

**EFFECT OF INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM
ON PERFORMANCE OF PUBLIC SECTOR: A CASE OF NAIROBI COUNTY
GOVERNMENT**

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ABSTRACT

The purpose of this study is to analyse the effectiveness of Integrated Financial Management Information System (IFMIS) on performance of public sector in Kenya. Public finance management has come under immense scrutiny by donor community as well as general public in a call for enhanced accountability of the government expenditures for an improved public service delivery. This study aimed to analyse how the government of Kenya has tackled this problem and how effectively the system in use has succeeded in meeting this objective. The study therefore analysed four variables; financial reporting, budgeting, internal control and implemented government projects to assess the effectiveness of the implemented system. The study used descriptive research design to collect data. To analyse the effectiveness of identified factors on the use of the system, descriptive and inferential statistics were used. The target population of the study was 150 employees from Nairobi County Government. The sample size was drawn from the sections of finance department that includes, budgeting, procurement and internal audits, and at public works department where the financial systems are applied. The primary data was collected through questionnaire with set questions relating to specific objectives of the study. Random sampling technique was applied to get a sample population that was issued with the questionnaires. The study used quantitative and qualitative method of data analysis using descriptive statistics on quantitative data and inferential statistics on qualitative data. Data results and findings were presented in tables and figures. The study found that IFMIS has been effective in financial reporting, budgeting and internal controls as well as implementation of government projects, although there were challenges faced in internal controls. The study revealed that there was a positive relationship between the effectiveness of IFMIS on public financial management and the independent variables; financial reporting, budgeting, internal controls and projects as was revealed in the regression analysis. The study concluded that there was a relationship between IFMIS in public finance and financial reporting,

budgeting, internal control and government projects as 72.4% of the effectiveness of IFMIS was accounted for by the study independent variables. The relationship gave 95% confidence level of effectiveness. The study recommended that the IFMIS be enhanced and improved at system development level so that it gives real figure and factor in more functions of operation linked to financial service for better service delivery. The Nairobi County Government should consider prioritizing on improvement of internal controls module of the system as this presents and manages all other finance management functions.

Key Words: *integrated financial management information system, performance, public sector, Nairobi County Government*

Introduction

Over the past decade developing countries have increasingly embarked on computerizing their government operations particularly with respect to Public Sector. This follows a growing interest in the quality of public sector financial management in developing countries by the donor community. In contrast, during the cold war, aid was generous, but often doled out to political allies with few questions (Hashim, 2006). In the early years after the fall of the Berlin Wall in 1989, interest in the state affairs was limited, but following the World Bank's report, the role of the state became increasingly prominent in development efforts, and particularly in the drive against poverty (World Bank, 2008). The new agenda recognized that, while there may be too much intrusion in the state economy, there may be also too little government capacity to make policy, perform basic administrative functions, work with private partners, and ensure the provision of infrastructure and public services (Hopelain, 2004). In 2003, the UK's Department for International Development (DFID) issued its guide on public expenditure management which noted that, in recent years, there has been a dramatic surge of interest in public expenditure issues amongst governments, development agencies and the wider public. This shift was seen in the eyes of World Bank to offer Africa a chance to leapfrog intermediate stages of development (DFID, 2003). As a result, consultants and other advisors of governments in Africa started toying with idea of the introduction of modern information technology, the Integrated Financial Management Information Systems -IFMIS (World Bank, 2004).

The government of Kenya has for a long time been very much concerned over the persistent poor performance in financial management due to lack of reliable and timely information for decision making. A review by the department of accountant general at treasury, financial management, accounting systems and role of audits revealed weaknesses in the management of financial information. 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 (Kinyua, 2003). The government of Kenya took an initiative to address the shortcomings of the financial reporting system and to ensure

good governance. The International Monetary Fund (IMF) carried out a survey in government accounting in early 1993 followed by a diagnostic study sponsored by the World Bank; this led to introduction of IFMIS. The main objective of this project was to computerize the whole accounting and auditing system in the country. The idea behind computerizing the whole system was generation of accurate and reliable financial statements; to monitor fiscal deficit; to forecast flow of cash; to manage public debt and to achieve effective financial controls (Kinyua, 2003). The old accounting system lacked timeliness, accuracy and most importantly transparency. Accounts of any organization, large or small, are the most important tool for curbing the corruption by keeping an eye on cash flows and more importantly to give the overall inner picture of the organization to the stakeholders which helps them take informed decisions (Kearney, 2004).

