

The Effectiveness of Integrated Financial Management Information System in Selected Government Ministries in Kenya: A Theoretical Review

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Abstract

The modern day challenge of organizations is to have in place information technology systems that can effectively service the needs of the organization, meet the rapid technological changes and be flexible to accommodate enhancements. The Integrated Financial Management Information System (IFMIS) is designed to improve systems for financial data recording, tracking and information management. This was in response to increasing demands for greater transparency and accountability in the management of the public's finances. However, the management of public finance has continued to be dogged with corruption allegation, outright mismanagement, malpractices in the procurement processes, among others. This study seeks to determine the effectiveness of IFMIS in selected government ministries in Kenya. The objectives of the study are to determine the effect of IFMIS on the processing of accounting transactions, establish the extent to which IFMIS has enhanced the procurement process, assess the extent to which IFMIS has enhanced the production of financial records for preparation of annual accounts and to find out whether IFMIS has enhanced the budget processes in government ministries in Kenya. This study will rely on theoretical models that provide a foundation for the research topic. Specifically, this study rely on Technology Acceptance model, Theory of Budgeting and the Cost reduction theory. The study reviews empirical evidence from which conclusions are drawn.

Key Words: *Integrated Financial Management Information System, IFMIS, Public Financial Management, Government Ministries*

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1. Introduction

Every state has basic functions for which it must raise resources (via tax and other means for example debt) and spend them in the delivery of the required services (Pretorius and Pretorius, 2011). The provision of basic services (health and education), security, infrastructure, and proper regulatory and facilitator frameworks. The manner in which the state raises money and spends the money is very critical (Andrews, 2010). It is this function of the government of collecting and spending public finances that is called Public Finance Management (PFM). The main concern of public financial management is how to efficiently and effectively utilize public resources to meet the needs of the community in an equitable manner (Dorotinsky, 2008). The key issues to be examined in assessing the quality of the budget process are degree of discipline, efficiency in revenue mobilization and extent of transparency, accountability and control in the

tax system (Dorotinsky, 2008). In this regard, PFM encompasses collection of revenues, allocation of funds through the budgetary process and utilization of public revenues, for instance through procurement of goods and services, but also internal and external auditing of public spending and performance of state institutions (Rosen, 2012).

According to Balzli and Morard (2012) governments around the world have been engaged in the process of implementing a wide range of (ICT) applications to improve their service delivery to their citizens. Countries have been classified by the United Nations according to their Computer Industry Development Potential (CIPD) as advanced or less developed (Musee, 2011). Advanced include for example, the United States, Canada, West European countries and Japan; less developed include for example Argentina, Brazil, India, Mexico, Kenya and Bulgaria. The government of Kenya has for a long time been very much concerned over the persistent poor performance in financial management due to lack of reliable and timely information for decision making. A review by the Department of Accountant General at Treasury- Financial management, Accounting systems and Role of audits (*KPMG/ Accountants General Report; June 1997*), revealed weaknesses in the management of financial information. The review focused on the need to develop a strategic plan aimed at improving the financial management systems; skills and capacity within the government financial operations units. It also reviewed how timeliness of financial information, if improved, could form the basis for improving control of expenditure against budget.

1.1 Integrated Financial Management Information System (IFMIS)

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, 2009). 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 provides governments with a tool that can support financial control, management, and planning. By managing a core set of financial data and translating this into information for management, these three financial functions are supported. More narrowly defined, an IFMIS is a computer application that integrates key financial functions; accounts, budgets, and promotes efficiency and security of data management and comprehensive financial reporting. IFMIS are usually considered in terms of core and non-core financial functions. While public financial management is a broad field with multiple systems, it is striking how limited the commonly cited specification of the core functions of an IFMIS is a conventional specification of the IFMIS core is accounting and reporting functions, while non-core functions include budgeting, commitment control, cash management and disbursement functions. The common specification of the core functions does not include all of the components needed for effective financial control and, by definition, therefore, will increase risk.

1.2 IFMIS in Government of Kenya

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. 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. Now for over ten years, the Kenyan government has initiated some capital investment towards set up and installation of ICT infrastructure. Funding for these investments is achieved through partnerships between the government and development partners. The foreign funding component constitutes the largest percentage of this investment in terms of technology. The government contribution is usually in the form of technical and support staff and facilities including buildings. So far, the Government Information Technology Investment and Management Framework is connecting all ministries to the Internet under the Executive Network (Limo 2003). The government is also connecting the Ministries to run integrated information systems for example the Integrated Financial Management Information System (IFMIS) and the Integrated Personnel and Pensions Database (IPPD).

