IFMIS is still there. The ultimate goal should be to put in place sound systems that are well understood and embraced by counterparts and in the end will be self-sustaining.

1.1.1 Ministry of Finance

The Ministry of Finance derives its mandate from the Constitution of Kenya, Cap VII Sections 99-103 which provides for proper budgetary and expenditure management of government financial resources. In addition, Parliament, over the years has enacted 49 Acts to which the Ministry of Finance is a custodian thereby adding more responsibilities to the Ministry.

The functions of the Ministry of Finance are strategic in several ways. As a main function, the Ministry is charged with the responsibility of formulating financial and economic policies. It is also responsible for developing and maintaining sound fiscal and monetary policies that facilitate socio - economic development. This responsibility makes

the Ministry strategic and central to the country's economic management, as all sectors of the economy look upon the Ministry to create an enabling environment in which they can operate effectively and efficiently. The Ministry regulates the financial sector which is central to the development of the country and on which all other sectors depend for investment resources.

Another strategic responsibility of the Ministry is the management of revenues, expenditures and borrowing by the government. The Ministry must ensure that it mobilizes adequate resources to support government programmes and activities. Consequently, the Ministry has the task of developing sound fiscal policies that ensure sustainable budget deficits. In addition the Ministry must ensure that government expenditure is within the revenue collected to reduce domestic borrowing, which tends to cause negative ripples in economic management.

The Ministry is also strategic as far as bilateral and multilateral development financing and technical assistance is concerned. Given the need for support from development partners to enhance the country's economic recovery and poverty reduction efforts, the performance of the Ministry in effectively coordinating this support cannot be underscored. The Ministry must therefore, provide direction in the identification, planning and management of donor support to ensure that it is targeted to those areas of the economy that need it most.

The Ministry coordinates government ministries/departments in the preparation of the annual national budget. It is the responsibility of the Ministry to initiate and guide all ministries/departments to prepare their ministerial budgets. The Ministry also provides Accounting, Auditing, IT, Insurance, Pensions, Procurement, Clearing and Forwarding services, and Divestiture services among others to other government ministries /departments. The Ministry has established an elaborate network through its established departments, and sector institutions, to effectively deliver on its mandate.

1.2 Statement of the Problem

There is a broad agreement that a fully functioning IFMIS can improve governance by providing real-time financial information that financial and other managers can use to administer programs effectively, formulate budgets, and manage resources. The Ministry of Finance is charged with the responsibility of providing proper budgetary and expenditure management of government financial resources. In this regard, the ministry has been continually striving to improve financial management systems through various Public Financial Sector Reform Programmes, aimed at increasing transparency, accountability, as well as responsiveness of public financial resources to enhance the quantity and quality of public service delivery to meet its developing priorities.

In the past decade, developing countries have been encouraged to reform their public expenditure systems and have increasingly embarked on major projects to computerize their government operations. Most popular among this have been projects to computerize government accounting and payment operations, by introducing government financial

management information systems. Kenya being a developing country, has since 1997 been implementing a project for the “strengthening of government finance and accounting functions”. This is for the purpose of improving management, accountability, and transparency of public funds. During the first two phases over the first three years, a number of diagnostic reviews were conducted and a financial management system was developed. The implementation phase has raised a number of issues but the system has been implemented and is being used in some ministries.

Casals and Associates (2004) in “Integrated Financial Management Systems Best Practices: Bolivia and Chile,” for designing and implementing IFMIS and how to put them in specific environments: namely, in developing and transitional countries as well as in conflict and post-conflict situations has been done. This study showed that an IFMIS provides critical financial management solution for countries whose administrative and economic infrastructure is obsolete or has been destroyed through war and years of conflict.

Diamond et al. (2005) in “Introducing Financial Management Information Systems in Developing Countries,” on the introduction of IFMIS in developing countries established that, first; the decision to introduce an IFMIS needs to be accompanied by strong commitment, sufficient manpower and financial resources, widespread internal support, and an agenda for effective change management. Second, the introduction of an IFMIS in a developing country should be regarded as a component of a wider reform process.

Third, the implementation strategy both in terms of functionality and number of entities needs to be phased.

A study conducted by Bill Dorotisky on bank funded IFMIS projects found out that only 21% of IFMIS projects were successful, only 6% of the projects were considered sustainable. (Dorotinsky, 2003). None of these studies tackled the effect of IFMIS on the financial management of the public sector in Kenya. It is in this light that the research sought to fill the existing gap in this area of study by answering the following questions:

- i. To what levels is IFMIS used in the public sector in Kenya?
- ii. How successful has IFMIS been in Financial Management?

1.3 Research Objectives

1.3.1 Main Objective

The primary objectives of this study with respect to the financial management of the public sector was to find out the effect of IFMIS on the financial management of the public sector in Kenya.

1.3.2 Other Objective

- i. Establish to what levels IFMIS is used in Kenya.

1.4 Significance of the Study

The research was important because it investigated and provided answers to issues that are becoming more applicable in the increasingly information systems environment; leadership and financial management of public sector. The research conducted for this study identified the factors that influenced installation of IFMIS and produced guidelines that can be used by the public sector to enhance financial management of public resources. The information contained in the dissertation will be important to managers because it can be used to make major improvements to managerial deficiencies that may exist within their sector. The study is particularly important to the following;

1. Public Institutions

The public institutions will have new channels of record keeping, and they will be in a position to use IFMIS to provide timely, accurate and consistent data for management and budget decision making. It will also provide them with means that will provide value for their money.

2. Ministry of Finance Management

The Ministry of Finance Management will benefit from the information on the effects of IFMIS on financial management in the public sector in Kenya, its importance and how to successfully implement the system to ensure its efficiency and effectiveness.

3. Academicians/Scholars

The study will stimulate academic interest in the whole aspect of integrated financial management information system in the public sector especially because it is a relatively new field hence forms a basis for future research in IFMIS in both private and public sectors.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter has started with an introduction to IFMIS followed by the underlying theoretical framework behind IFMIS. The manner into which this system came into being has also been looked at including the system from which it was coined. The empirical evidence of the system has followed suit. The conclusion of the chapter has also been given.