While talking about the country as an organization the importance of the accounts becomes much more vital. So the importance of these accounts increases in manifolds. The old manual system was like a haunting monster even to a common government employee where employees were going to the accounts office for a number of services like salary issues, provident fund and pension deductions and take long time to have any of the issues processed. Experience gained showed that, in the old system a common man had a series of unlimited problems and hurdles to face in order to get his financial claims accomplished on time. But, unfortunately, till the recent past the government did not pay proper attention to overcome these problems due to the status of the economy of the country. On the other hand common man faces enormous difficulties and lacking in transparency in benefiting from public financial management. After the introduction of IFMIS this ultimate goal was achieved almost immediately. The main objectives of this project was to achieve timely, accurate and complete accounts with transparency and most importantly to facilitate the common government, employee regarding their financial status. But to date, there is a lot more to be done to achieve this goal and maintain it effectively (PIFRA, 2004).

Integrated Financial Management Information System

An IFMIS is a fiscal tool for government that bundles all financial management functions into one suite of applications. It is an Information Technology (IT) based budgeting and accounting system designed to assist the government entities on how to plan budget requests, spend their budgets, manage and report on their financial activities, and deliver services to the public more efficiently, effectively and economically. IFMIS operates on a common structure and platform that will enable improved compatibility and consistency of fiscal and financial information, reduces governments overall investment in the development of expensive accounting systems in each government entity. One of the basic features of the IFMIS is the ability to interface with a number of existing and planned automated systems such as the Integrated Personnel Payroll Data (IPPD) and Government Payments Solution (G-pay). IFMIS software to Kenya government was contracted to oracle financials in 2003. Oracle financials being an Entrepreneur Resource

Planning (ERP) was designed to consolidate the core modules to all ministries, these are; purchasing module, accounts payable module, general ledger module, cash management module and public sector budgeting module (Ministry of Finance, 2003). Effectiveness and improved outcomes are important goals for any IFMIS acquisition. The objective of implementing an IFMIS system is to increase the effectiveness and efficiency of state financial management and facilitate the adoption of modern public expenditure management practices in keeping with IPSAS. The benefits of an IFMIS include: better fiscal management, more optimal resource allocation, improved management of resources (value for money), reduced fraud and corruption, improved transparency and accountability, lower transaction costs (Ministry of Finance, 2003).

Information technology management is a combination of two branches of study; information technology and management. There are two incarnations to this definition. One implies the management of a collection of systems, infrastructure and information that resides on them. Another implies the management of information technologies as a business function. Information technology is the acquisition, processing, storage and dissemination of vocal pictorial, textual and numeric information by a microelectronics based combination of computing and telecommunications, effective use of information technology contributes to high level of effectiveness in execution of various organization functions (Michale, 2001). Information management system is therefore the combination of information, communication and system components with management approach to ensure effective information processing retrieval and communication in a systematic manner (Goll, 2003). The integration of the information processing and management in a system is perceived as a useful technique of processing and maintaining data, controlling and communicating useful information in the manner that is needed (Casals, 2004). The government of Kenya has embraced the use of this tool of management and accountability through the IFMIS to execute effective financial management in the various government ministries and public institutions (Kang'ethe, 2002).

Statement of the problem

According to Kinyua (2003), the government had consistently experienced misappropriation of funds and lacks appropriate control mechanisms in PFM of funds which leads to poor service delivery and overspending. Despite existence of manual based control systems, lack of accountability in government expenditure has been a concern to the general public and international institutions such as World Bank and IMF (Kinyua, 2003). This calls for enhanced PFM and accountability. In the year 2005, IFMIS was introduced to cushion the government against loss of revenue against unauthorized expenditure. There is a broad agreement that freely functioning IFMIS can improve accountability by providing real time information that financial and other managers can use to administer programs effectively, formulate budget and manage resources. It was on this background that the study aimed at assessing the effectiveness of IFMIS on public sector in Kenya.

General objective of the study

The general objective of the study was to analyse the effectiveness of IFMIS on performance of public sector in Kenya.

Specific study objectives

1. To analyse effectiveness of IFMIS on performance in public finance.
2. To verify effects of IFMIS on budgeting of public finance.
3. To assess how IFMIS has affected internal controls in public finance.
4. To establish how IFMIS has affected performance of government projects in public finance.

Theoretical framework

Information theory

Information theory, a concept of R.A. Fisher (1962) provides a background which has diverse meanings, from everyday usage to technical settings. The concept of information is closely related to notions of communication, control, data, form, instruction, knowledge, meaning, mental stimulus, pattern, perception, and representation media. Information is the result of processing, manipulating and organizing data in a way that adds to the knowledge of the person receiving it. Information management entails organizing, retrieving, acquiring and maintaining information in a medium. Information is any type of pattern that influences the formation or transformation of other patterns. In this sense, there is no need for a conscious mind to perceive, much less appreciate, the pattern of communication. Fisher information is thought of as the amount of information that a message carries about an unobservable parameter. It can be computed from knowledge of the likelihood function defining the system. For example, with a normal likelihood function, the Fisher information is the reciprocal of the variance of the law. In the absence of knowledge of the likelihood law, the Fisher information may be computed from normally distributed score data as the reciprocal of their second moment.