The development of the Integrated Financial Management and Information System (IFMIS) started in 1998 whilst deployment of the system to line ministries commenced in 2003. The Government of Kenya's IFMIS is an Oracle based Enterprise Resource Planning (ERP) Software. FMIS has now been rolled out to most of the Accounting units (Ministries) except Defense, NSIS, KACC and Northern Kenya which are almost ready for roll out with the system. Out of the five modules; General ledger, Accounts payable, purchasing orders, cash management and public sector budgeting, all the modules have been implemented. The IFMIS is designed to improve systems for financial data recording, tracking and information management. This is in response to increasing demands for greater transparency and accountability in the management of the public's finances. The IFMIS system ensures higher degree of data quality improves workforce performance for improved business results and links Planning, Policy objectives and Budget Allocations. The system also enhances reporting capabilities to support budget planning, automates the procurement process: requisition, tendering, contract award and payment, facilitates auto-reconciliation of revenue and payment with automatic file generation, facilitates automated revenue collections for improved cash forecasting and provides accurate and up to date information on the Government's financial position.

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 managers can use to administer programs effectively, formulate budgets, and manage resources. The modern day challenge of organizations is to have in place information technology systems that can effectively service the needs of the

organization, meet the rapid technological changes and be flexible to accommodate enhancements. It is imperative that a proposed new management information system should be adequately planned for and accommodates the needs of its myriad users to forestall the eventuality of system failure (Ngibuini, 2009). According to a similar study by Waruinge (2013), several factors have been identified for the problems associated with the implementation of the IFMIS in Kenya. Rapid implementation of the system has been constrained by significant technical, institutional and capability barriers. Most importantly, ownership and drive for the project have been constrained by a lack of qualified staff (World Bank, 2004). However, the over-riding reason appears to be the complexity of the initial design, which includes a large pilot and multiple users (MOF, 2007).

Despite substantial time spent in developing and customizing the software application, the pilot implementation and the roll-out of the IFMS in various government Ministries has faced a myriad of challenges. The management of public finance has continued to be dogged with corruption allegation, outright mismanagement, malpractices in the procurement processes, among others (Musee, 2011). Besides, the MOF and the CAGD are not fully satisfied with the IFMIS reporting system, and this has been a major area of dispute between the government and the software team (GOK/KPMG Report, 1997). A number of studies have been done in Kenya on the Integrated Financial Management Information System. For instance, Musee (2011) and Aduda (2009) did a study on the factors affecting the effective implementation of IFMIS in Government ministries in Kenya where he found that sabotage and employee resistance, lack of top management commitment and lack of capacity and technical knowhow hindered the effective implementation. Ngibuini (2005) on the other hand did a study on the impact of IFMIS and Waruinge (2008) was on factors for IFMIS success in developing countries. While these studies are beneficial to the researcher as they highlight the factors affecting the implementation, the studies failed to highlight the effectiveness of IFMIS in Kenya especially after the re-engineering. This study seeks to assess the effectiveness of IFMIS in selected government ministries in Kenya.

3. Objectives of the Study

The following are the objectives of the study:

- i. To determine the effect of IFMIS on the processing of accounting transactions in government ministries in Kenya.
- ii. To establish the extent to which IFMIS has enhanced the procurement process in government ministries in Kenya.
- iii. To assess the extent to which IFMIS has enhanced the production of financial records for preparation of annual accounts.
- iv. To find out whether IFMIS has enhanced the budget processes in government ministries in Kenya.

4. Theoretical Framework

This study will rely on theoretical models that provide a foundation for the research topic. Specifically, this study will rely on Technology Acceptance model, Theory of Budgeting and the Cost reduction theory.