2.2 Theoretical Framework

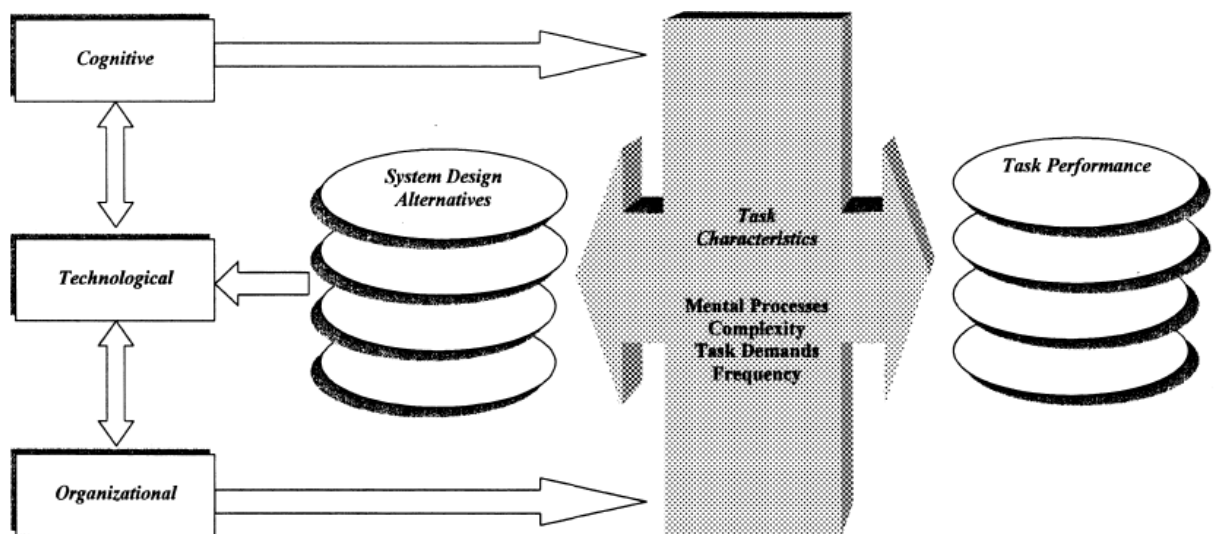
2.2.1 Meta Theory Model

According to Ruchala and Mauldin (1999), research on accounting information systems has been sourced from various disciplines, basically computer science, cognitive psychology and organizational theory. In this regard, it has been asserted that previous applications of information technology in accounting systems were mainly processes of transactions that would reciprocate the manual processes. This has led to the need of incorporating various accounting sub disciplines into more research on accounting information systems.

With increased focus on the design of these systems, practicing professionals will add more value to the field and thus redefine the scope of accounting information system. The changing nature of the information systems has brought about the need for an organized way of doing things. Meta theory is the integration and the synthesis of technical

orientations, cognitive as well as the overarching model into the research on AIS. The meta theory has helped in addressing the IT limitations that are imminent and addressed in previous researches such as the failure to recognize the task to which IT is being applied, the failure to recognize the adaptive nature of the artificial phenomena, the failure to account for the design science in the actual field research and the failure to direct the act of making or choosing the necessary decisions and treating all the transactions in an equal manner (Gorry and Scott-Morton, 1971).

According to Reneau and Grabski (1987) information systems in accounting are used by accountants and other key decision makers that employ the accounting information or make use of the accounting data. The meta theory model is built on past frameworks on the management information systems. The meta theory model in accounting information systems can be simplified in a diagram as below;



The Meta theory model by Elaine G. Mauldin, Linda V. Ruchala

Technology is very pervasive and an essential component in accounting tasks and changes work processes very efficiently. This is well recognized in the accounting theory. There are many research methods that are being employed to look into the problems inherent in Accounting information systems and accounting problems. This is evident in managerial accounting where field work, experimental work and analytical works address the relationships that exist between management information systems and accounting. The meta theory model starts with a task focus and also suggests a process that matches between task and the alternatives for system design and various levels of analysis. It also suggests contingency factors, organizational factors and technological factors have an influence on the aspect of task performance.

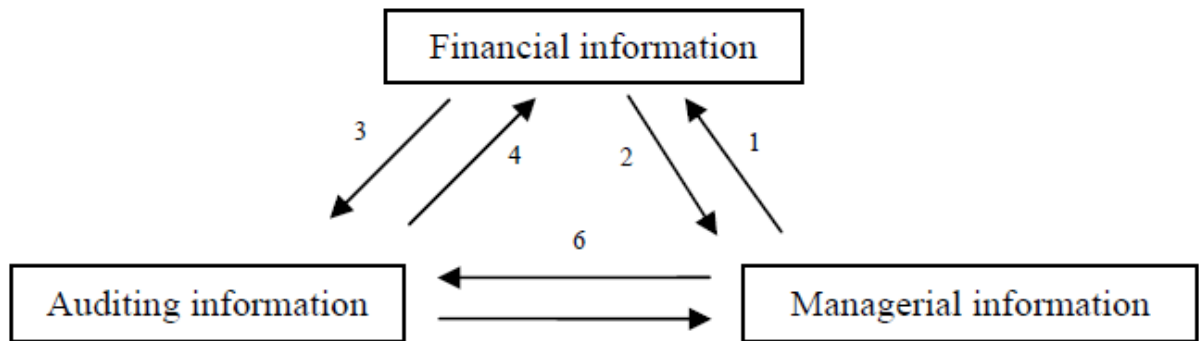
2.2.2 Contingency Theory

There are various alternative theories that have been put forward for the purposes of accounting on information systems. According to Macintosh (1981), there is a new IT theory that embraces the concept of macro organizations, technology and the human information processing systems. Earlier on, the contingency theory and possible relationship of the context, control of the organization and structures of accounting. Widener (2004) and Gerdin and Greve (2004) looked into the various forms of contingency.

Traditionally, accounting has served as the major supplier of information for decision-making. Bedford (1961), Simon (1954) and Sathe (1978), in their study of centralization versus decentralization discussed the need for an accounting system to consider the

decision making process. Caplan (1966) and several other authors have discussed the need to consider the relationship between the decision making process and accounting system. Caplan (1966) defined the management accounting process as an information system whose major purposes are (i) to provide the various levels of management with data which will facilitate the decision-making function of planning and control and (ii) to serve as communication medium within the organization.

The contingency theory has been used for identification, analysis and the evaluation of the factors that affect the design of accounting information systems and financial information systems. The conceptual framework has been coined to explore how management accounting relates with the features of the organization. The conceptual model has been depicted below: -



Conceptual model by Hikmat A. Alrawi and Suja Sarah Thomas.

The outer arrows depict movement of accounting information from various components in the framework. The various components relate in the following ways; - Arrow 1 shows the financial information reporting systems requirements from the perspective of management accounting. Arrow 2 shows how financial management accounting

encounters the function of management accounting. Arrow 3 shows the requirements of reporting systems of financial accounting by the function of auditing. The fourth arrow reflects financial information reporting encounter in the view of the auditing department. Arrow five is management accounting information from the department of auditing and arrow 6 is the encounter of audit system of information from the department of management accounting.

The broadness of the information requirement is required and is based on proposals and plans and usage to reflect the absorption of the required information. In this realm, usage becomes a subset of the requirements. The requirement and the usage of information have a gap that signifies the difference between the requirements that are stipulated and the actual information that has been received.

2.2.3 IT on Accounting

Since the early days of modern information technology, many people have suggested that IT will have a profound effect on the accounting profession. Elliot (1992, 61), in his article, "Accounting Horizons", claimed that "Information Technology is changing everything". Elliot (1992) uses the third wave imagery to predict the impending and significant changes in accounting practice, education and research.

2.3 Review of Empirical Studies

In a research by Kimwele in 2011, he found out that the level of awareness by employees of the Government ministries was 100%. He also found out that 70% of the departments

used IFMIS. 73% of the respondents to the research questions said that there was sabotage of IFMIS. 37% of the respondents said that IFMIS supported proper planning of work. There is a great percentage of abuse of the system but IFMIS offers security to personal data (Kimwele, 2011). In his research, Kimwele put forward several factors which are important in IFMIS implementation.

2.3.1 Capacity and Technical Skills

In Kenya, the experience of the design, development and pilot implementation of the IFMIS has not been satisfying. In the design of IFMIS, the existing manual budget execution and accountability processes seem to have been automated to a large extent without consideration of whether there was a better and more efficient method of achieving the required results (Kinyeki, Mutai and Ngungu, 1996).