Communication theory

Bill (2001) said that communication theory provides a numerical measure of the uncertainty of an outcome. For example, we can say that "the signal contains thousands of bits of information". Communication theory tends to use the concept of information entropy, generally attributed Information Communication Technology (ICT) which is a general term that describes any technology that helps to produce, manipulate, communicate or disseminate information. ICT merges computing with high-speed communications links carrying data, sound and video. ICT

can also be defined as an automatic acquisition, storage, manipulation, movement, control, display, switching interchange, transmission or reception of data or information. The two important major components of ICT are computers and telecommunications (Michale, 2001).

Recent developments in the fields of communications and information technology are indeed revolutionary in nature. Information and knowledge are expanding in quantity and accessibility. In many fields future decision-makers will be presented with unprecedented new tools for development. In such fields as agriculture, health, education, human resources and environmental management, or transport and business development, the consequences could be really quite revolutionary. Communications and information technology have enormous potential, especially for developing countries, and in furthering sustainable development (Annan, 1997).

System theory

In Systems theory, Wang (2005) refers to information in the sense that assuming information does not necessarily involve any conscious mind, and patterns circulating (due to feedback) in the system can be called information. In other words, it can be said that information in this sense is something potentially perceived as representation, though not created or presented for that purpose. According to Kang'ethe (2002), a system is a group of related and interacting components, which work together to achieve a desired purpose or set of objectives. The writer further observes the need to have control elements to ensure that the process gives the desired level of out-put and avoid or reduce wastage. The need for efficiency and effectiveness therefore brings forth another need of ensuring harmony and synergy between the human resource as the core resource that controls other resources on the one hand and the other tools of trade, in particular modern ICT on the other hand so as to realize the objectives of office secretarial management. There is therefore the clear need to understand the perception of human resource and areas with potential for conflict in the course of interaction between the human resource and modern ICT. When computer and communication technologies are combined, the result is information technology systems, or "InfoTech". Information technology is a general term that describes any technology that helps to produce, manipulate, store, communicate, and/or disseminate information. Presumably, when speaking of information technology as a whole, it is noted that the use of computers and information are associated.

Emerging Information and Communication Technology (ICT) can play an important role in fighting corruption in public finance systems by promoting greater comprehensiveness and transparency of information across government institutions. As a result, the introduction of IFMIS has been promoted as a core component of public financial reforms in many developing countries. Yet, experience shows that IFMIS projects tend to stall in developing countries, as they face major institutional, political, technical and operational challenges. Case studies of more successful countries indicate that factors supporting successful implementation include clear

commitment of the relevant authorities to financial reform objectives, ICT readiness, sound project design, a phased approach to implementation, project management capability, as well as adequate resources and human resource capacity allocated to the project (Chena, 2009).

Empirical Review

According to USAID (2008) report, integrated financial management information system is an information system that tracks financial events and summarizes financial information. Generally it refers to the use of information and communication technology in financial operations to support management and budget decisions, fiduciary responsibilities and the preparations of financial reports and statements. In the government realm, IFMIS refers more specifically to the computerizations of PFM process 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. The principal element that “integrates” an IFMIS is a common, single, reliable platform database (or a series of interconnected databases) and from which all data expressed in financial terms flow (Casals, 2004).

Since 1990, governments around the world have been executing major technological limitations in order to take advantage of the potential of emerging information and communication technology. IFMIS enhances effectiveness and transparency of the system by computerizing the process in which public financial resources are managed. However, the results from international experience with IFMIS, including World Bank have been so far quite mixed. While some countries have improved on transparency of public financial management processes, many other countries were found that their reforms have not been fully successful in combating corruption. This is according to E-Transparency Conference organized by Institute for Development and Policy Management Report (IDPM) 2003. The report further stated that IFMS consists of several sub-systems which plan, process and report public financial resources. The basic sub-systems include accounting, budgeting, cash management, debt management and related core treasury systems. In addition to this basic set of core sub-systems, countries have often chosen to enhance their IFMIS with non-core systems such as revenue collection (tax and customs), procurement management (often called e-procurement), asset management, human resource and payroll systems and pension and solid security system (IDPM, 2003).