4.1 Technology Acceptance Model (TAM)

This theory was first developed by Fred Davis in 1986, this theory focuses on usefulness and perceives ease of use as a determinant of individual intention to system usage. In the theory the intention to use a system serves as a link of use of actual system. According to Davis (1986), perceived usefulness is defined as the degree to which an individual believes that using a specific system to perform a task will enhance and have an effect on performance. On the other hand, perceived ease of use is the intention of a person to use a system would create a short cut in that no effort would be used in completing the said task. The author further implies that adoption will only be successful and fully create a significant effect only if there is a perception that technology increases performance and helps in making the operation less complex (David, 1989). A replication of Davis Adams (1992), work was criticized in 1993 by Segars and Grover (1993) the critic was on measurement model used and postulated a new model based on three factors that consisted of usefulness of system, effectiveness and ease to use. The authors deduced that ease of use and perceived performance was vital for use of new technology. This theory is therefore relevant and related to the study's research topic as adoption of IFMIS is termed as a key factor for improving performance of any given firm. In this context, TAM utilizes parameters that includes increasing speed thus creating effectiveness, making work easier and increase in production that will be realized with adoption of IFMIS.

4.2 Theory of Budgeting

One of the first attempts to apply the principle of marginal utility in a 'theory of budgeting' was made by Verne Lewis. Lewis argues that analysts should focus on increments of public expenditure, at the margin, since 'this is the point of balance at which an additional expenditure or any purpose would yield the same return'. Lewis (1952) argues that the relative value of these increments can then be assessed in terms of their 'relative effectiveness in achieving a common objective'. It is the task of politicians to determine this common objective and assess the relative effectiveness of alternative applications of public expenditure in achieving this goal. Budgeters can assist decision makers by presenting alternative proposals at varying levels of expenditure for each programme. In this way the trade-offs between alternative applications of additional funding can be revealed. Lewis argues that the concept of 'relative effectiveness' with regard to a 'common objective' effectively circumvents the problem presented by the lack of a common measure of utility. The difference between normative and descriptive budget theory may be as simple as the difference between what should work and what works. It has been complicated in our field by the difference in perspectives that sometimes characterize academics and practitioners. Normative theory is usually associated with reformers, and reformers usually come from the policy or academic community. It may be built on limited observations and guided by values. Descriptive theory is typically built on multiple observations, often through surveys, and guided by observation of practitioners as they go about the job of making budget decisions (Cox and Morgan, 1994). There have been times when normative and descriptive theory converged.

4.3 Cost Reduction Theory

First developed by Miller and Merton (1986), who defines Cost reduction as an exercise that involves an all-out effort to minimize cost at whatever level. The author observes that no operation can be assumed to be standard not accepted as being ideal. According to this theory, each item of cost is examined, operations screened and procedures analyzed to identify means of cost reduction. The theory further implies that cost is an attitude, philosophy or habit and must

originate from conviction of need for it. According to Juhakam (2003), the cost reduction theory is a driver of financial innovation. Examples of such cost reduction includes payment improvement, processing in terms of reduction as a result of electronic delivery of financial services to clients, regulatory requirements and restrictions and innovations aimed at cutting down costs. The cost reduction theory is relevant to this study as it is argued that firms in the environment in as much as they look for way of increasing prices to boost performance of organizations in terms of returns on assets and equity should focus on ways of cutting down costs with an aim of profits increase

4. Empirical Theory

This section reviews the available literature by different scholars on the study's independent variables.

4.1 Overview of Integrated Financial Management System

A financial management information system, or *integrated* financial management information system (IFMIS), is an information system that tracks financial events and summarizes financial information. In its basic form, an IFMIS is little more than an accounting system configured to operate according to the needs and specifications of the environment in which it is installed (Casals & Associates, 2004). Generally, the term 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 public financial management (PFM) processes, from budget preparation and execution to accounting and reporting, with the help of an integrated system for financial management of line ministries, spending agencies and other public sector operations (Rodin-Brown, 2008).

The principal element that integrates an IFMIS is a common, single, reliable platform database (or a series of interconnected databases) to and from which all data expressed in financial terms flow. Integration is the key to any successful IFMIS. In a nutshell, integration implies that the system has the following basic features: standard data classification for recording financial events; internal controls over data entry, transaction processing, and reporting; and common processes for similar transactions and a system design that eliminates unnecessary duplication of data entry. Integration oftentimes applies only to the core financial management functions that an IFMIS supports, but in an ideal world it would also cover other information systems with which the core systems communicate, such as human resources, payroll, and revenue (tax and customs). At a minimum, the IFMIS should be designed to interface with these systems (Rodin-Brown, 2008). An IFMIS stores, organizes and makes access to financial information easy. It not only stores all the financial information relating to current and past years' spending, but also stores the approved budgets for these years, details on inflows and outflows of funds, as well as complete inventories of financial assets (for example, equipment, land and buildings) and liabilities (debt) (Casals and Associates, 2004).