The Government of Kenya has experienced problems with the new managers hired by the Government. The overarching concern being local capacity and no how has always been and is still the major issue. A fast review of the system conducted by the AG in Kenya with the help of an outside expert in July 2004, revealed a number of problems with the functionality of the system resulting into the delay of the roll out. In general the implementation phase has not progressed well primarily because of clearly limited involvement and some neglect of the system by the main players including the ministry of finance, accountant general and pilot ministries. There is need that introduction of an IFMIS be accompanied by strong commitments, sufficient manpower and financial resources, widespread internal support and an agenda for effective change management

(World Bank, 1994). The conclusion from the World Bank and Department for International Development, indicate that only 21% of IFMIS projects were successful and that out of the 21% successful only 6% of the projects were considered sustainable (Dorotinsky, 2003).

2.3.2 Complexity of the System

In its main report on the 2004 Country Intergrated Financial Assessment, The World Bank commented that, “The IFMIS is highly complex, sophisticated and expensive. Having chosen this route, the Government of Kenya must overcome a number of major challenges to fully realize the benefits of the system while ensuring the security is not compromised. From an accounting financial reporting perspective failure to address specific issues relating to the sustainability, functionality and extension of the system are liable to result in higher rather than lower levels of fiduciary risk”. Further the associated country financial accountability assessment reported the following risk: “should the IFMIS fail there is no current back up at the moment other than the continued use of existing systems in parallel” (GAO, 2004).

2.3.3 Motivation of the work force

Diamond and Khemani (1999) in a World Bank study on the introduction of IFMIS in five countries recommended that: “careful evaluation of the salaries and package for the relevant staffing both public and private sector should be done including an assessment of the implications of improved salaries for the broader public sector environment. Such a strategy would aim at striking balance between the need to attract/retain qualified staff”.

In a research conducted by Mobegi 2009, he found out that 61% of the ministry staff believed that implementation of IFMIS was way behind schedule while 33% believed that it was on course. 3% believed that IFMIS was successful while 11% believed that it was not successful. 52% believed that transparency had been achieved while 62% believe that IFMIS had improved economic governance. 47% believed that it had reduced corruption while 78% believed that IFMIS provided sufficient information for decision making. IFMIS has been implemented in various countries, some of which have failed and others have succeeded. These cases can be used to show what can be changed and manners in how the systems can be improved. This part of the paper will look at various countries as case examples.

2.3.4 The case of Slovak Republic

IFMIS has been a success in the Slovak Republic. The main driving force in the success was the political will though it was underpinned by some clearly defined timeframe and strategy. Some clear comprehension of what was required by the government and the other institutions turned out to be clear examples of what was required as well as a clear cut definition of the tools that needed to be made use of. This system was defined, tested, configured and then switched on in a timely manner at the start of the fiscal year. The result of this system in its basic form was enough to pay for the money invested in less than a year of operation. In determining the effectiveness of the system, there was a need to do need assessment. This was important to establish the functions of the new IFMIS for the countries minis try of finance that was also to serve in other organizations that were related to the government in a feasible manner. The requirements of the system

included; the system ought to function like a bank for all the destined users, the system should have functionality that manages budgets, records transactions and manages financial resources, the framework of accounting to be used was to be IAS, currently IFRS.

The system architecture for the Slovak republic is depicted in the diagram below: -

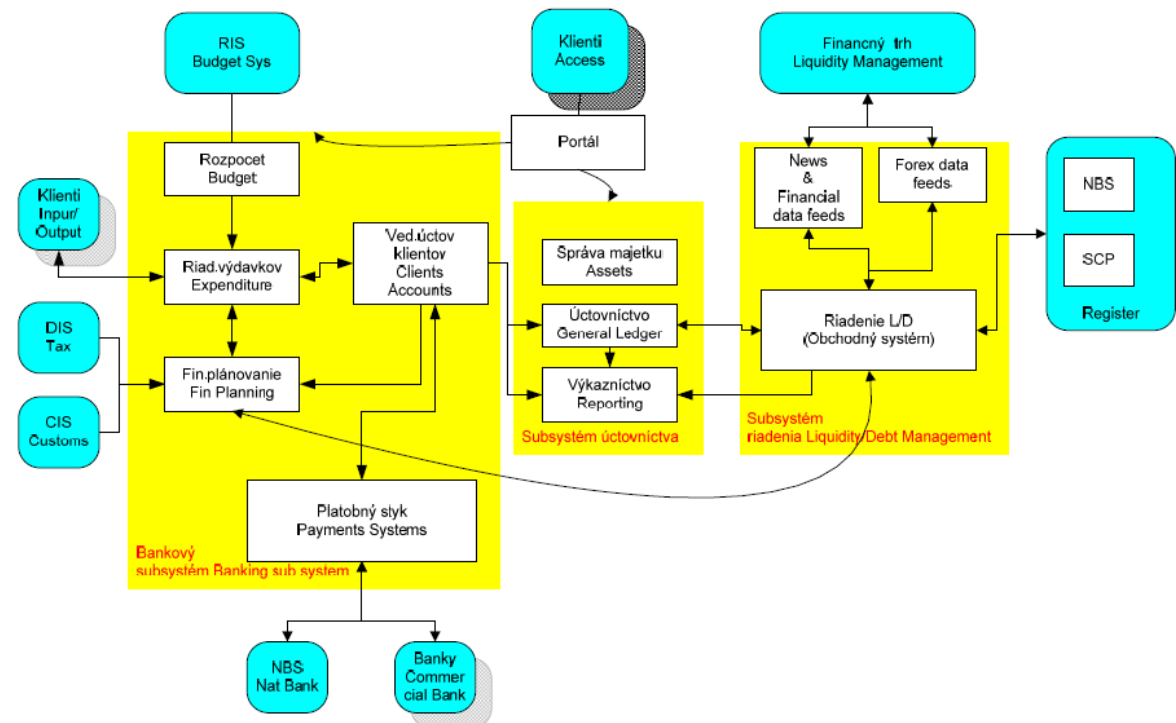


Diagram by Louis Berger Group and Development Alternatives inc.

The Slovak IFMIS was a major achievement given the political climate as well. The implementation process endured a change in government, but the process was not derailed because the elected Assembly (Parliament) was committed to a new system and forced the hand of the bureaucracy.

2.3.5 The case of Malawi

There has been a series of reforms in the legal and institutional framework for management of public finances in Malawi. This system has undergone quite some reforms since the first elections in 1994. The process of incorporating a sound system was spearheaded by sound legislations that regulated finances, audits, and procurements which were in time for the Malawi budget process. There are various studies that have indicated that the IFMIS system in Malawi was a success and relatively well designed.

In principle, it provides a good starting point for a sound management of public finances (Rakner et al. 2004). For example, the World Bank's 2003 Country Financial Accountability Assessment for Malawi states: "When compared to most developing countries, Malawi has a good legal and institutional framework for public sector financial management and accountability." (World Bank 2003). Therefore, one could expect that the formal legal and institutional PFM framework in Malawi should provide in principle for effective fiscal and expenditure planning, budget preparation, execution, and control in line with the priorities set in the Malawi Poverty Reduction Strategy Paper (MPRSP).

2.3.6 The case of Uganda

Uganda is a successful case of the implementation of the IFMIS system. There was an initial implementation of this system that was never to be. The most recent started in 2002 and was set up with joint World Bank financing. The system, which is based on an Oracle Financials platform, is a good system though it has some design issues that require a system migration. In the Ugandan case, the main problem lies in the Chart of Accounts (CoA). The Government signed off on the CoA and the system was configured, only to

discover several months later that there were several deficiencies in the design of the CoA fields—a discovery that led to months of delays and considerable cost overruns. Most CoA's have this limitation: Once the structure is created, it is very difficult and costly to change.

This problem could have been easily avoided, but once the CoA was approved and the software configured it was too late. The problem was discussed but the cost involved for a rebuild of the system would have added more than US\$6 million to the project cost. This would have meant going back to the World Bank to negotiate an increase in funding. Rather than go back to the donor, the system was put into operation with the defects unaltered. The Uganda IFMIS has limped along ever since, under performing its potential, with patches and workarounds that only serve to decrease the efficiency of what could have been an excellent system. Some of the other problems encountered in Uganda were common to other world systems and included; inadequate planning, poor communication between the implementing parties, the donors and the government, little management capacity and resources, changes in the design documents of the system, poor implementation in trainings and unnecessary budgets.

2.4 Summary of Literature Review

A well Integrated Financial Management Information System will support government wide as well as agency level policy decisions. It will also integrate budget and budget execution data, allowing greater financial control and reducing opportunities for discretion in the use of public funds. This system will provide information for budget

planning, analysis and government wide reporting. It will also facilitate preparation of financial statements and provide a complete audit trail in order to facilitate audits.

The above studies provide an important aspect regarding IFMIS and its components. They also provide results and conclusions of research done on IFMIS in different countries and environments. None of the studies have tackled effects of IFMIS on the financial management of the public sector in Kenya. It is against this backdrop that this research will seek to fill the existing gap by seeking to establish the level of success of IFMIS in financial management in the public sector in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology consists of six parts. The first part focuses on the research design of the study. The second part highlights the population of the study. The third part looks at the target population followed by the method that will be used to collect data and lastly, the manner in which the data was analyzed.

3.2 Research Design

There is a requirement of a formal IFMIS plan for orientation of new employees. This plan is involved in activating the plan and, performing different system operations. Orientation material is considered necessary in IFMIS sectors and the employee's welfare. Comprehensive crisis operations plans are also necessary both before and after a system failure. Backup resource arrangements are the initial and the most significant activity in creating a realistic IFMIS. It takes into account arrangement of backup resources and data for use after a system failure. Many data centres with online applications mostly use commercial backup centres or use dual data centre's architecture. Information system users and those who use manual processing require a backup space and resources.

This chapter gives a presentation of a combination of methods, tools and techniques that was used to carry out this study. The chapter is inclusive of elements such as research

design, sampling framework and technique, scope, Problem Statement and description, research methodology, concepts and terms clarification, data collection and recording, research analysis, Sampling Technique, ethical considerations, usage of the research and recommendations. In general form, a combination of all of the above outlined methods should be applied in providing adequate information and baseline for which to base the IFMIS research.

3.3 Population of the study

According to Cooper and Schindler (2003), a population element is the subject such as a person, organization, customer database, or the amount of qualitative data on which measurement is being taken. The target population for this study was 42 government ministries that use IFMIS in Kenya. Out of the 42 ministries a sample of 30 ministries was chosen. Therefore 30 accountants were involved in the study. A simple random sampling technique was employed in the selection of the study population. Rosco (1975) proposed a rule of thumb of 30 and 500 as the appropriate sample size for most researches.

3.4 Data Collection

The study relied on both primary and secondary data. The primary data was collected using questionnaires. They contained semi structured questionnaires (Appendix 1) which were administered to IFMIS users personally to shorten the response time and enable on the spot clarification of any doubt the respondents had regarding any questions. Secondary data was obtained from IFMIS implementation review report, economic

survey and statistical abstract books. Likert scale was used in the questionnaires where: 1 – strongly agree, 2 – agree, 3 – disagree and 4 – strongly disagree.

3.5 Data Analysis and Reporting

Anderson and Pole (2001) postulates that once data has been collected, the researcher must be able to interpret it reliably. The process involves summarizing and categorizing the data to a temporary manageable length, identify themes, analyze and assess. Data for the study was analyzed in several stages. The unit root test for nominated variables was established. The summary of regression coefficients for the period before and after was established to improve on the presentation. Completed questionnaires were edited for completeness and consistency. The data was then coded and checked for any errors and omissions. The response from the questionnaires was listed to obtain proportions appropriately. The closed questions, tables analysis was done to improve the presentation of the analyzed results for ease of interpretation.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

Qualitative and quantitative data from both primary and secondary sources was collected. The number of respondents who participated in this survey totaled to 42 one from each of the ministries. The first part involved analysis of the secondary data collected. The second part involved descriptive statistics from primary data to identify the effect of integrated financial management information systems on the financial management of public sector in Kenya based on the respondents' views.

4.2 Secondary Data Analysis

Unit Root Tests

The results of the unit root tests for the nominated variables for before and after IFMIS have been summarized in tables 1 and 2.

Table 4.1: Unit root test for before IFMIS

Variable	ERS	Critical	ADF	Critical
Government Transfers	10.1465	5.7620*	-6.4990	3.1800***
Purchasing Power Parity Conversion rate	9.7662	5.7620*	-4.5445	-2.7862**
Population	5.9532	5.7620*	-5.2252	3.1900**
Government investments	15.2313	5.7620*	-5.1155	-2.9863**
Gross Domestic Product per capita	13.3452	5.7620*	-4.4606	3.1800**
Government Expenditure	8.6974	5.7620*	-5.8652	-2.9864**
Inflation	5.6892	4.2200**	-4.5415	3.1800***
Government Revenue	13.682	5.7620*	-7.8408	3.1800**
Exports	4.7735	2.8700*	-6.4675	3.1800**

Note: *denotes stationarity at the level , **denotes stationarity at 1st difference while

***denotes stationary at 2nd difference

ERS test critical values are reported at 5% except inflation which is at 1%

ADF test critical values are also tested at 5%. Differences in ADF values resulted from sample adjustments by the E-views 6sv software based on Mackinnon (1996) one-sided p-values.

Table4.2: Unit root test for after IFMIS

Variable	ERS	Critical	ADF	Critical
Government Transfers	6.7812	5.7200*	-5.4693	3.5950***
Purchasing Power Parity Conversion rate	6.3252	5.7200*	-7.5256	-3.6032**
Population	28.4470	5.7200*	-4.2597	-3.6122**
Government investments	11.2313	5.7200*	-5.1155	-2.9863*8
Gross Domestic Product per capita	13.3452	5.76200*	-4.4606	3.1800**
Government Expenditure	28.8465	5.7200*	-4.8652	-2.9864**
Inflation	4.7703	4.2200**	-3.8520	3.60320***
Government Revenue	11.2882	5.72200*	-5.2007	3.6032***
Exports	12.8826	5.7200*	-5.5594	3.1800**

Note: *denotes stationarity at the level , **denotes stationarity at 1st difference while ***denotes stationary at 2nd difference

ERS test critical values are reported at 5% except inflation which is at 1%

ADF test critical values are also tested at 5%. Differences in ADF values resulted from sample adjustments by the Eviews 6sv software based on Mackinnon (1996) one-sided p-values.