The scale and scope of an IFMIS can vary, from simple General Ledger System to a comprehensive system addressing Budget, Revenue, Expenditure Control, Debt, Resource Management, Human Resources, Payroll, Accounting, Financial Reporting, and Auditing processes across central government or even including local government and other public sector and quasi-governmental agencies and operations. A more comprehensive, well integrated system will: provide timely, accurate, and consistent data for management and budget decision-making;

support government-wide as well as agency-level policy decisions; integrate budget and budget execution data, allowing greater financial control and reducing opportunities for discretion in the use of public funds; provide information for budget planning, analysis and government-wide reporting; facilitate financial statement preparation; and provide a complete audit trail to facilitate audits (Rodin-Brown, 2008). By recording information into an integrated system that uses common values, IFMIS users can access the system and extract the specific information they require to carry out different functions and tasks. All manner of reports can be generated: balance sheets, sources and uses of funds, cost reports, returns on investment, aging of receivables and payables, cash flow projections, budget variances, and performance reports of all types. Some systems have libraries consisting of hundreds of standard reports. Managers can use this information for a variety of purposes: to plan and formulate budgets; examine results against budgets and plans; manage cash balances; track the status of debts and receivables; monitor the use of fixed assets; monitor the performance of specific departments or units; and make revisions and adjustments as necessary, to name but a few. Reports can also be tailored to meet the reporting requirements set by external agencies and international institutions like the IMF (Dorotinsky, and Cho 2003).

4.2 Basic Components of a Government IFMIS

An IFMIS will generally consist of several distinct components or modules that use information to perform different functions. Figure 2 presents a basic diagram of a typical government IFMIS, including several core components, as well as non-core components that will either be integrated into the system or connected to the system via an interface. Bear in mind that some systems are far simpler, while many are far more complex in scope and functionality. At the core of the system is the *General Ledger*. The General Ledger constitutes the central books of any IFMIS. Every transaction entered into the system posts to the General Ledger, starting with the allocation of budget funds through to the commitments to payment for goods and services. All transactions should simultaneously post to the General Ledger and to all appropriate sub-ledgers/modules following the rules imposed by a standardized chart of accounts. These records remain as a permanent track of the history of all financial transactions, and represent the source from which all reports and financial statements are derived (Dorotinsky, and Cho 2003).

The list of potential add-ons can be very long, depending on the particular needs and the level of sophistication of the government. Moreover, the functions the IFMIS may be called on to perform can vary from producing budgets and reports to managing procurements and grants to processing payments and receipts. On top of this, the system needs to provide security on several levels: internal system security; user profiles for each type of user; and external security as the system communicates with the outside world: internet, the banking system, citizen interfaces for facilities like taxes, licenses, and so on. Financial management information systems are implemented and used successfully almost all the time in the commercial world. When they fail, so do the companies they support. This is the fundamental difference between the commercial and the government environment. Commercial organizations can and do fail. Companies like Enron, WorldCom, and Parmalat are just the most recent examples of organizations whose financial management lapses precipitated their downfall. On the flipside, governments can and do end up in severe financial straits, but rarely is financial collapse the end of the road for a sovereign state (Dorotinsky, & Cho 2003).

The major advantage in a commercial environment, however, is that there is a clear objective be it improving efficiency or improving productivity and a clear decision making process. If the

decision is made to put into place a new financial management information system, then once the needs have been assessed, the organization shops around for the most appropriate product, purchases it, and deploys the necessary resources to complete the job (Rodin-Brown, 2008). Government decision-making and action is not as efficient, or clearly directed, as it is in most commercial institutions. Governments do not have simple line-oriented chains of command. They generally have complex administrative structures, and especially in developing and post-conflict settings, they tend to lack the required competencies and knowledge at most levels to choose or implement the solution. Moreover, the political will to replace old systems, processes and structures with new ones and introduce new ways of operating is often not there. Even when the political will is there, maintaining it can be quite problematic when one considers that the timeline for most IFMIS implementations is longer than most finance ministers' term in office (Dorotinsky, & Cho 2003).