From the results of the ERS Point Optimal test, all the nominated variables attained stationarity at the level for the periods except inflation which also attained stationarity at 1st difference which makes it unnecessary to test for cointegration. These results also confirm the authenticity of the regression results and rules out the existence of spurious regression.

Table 4.3: Comparative result of the F-Test for the two periods

Period	DF	Calculated	Critical	Significance	
Before IFMIS	23	455.592	2.60	5%	
After IFMIS	23	686.821	2.60	5%	

The result here shows that after IFMIS is also slightly better than before IFMIS with a calculated F-value of 686.818 as against before IFMIS's 455.592 at 5 percent level of significance. Now with this conclusion we examined the result of the global statistics with reference to the relationship between public sector financial management and economic development in the two periods.

Table 4.4: Global Statistics Summary for after IFMIS and before IFMIS

Result/Parameters periods	R	R ²	AR ²	F	S ¹ kg
Before IFMIS	0.998	0.996	0.994	455.592	0.000
After IFMIS	0.999	0.997	0.996	689.818	0.000

From the table, R² for before IFMIS is 0.996 and Adjusted R² is 0.994 with F_{0.000} = 455.592. For after IFMIS it is 0.997 and 0.996 for R² and AdjR² respectively with F_{0.000} = 689.818. We can therefore reject the hypothesis that there is no significant difference between before IFMIS and after IFMIS. The values for F-Tests for the two periods indicates that the models are highly significant and can be used to describe the phenomena under study, consequently it can also be relied upon to explain the impact of

IFMIS on public sector financial management. A summary of the Regression Coefficients for these selected periods is presented in Table 5.

Table 4.5: Summary of the Regression Coefficients for the two periods

	bi-bo		b1	b2	b3	b4	b5	b6	b7	b8	b9	E
before IFMIS	Est	-67.27	-0.026	-0.038	0.364	0.014	-0.583	0.719	0.755	0.854	0.000	59.6
	See	22.01	0.030	0.03	0.10	0.36	0.20	0.25	0.01	3.54	0.240	
F*455.592	T*	-3.06	-0.87	-1.11	-1.27	0.50	-2.84	-2.85	14.13	5.74	0.01	3
after IFMIS	Est	-6.51	0.02	-0.01	-0.25	0.48	-0.06	0.08	1.22	0.03	-0.03	3.53
	See	2.56	0.001	0.001	1.14	0.23	0.034	0.005	0.00	0.05	0.13	
F*689.82	T*	-2.54	1.10	-0.32	-2.75	4.59	-0.15	0.20	29.10	1.85	-0.98	9

The resulting models for each period are as follows:

Before IFMIS $GDP = -67.27 - 0.026 \text{Government Revenue} - 0.038 \text{Government Expenditure} - 0.364 \text{exports} + 0.014 \text{Population} - 0.583 \text{Inflation} + 0.719 \text{Purchasing Power Parity Conversion rate} + 0.755 \text{Gross Domestic Product per capita} + 0.854 \text{Government Transfers} + 0.000 \text{Government investments}$

After IFMIS $GDP = -6.51 - 0.02 \text{Government Revenue} - 0.01 \text{Government Expenditure} - 0.25 \text{exports} + 0.48 \text{Population} - 0.06 \text{Inflation} + 0.08 \text{Purchasing Power Parity Conversion rate} + 1.22 \text{Gross Domestic Product per capita} + 0.03 \text{Government Transfers} - 0.03 \text{Government investments.}$

After IFMIS the public sector performed better than before IFMIS in many respects. From the models, it is also evident that government revenue and expenditure have the wrong signs in both periods under study. In other words these variables contribute negatively to the growth of the GDP which agrees with Freikman(2008) and Fyson (2009). Also inflation seem to exert a negative influence on the growth of the GDP in both periods.

NLS/ Arma Regression for before IFMIS and after IFMIS

We conducted the NLS/ARMA regression for some nominated variables for after IFMIS and before IFMIS using the EVIEWS 6.sv software for the confirmation of our results and the resulting models are as follows:

After IFMIS $GDP=38.83+0.32\text{government expenditure}+0.12 \text{ Purchasing Power Parity Conversion rate} +0.01\text{export}+0.29\text{government revenue}-0.07\text{inflation}+0.30\text{government investment}-0.02\text{population}$

Before IFMIS $GDP= -74.98+0.03 \text{ Purchasing Power Parity Conversion rate} +0.01\text{export}+0.08\text{government revenue}-0.19\text{inflation}+0.054\text{government investment} +0.02\text{population}$

Table 4.6: Global statistics and Criteria

Period	R ²	AR ²	F	LL	AIC	HQC	SC
After IFMIS	0.885	0.843	21.006(0.000)	-66.34	5.135	5.249	5.519
Before IFMIS	0.792	0.730	56.640(0.000)	-56.64	4.787	4.900	5.170

Using the traditional F-statistic the models here show overall significant explanatory powers for both periods namely $F_{0.00}=21.006$ for after IFMIS and $F_{0.00} =56.64$ for before IFMIS.

The AR^2 for after IFMIS is 0.843 which indicates that the explanatory variables have the capacity to explain the changes in the GDP of after IFMIS to the tune of 84%, for before IFMIS it explains 73%. All the criterion, Log-Likelyhood(LL), Akaike Information (AIC), Hannan-Quinn (HQC), Schwartz (SBC) confirms the high explanatory powers of our model. It is interesting to note that here again, government expenditure, government revenue and inflation all have negative signs for both after IFMIS and before IFMIS thereby confirming the earlier results, t-statistics is -2.03 for before IFMIS and -2.07 for after IFMIS. These results agree with Landan (1986) and Easterly (1992). We therefore conclude here that these three variables are negatively associated with economic growth and GDP in Kenya.

Results of the Log-Log Model

Table 7 presents the results of the Log-Log model for effective analysis of the incremental GDP growth for the periods under study.

Table 4.7: Incremental GDP Growth For The two periods

Period	DF	F-value	Sig	b0	b1
before IFMIS	8	3.39	0.029	-43.668	0.0238
after IFMIS	8	4.70	0.040	52.8403	-0.0225

The results above are consistent with the global statistics presented in tables 3 and 4 and tables 5 and 6. However, it would appear that after IFMIS is surprisingly better than before IFMIS with F-value $F_{0.04} = 4.70$ as against after IFMIS's $F_{0.029} = 3.39$. The implication of the global statistics here is that the GDP growth in developing countries are epileptic with an almost insignificant degree of annual incrementals.

With the above results we computed the GINI Index for these periods and the result is as shown in Table 8. Our computation compares favourably with earlier computed GINI indexes by CIA and UN.

Table 4.8: A comparative result of computed GINI indexes for the two periods

Period	Research Result	CIA (USA)	United Nations (UN)
before IFMIS	0.464	50.6%	43.7%
after IFMIS	0.320	30%	40.3%

Source: UN GINI Index, CIA GINI Index, Research Result.

The significance of these results as presented in Table 8 will be better appreciated when we recall the properties of the Gini Index and its principles. First is the Anonymity principle which simply posts that it does not matter who the high and low income earners are, as well as the principle of Scale Independence which posts that the size of the economy does not affect the calculations whether rich, poor, advanced or underdeveloped. The concept of population independence in the GINI index interpretation also connotes that the size of the population does not matter and finally the Transfer Principle which posits that if income (less than the difference) is transferred from a rich person to a poor one the resulting distribution is more equal.