The design and functionality of government IFMIS is also 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 (Dorotinsky, & Cho 2003). 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.

Aside from the above considerations, introducing a government IFMIS is also context-specific and varies greatly from country to country. Indeed, implementing public finance reforms of any kind requires an understanding of the entire public finance system in place in that country. It requires an understanding of the institutional arrangements, the division of authorities and responsibilities, and how these arrangements are carried out across government (Dorotinsky, & Cho 2003). Vietnam, with a population over 80 million, has a strong central government, but also has 64 provinces, each with its own full administration and political requirements. In Kosovo, on the other hand, the international community built the fiscal infrastructure of this territory of 2 million people virtually from scratch, delegating only limited powers to nascent Kosovar institutions in the initial post-conflict period (Rodin-Brown, 2008). The scale and the challenges are quite different, and these considerations will influence the strategies and solutions adopted. Clearly, without a critical understanding of the political and administrative structure, the existing systems and processes, and other defining factors, any effort to introduce new systems will ultimately fail, or at the very least meet with costly delays.

4.3 Effect of IFMIS on Organizational Performance

Integrated Financial Management Information Systems (IFMIS) has been found to save on costs (Huang et al., 2009; Kang et al., 2008; Loh et al., 2006), facilitate budgeting processes (Gattiker & Goodhue, 2005), and provide better information management (Federici, 2009). Operational aspects like lead time can also be shortened by utilizing IFMIS systems (Cotteleer & Bendoly, 2006; Gupta et al., 2004; Kang et al., 2008). According to Velcu (2007), faster fulfillment of customer orders can be achieved using IFMIS which will result into enhanced service delivery to

the members of the public. Gupta et al. (2004) and Matolcsy et al. (2005) also agree that IFMIS provide more customer satisfaction by reducing time of delivery of service

Although literature seemed to agree that IFMIS improves the overall performance of the organization, there are still some concerns expressed by some scholars that there might be reverse causality between pre- and post- implementation with a drop in some performance indicators (Hitt et al., 2002). Some researchers tried to give reasons for this. For example, Fub et al. (2007) suggest that services-sector business (like banks) adopting IFMIS usually anticipate and utilize IFMIS for effectiveness more commonly than efficiency, therefore cost reductions and productivity might not be as important for them as better quality business processes and better information quality. For such IFMIS adopters making efficiency and productivity measurements is inaccurate and can have negative causality. Therefore, previous research has found contradicting findings regarding the effect of IFMIS on organizational performance.

While some researchers have found that IFMIS can affect overall public organization performance positively others have only found IFMIS to affect specific areas and not the overall organizational performance. This can then suggest that IFMIS do not always affect the organizations performance positively and some contributing factors affect this relationship (Kang et al., 2008). In addition, some studies also contradict that sufficient financial benefits are achieved after IFMIS implementation. This can be seen for example when Kennerley and Neely (2001) concluded that revenue collection in specific was found unaffected after implementing IFMIS. The study by Wieder et al. (2006) stated that some research found that specific financial benefits of IFMIS were not accumulated when comparing between IFMIS before and IFMIS after implementation. Nicolaou (2004) stated that the ration of G&A expenses to sales for IFMIS adopters showed a worse ratio than non-adopters indicating a fall in financial performance from this aspect. Wei (2008) added that some researchers found long-term positive effects of IFMIS on financial performance, while other researchers only suggest that IFMIS can help keep performance as-is and does not improve it from the financial aspect. This suggests that further investigations using such financial analysis are important. According to Diamond and Khemani (2006) and Chêne (2009), a well-designed Integrated Financial Management Information System (IFMIS) contains the following characteristics: it is a management tool; it provides a wide range of non-financial and financial information; it is a system and it impacts on corruption.


5. Conclusion

Literature indicate that implementation and enforcement of IFMIS show enhanced processing of the accounting transactions whereby despite the many numerous transaction points, IFMIS is able to consolidate the processes in real time. The implementation of IFMIS is expected to enhance the procurement process in that the organization is bound to get value for its money at it will be able to get quality products and services at the lowest possible cost. IFMIS helps in efficient allocation of resources in the organization. IFMIS will also enhance the production of the real time financial reports for decision making. Finally, IFMIS will improve the budgeting process by providing real time feedback on expenditure in comparison to the budget estimates and extreme variations can be identified and corrective action taken on time.

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