4.3 Primary Data Analysis

A respondent from each ministry was presented with a set of questions about effect of IFMIS in financial management of the public sector. 95% of the respondents reported that their jobs involved the use of IFMIS as compared to 5% whose jobs did not involve IFMIS. 58% of the respondents said that finance was their first appointment in IFMIS functional areas with 18% in information technology and the least (5%) in human resources. Half of the respondents rated use of IFMIS within their ministries as excellent while another 30% rated it as very good. However, 3% of the respondents rated the use of IFMIS within their ministries as poor.

Table 4. 9: Use of IFMIS

	Frequency	Percentage
Does your job involve the use of IFMIS		
Yes	38	95%
No	2	5%
In what functional area of IFMIS was your first appointment		
Human resources	2	5%
Marketing	5	13%
Finance	23	58%
Information technology	7	18%
Operation management	3	8%
How do you rate IFMIS currently in the use within the ministry		
Excellent	20	50%
Very good	12	30%
Good	7	18%
Poor	1	3%
Very poor	0	0%

Respondents were asked to state the number of years since their last quality review of the IFMIS which resulted to a mean of 2.20 years and 1.368 standard deviation. Respondents were also asked to rate the success of IFMIS in the financial management of public sector where IFMIS scored an average success of 8.34 out of 10 points.

Table 4.10: IFMIS review

Factor	Mean	Standard Deviation
What is the number of years since your last quality review of the IFMIS	2.20	1.368
On a scale of 1-10 how would you rate the success of IFMIS in the financial management of a public sector	8.34	0.482

Respondents were presented with a number of statements to gauge the effectiveness of IFMIS in the financial management of the public sector. A 4 point likert scale was used for each statement which had options ranging from 4-“strongly agree”, 3-“agree”, 2-“disagree” and 1-“strongly disagree”. The average score for each statement was calculated and the results presented in the table 11.

From the results use of IFMIS scored a grand mean of 3.17 which proved its wide and acceptable application among the ministries. Use of IFMIS major successes included: shortening the period for preparation of financial statements, efficient allocation of resources, justifiable expenditure, reduction of wastage of government resources and given a complete audit trail to facilitate in audits with mean scores of 3.71, 3.29, 3.2, 3.15

and 3.15 respectively. However, IFMIS success in Kenya and sustainability after donors exit scored lowly at 2.73 and 3.00 respectively.

Table 4.11: Effect of IFMIS in Financial Management of Public Sector

Respondents' opinion	Mean	Std. Deviation
Is the expenditure on IFMIS justified	3.2	0.749
IFMIS led to efficient allocation of resources	3.29	0.461
IFMIS shortened the period for preparation of financial statements	3.71	0.461
IFMIS led to reduction of wastage of government resources	3.15	0.358
IFMIS has given a complete audit trail to facilitate in audits	3.15	0.654
IFMIS has succeeded in Kenya	2.73	0.449
IFMIS can be self sustainable even after donors exit	3	0.548
Grand Mean	3.17	

4.4 Discussion

This cross-sectional survey investigated the effect of integrated financial management information systems on financial management of public sector in Kenya for a period of 10 years (1997-2000 and 2007 - 2010). The study employed the OLS method to examine the relationship between nominated macroeconomic variables which are proxies to public sector financial management and IFMIS.

The governments have consistently failed in the management of Inflation, Government expenditure and Government revenue. There was also the issue of investments which though had the right sign but with almost an insignificant positive value in the two

periods. After IFMIS public sector appear to perform better than before IFMIS in these respects and also better in terms of the contributions of government revenue and government expenditure. Expectedly Gross Domestic Product Per Capita (GDPPC) had the highest contribution and also with the right sign. We used the log-log model to establish the trend of incremental growth for the periods under study and found a very disturbing trend for the economy under study.

Our computation of the GINI Index placed the period before IFMIS below the period after IFMIS which indicated the state of income distribution, human development and standard of living in Kenya. These results agree with the numbers representing the state of economic development of the economy under study for the two periods as computed by international organizations.

From this study, it is clear that there is a significant difference existing in public sector financial management in period before IFMIS and after IFMIS. We can also conclude here that the persistent underdevelopment of the economies of sub-Saharan Africa can be explained by public sector financial management failure.

From the results of the study, it is recommended that the governments of Kenya should pay more attention to the management of inflation, management of government revenue and government expenditure. These three variables seem to constitute the three most causal factors of persistent underdevelopment.

CHAPTER FIVE

SUMMARY OF RESEARCH FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a brief summary of the research findings, conclusion and recommendation.

5.2 Summary

In most developing countries, budget execution and accounting processes were/are either manual or supported by very old and inadequately maintained software applications. This has had deleterious effects on the functioning of their public expenditure management (PEM), systems that are often not adequately appreciated. The consequent lack of reliable and timely revenue and expenditure data for budget planning, monitoring, expenditure control, and reporting has negatively impacted budget management. The results have been a poorly controlled commitment of government resources, often resulting in a large buildup of arrears; excessive borrowing, pushing up interest rates and crowding out private sector investment; and misallocation of resources, undermining the effectiveness and efficiency of service delivery.

Further, governments have found it difficult to provide an accurate, complete, and transparent account of their financial position to Parliament or to other interested parties, including donors and the general public. This lack of information has hindered

transparency and the enforcement of accountability in government, and has only contributed to the perceived governance problems in many of these countries.

In light of these adverse developments, it is perhaps not surprising that many developing countries have pressed for, or have been pressed into, adopting integrated financial management information system (IFMIS) projects to strengthen their PEM systems. The establishment of an IFMIS has consequently become an important benchmark for the country's budget reform agenda, often regarded as a precondition for achieving effective management of the budgetary resources. The surveys result show that IFMIS has improved financial management of public sector in Kenya. Although it is not a panacea, the benefits of an IFMIS could be argued to be pro-found. First, the improved recording and processing of government financial transactions could have allowed prompt and efficient access to reliable financial data. This could have supported the enhanced transparency and accountability of the executive to Parliament, the general public, and other external agencies.

Second, an IFMIS has been observed to strengthen financial controls, facilitating a full and updated picture of commitments and expenditure on a continuous basis. Once a commitment is made, the system should be able to trace all the stages of the transaction processing from budget releases, commitment, purchase, payment request, reconciliation of bank statements, and accounting of expenditure. This could have allowed a comprehensive picture of budget execution.

Third, IFMIS can be said to have provided the information to ensure improved efficiency and effectiveness of government financial management as reported by most of the respondents. The benefits of the IFMIS have been extensive, with the restoration of expenditure control and improved levels of transparency and accountability. The commitment control system could have led to the elimination of overspending, and a substantial reduction in domestic arrears. A number of government bank accounts have been reduced to treasury single accounts maintained at the central bank, and the lag in reconciliation with banking data has been reduced from up to two years to automatic reconciliation on a daily basis. Comprehensive and fully reconciled fiscal data and reports are available on a continuous basis.

The design and functionality of government IFMIS is critically different from that of private enterprise systems. Because governments are not driven by profit but rather by measures of accountability, financial management information systems for government must be designed to ensure compliance with budget laws, other public finance rules and restrictions, and an entirely different set of accounting rules and reporting requirements. Moreover, they must also be designed to support a multitude of distinctly public sector-oriented functions and organizational arrangements. Governments big and small undertake a vast number of transactions on an ongoing basis, requiring powerful, resilient, dependable systems to handle the information flows. These systems must be able to handle and communicate all the financial movements for the complex structure made up of line ministries, spending agencies, regional and local governments as well as other government clients. From the results of the survey, respondents from various

ministry argued that the IFMIS expenditure was justified and its use greatly reduced government expenditure.

Since 1997, the government of Kenya has been implementing a project for the “strengthening of government finance and accounting functions” to improve financial management, accountability, and transparency of public funds. This could have led to the unanimous agreement among the respondents that the expenditure on IFMIS is justifiable. Most important, the project management needs to be strengthened to ensure strategic direction, leadership, and communication.

The above review of past experience in introducing an IFMIS in Kenya gives some guidance on the key issues to be addressed, and also highlights some risks that should be avoided. The following issues, in particular, that have contributed to the limited success of IFMIS projects may be worth noting in the Kenya context. Public expenditure management in developing countries is often segmented institutionally on vertical rather than horizontal lines. For example, even when the ministry of finance has been given clear leadership, in Anglophone Africa it is not immediately clear who should be in charge of an IFMIS project – the ministry of finance proper, in charge of budget management, or the accountant general’s department (typically institutionally separated), in charge of government accounting. Both bodies could be considered as sharing a central role in the development and running of the new IFMIS. The accountant general has significant regulatory and control functions, while the budget department has the dominant role in resource allocation.

Although it could be recommended that these two bodies be nominated as joint owners of the new IFMIS to ensure balanced requirements for the system, at the same time joint ownership may involve a loss in accountability and real ownership of the system. To counter this it is important to get support for and commitment to the project at the highest level, say the minister of finance or his/her deputy. This is important not only to resolve the identified “ownership” problems, but in developing countries to signal authority to push through government-wide reforms in the face of strong ministries that may feel threatened by the level of transparency that an IFMIS imposes on them.

The experience of advanced countries is that managing complex IFMIS projects requires considerable management skill. However, this is typically in short supply in developing countries. Senior managers in developing countries rarely delegate responsibility and frequently are overloaded with work. Moreover, top managers may not be computer literate. The consequence is that often the binding constraint when introducing IFMISs is not the technical capacity to create them but the capacity to manage them. Nor is it clear that there is always a good alignment in the incentive structure facing managers. Bugler and Bretschneider (1993), from the experience of IT reforms in state and local governments in the United States, concluded that the reforms were most likely to succeed if they have the following features: they are easy to use by the manager; they address an external reporting requirement by the manager; and they are confined to the manager’s area of concern.

These requirements are hard to attain in a developing country, where top managers lack experience in computerised accounting and are therefore unable to grasp its possibilities for financial management. In developing countries in the absence of computer literacy there is a tendency to leave the system development to the computer supplier, with minimal user involvement. In such an environment there is a likelihood that systems will not be user friendly, will not match the needs of the managers, and will not have a required level of management ownership.

To get IFMIS reforms accepted, decision makers must first be sold the idea that the benefits exceed risk. However, officials tend to be risk averse – introducing computer technology is an innovation that is perceived as risky. It is complex, it demands skilled staff, and it needs procedural changes. There is plenty of evidence of past failure. At the same time, in developing countries the IT is usually introduced by expatriates, so there is room for distrust, even hostility. Second, decision makers must be convinced it is needed, i.e. that a problem exists and, therefore, needs to be addressed.

Basing a reform on conditions imposed by donors, as has sometimes been the case in Africa, does not increase success. Third, decision makers should recognise the urgency of the reform or the need for prompt implementation – often this perception is lacking at the top. Fourth, managers may steer away from difficult personnel issues. Almost inevitably, moving from manual systems to an IFMIS allows government to fulfill the same function with fewer staff. To operate the new system will also typically require different types of skill. However, in most developing countries managers in government cannot reduce staff

and are severely limited in their capacity to change them. In such situations IT is not necessarily seen as a benefit to management; if anything, from a human resource viewpoint it could make their task greater and more complex.

It is also important to ensure that measures are taken for the project to be sustainable. It should be recognized that there are recurrent costs associated with the maintenance and operation of major IFMISs that must be covered in budgets and that often are not considered. However, perhaps a greater constraint on sustainability arises from inadequate human resources. To overcome this constraint may require a major training program, which again will take time, but may not necessarily deliver the pay-off anticipated.

In most developing countries there is a general shortage of skilled labour, and efforts to improve skills in government are often frustrated by the migration of labour to the private sector for higher pay when workers have acquired sufficient skills. Is it necessary to get the pay structure right before embarking on such a training program? This consideration is particularly important for in-house IT capacity, and is a concern faced by developed and developing countries alike. While most IFMIS tenders specify a requirement for the vendor to maintain the system for an initial period (usually up to three years), there is also a need for IT capacity in government. Expertise is required for interacting with vendors, to maintain the system and to have adequate data management skills to optimize the system once established.

Often this is insufficient to provide the required service to users. Faced with the poor pay scales mentioned previously, one solution is simply to pay retention bonuses to IT staff, another is to outsource the management of IT to a local firm, and yet another is to establish a dedicated government unit to provide IT services to the public sector that allows higher salaries than the average in the public sector. None of these solutions is without problems, which tend to be exacerbated in the developing country context, where there is often a lack of competition in this area. Thus, while recognizing that IFMIS may be the medium-term solution to many PEM problems, it is likely to be important to first spend the time in the short run in creating a solid base for success.

5.3 Conclusion and Recommendations

There are several main conclusions emerging from this survey. First, the introduction of an IFMIS in a Kenya should be regarded as a component of a wider reform process. These projects, therefore, should not be viewed as isolated interventions, but should be accompanied by, and related to, other reforms in public sector financial management. It is also necessary that the IFMIS objectives and outputs are both relevant and consistent with wider fiscal policy reforms. The study has clearly shown that there is a positive relationship between IFMIS and Financial management in the public sector (mean rate of 3.17).

The study also sought to find out the level of use of IFMIS in the public sector in Kenya. It established that 95% of the ministries in Kenya currently make use of IFMIS.

Second, the use of IFMIS needs to be accompanied by strong commitment, sufficient manpower and financial resources, widespread internal support, and an agenda for effective change management. Unless these are in place, the chances of success are limited.

Third, the implementation strategy both in terms of functionality and number of entities needs to be phased. The benefits expected from the system develop only over time, and it will be necessary to maintain interim arrangements to facilitate various aspects of financial control and reporting. Country authorities should be prepared for a long implementation path, and one that involves significant challenges. It will be a complex learning process for all concerned. A number of difficulties are likely to be encountered en route, but the existence of the previously indicated three conditions, along with resolute commitment of key stakeholders, should overcome these difficulties and ensure success of this worthwhile reform.

As a tool of management, an IFMIS must be carefully designed to meet agencies' needs, or functional requirements. Often this original design phase is the most difficult part of an IFMIS project, and does not receive the attention it merits. The functional requirements document serves as the blueprint for later phases of the IFMIS project. It describes the accounting and financial management tasks the system must perform, the agency's information requirements, the operating environment, and a plan for developing any necessary programming.

5.4 Recommendations

Implementing complex IFMIS projects takes time. The steps in the project are well known: preparatory requirements analysis, system design, development and testing; procurement and installation; testing of the full system in the user environment, training and conversion. As indicated, it is also well known that the time required for the completion of each step is often grossly underestimated, especially in developing countries. In the past, there has been a tendency to tell top management what it wants to hear. This is reinforced by top managers' short political time horizon when judging reform payoffs. While this might be one reason for the underestimation of time required, additionally the inertia of development agency bureaucracies, coupled with delays inherent in the implementation of complex IT systems, are a disastrous combination. Moreover, owing to the human resource shortages faced by developing countries, it will take them much longer to introduce IT systems than in more advanced countries – experience suggests perhaps two to three times as long.

While most IFMIS tenders specify a requirement for the vendor to maintain the system for an initial period (usually up to three years), there is also a need for IT capacity in government. Expertise is required for interacting with vendors, to maintain the system and to have adequate data management skills to optimize the system once established.

It is recommended that the intervention identifies functional reform priorities based on an assessment of the weaknesses of the public financial system. All functions of the system need not be acquired all at once. The reform can start with core modules before introducing additional module such as human resources, debts and audits management.

Experience has shown that the most important area to be addressed is often the system of budget execution and expenditure management which tends to be complicated, non-transparent and labour-intensive. Tanzania for example has used a selective approach focusing on these priority areas.

The application of the IFMS requires a high overhead in training across all government ministries and at different levels of staffing. This training, and the basic computer literacy training that has to accompany it, has relied primarily on external funding. As a result training has had to be limited to key users. This calls for budgetary allocation of the same to increase computer literacy among the ministries' employees.

5.5 Limitations of the study

The researcher encountered a number of problems in the course of conducting this research. The problems included:

5.5.1 Time Constraint

The methods of data collection were both secondary and primary. The collection of secondary data involved extraction from economic surveys and statistical abstract books. The primary data collection on the other hand involved personal administration of questionnaires with accountants across ministries. Both of these methods required adequate time which was not available.

5.5.2 Budgetary Constraint

The researcher required funds for transport, stationary, typing and printing among other costs. This forced the researcher to use his personal savings.

5.5.3 Sample Selection

The sample of 30 ministries was selected to represent the population of 42 ministries. This restricted the study to the ministries headquarters in Nairobi. However, IFMIS has also been rolled out to other departments in the field offices outside Nairobi.

5.5.4 Cooperation

Some of the respondents were reluctant to give answers to the questions in the questionnaires. Some of the respondents thought that they were being investigated whether they were resisting effective implementation of the system.

5.6 Suggestions for Further Research

The study sought to find the effect of IFMIS on financial management in the public sector in Kenya. The study population involved the Government Ministries based in Nairobi. Further studies could be undertaken by involving other regions or departments in the country. The researcher obtained a sample composed of one officer directly involved in the use of IFMIS in each ministry. A more expanded scope whereby all cadre of staff are involved could form a basis for further research. The Ministry of Finance have carried out reengineering of the system. The results of this reengineering could possibly unearth other variables of significance hence a further research can be carried out to establish any new developments in the systems use.

REFERENCES

- Anderson, J. and Poole, M. (2001) *Assignment and Thesis Writing*, John Wiley and Sons: Melbourne.
- Audenhove, L.V., (2000). Information and Communication technology policy to Africa: A Critical Analysis of Rhetoric and Practice.
- Bedford, N. (1961). Emerging tools for Managerial Accounting. *N.A.A. Bulletin*, October, 31.
- Bugler, D.T. and S. Bretschneider (1993), “Technology Push or Program Pull: Interest in New Information Technologies within Public Organizations” in Barry Bozeman (ed.), *Public Management: The State of the Art*, Jossey-Bass, San Francisco.
- Casals and Associates (2004). “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, 2004.
- Caplan, E. (1966). Behavioral assumptions of management accounting. *Accounting Review*, 4, July, 409–508.
- Diamond, Jack and Pokar Khemani (2005), “Introducing Financial Management Information Systems in Developing Countries,” International Monetary Fund.
- Diamond, J & Khemani P. (1999). IFMIS in developing countries. IMF paper 6 October 1999.
- Dorotinsky, W. (2003). Implementing financial management system project: The World Bank experience preliminary results. The World Bank.

- Fyson, S. (2009) 'The Role of Consultants in Public Finance Management Reform ', E.U. Commission Report. June
- GOA (2004). Critical Factors in developing automated accounting and financial management systems. US Printing office.
- GoK (2001). Economic Survey. Government printer.
- Gok (2011) Economic Survey. Government printer.
- GoK/ KPMG (June 1997). A taskforce report on strengthening government finance and accounting functions. Government printer.
- Gorry, G. A., & Scott-Morton, M. S. (1971). A framework for management information systems. *Sloan Management Review*, 13, 55-70.
- Kimwele Joseph Musee (2011). *Factors affecting implementation of IFMIS in Government Ministries*. Unpublished MBA Thesis. Nairobi: University of Nairobi.
- Mobegi Henry Nyabuto (2009) *A survey of the extent of implementation of integrated financial management System (IFMIS) as a tool for in stainable financial management in Government*. Unpublished MBA Thesis. Nairobi: University of Nairobi.
- Rakner, L. et al.* (2004): The budget as theatre – the formal and informal institutional makings of the budget process in Malawi, Final Report, Bergen (Norwegen): Chr. Michelsen Institute, Mimeo.

Reneau, J. H., & Grabski, S. V. (1987). A review of research in computer-human interaction and individual differences within a model for research in accounting information systems. *Journal of Information Systems*, 2, 33-a53.

Ruchala, L and Mauldin E. (1999). "Towards a Meta Theory of Accounting Information Systems" *Accounting, Organizations and Society* 24 (1999) 317-331.

Simon, H. A. (1954). *Centralization vs. Decentralization In Organization The Controllership Department*. New York: Controllership Foundation.

World Bank (2003): Malawi Country Financial Accountability Assessment; online: <http://www.countryanalyticalword.net> (accessed: 15 Jan. 2005).

APPENDICES

Appendix A: Questionnaire

1. Does your job involve the use of IFMIS?

Yes No

2. In what functional area of IFMIS was your first appointment?

Human resources

Marketing

Finance

Information technology

Operations management

Other

(Please specify)

3. How do you rate IFMIS currently in use within the ministry on a scale of 1 to 5?

Excellent

1

Very good

2

Good

3

Poor

4

Very poor

5

4. What is the number of years since your last quality review of the IFMIS?

1

2

3

4

5

5. In a scale of 1 to 4 has the staff played a full role in the quality process of the system?

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

6. On a scale of 1 to 4 has IFMIS ensured security of data?

Interesting

Boring

7. On a scale of 1-10 how would you rate the success of IFMIS in the financial management of a public sector

1 2 3 4 5 6 7 8 9 10

7. In a scale of 1 to 4 is the expenditure on IFMIS justified

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

8. In a scale of 1 to 4 has IFMIS led to efficient allocation of resources?

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

9. In a scale of 1 to 4 has IFMIS shortened the period for preparation of financial statements?

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

10. In a scale of 1 to 4 has IFMIS led to reduction of wastage of government resources?

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

11. In a scale of 1 to 4 has IFMIS given a complete audit trail to facilitate in audits?

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4

12. In your own assessment indicate whether if IFMIS has succeeded in Kenya?

Very successful Successful Undecided
Unsuccessful Very Unsuccessful

13. If IFMIS can be self sustainable even after donors exit.

Strongly agree 1 Agree 2 Disagree 3 Strongly Disagree 4