Barry (2001) says that the level of complexity of IFMIS is much higher than other ICT-based government reforms due to inherent complication of public financial management system. It involves not only ministry of finance but also all line ministries and other multiple spending units. However, integrated public financial management system is quite a challenging task and requires multiple conditions to be satisfied for successful implementations of long term sustainability. Even though ICT automates the tasks involved in performing business processes such as purchase requisitions, quotations, quotations analysis, and preparation of local purchase orders, deliveries and goods receipts. With IFMIS programs changes the way government

information is captured, summarized and communicated and the benefits of these advances should not be underestimated. The introduction of IFMIS system should not just be seen as a technology fix, since simply automating tasks that did not need to be carried out in the first place rather IFMIS implementation should be seen as a public financial reform that affects how things are done across government ministries and parastatals (Diamond and Khemani, 2005).

IFMIS and government business

There are three major reasons why governments undertake IFMIS program mainly in the implementation process to integrate financial data since finance has its own set of revenue numbers. Procurement has another version and other different business units may each have their own versions of how much they contributed to revenue. An IFMIS creates a single version of the truth that cannot be challenged because everybody is using the same system. To standardize the government financial accounting and budgeting process, computerized system for treasury management together with policy framework and institutional reforms must be implemented to the letter (Hashim, 2001).

The implementation of financial systems requires consolidation and rapid compilation of large amounts of data across a set of financial offices and spending units dispersed across the company and the functional process associated with these systems are repetitive in nature and follow a prescribed set of rules. In such an environment the IFMIS provides government financial managers with a set of tools to consolidate compile and access reliable and timely financial information for decision making process (Khemani, 2005). It also identifies unique operations to process government business transactions efficiently, apply necessary control and simultaneously gather timely and accurate financial information. Two aspects of this enhanced efficiency are particularly important, first the IFMIS makes it possible to integrate business transaction classification and posting with transaction processing. This means that as a transaction is processed e.g. as payment is made it can be simultaneously classified. Secondly, the system facilitates automation of many controls and procedures since as transaction is processed, the system can apply the necessary controls e.g. ensure that a proper budget allocation exists prior to making a commitment or approving a payment. In these cases, the IFMIS would keep an appropriate audit trail that would include details regarding the authorization for the exception (Bill, 2001).

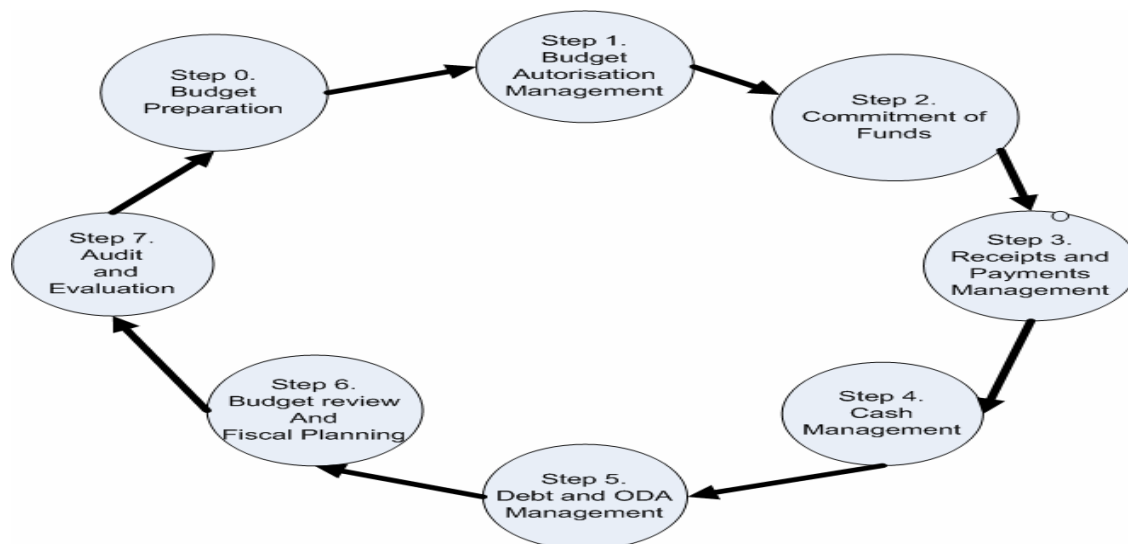
The IMF and the World Bank have been involved extensively in advising governments in developing policy and institutional budgeting and accounting set up and function in accordance with international practices. These reforms are especially important in transition economics where the legal and institutional infrastructures need to be set up. Some of the key actions and policy reforms include development of comprehensive budget management law, adoption of budget classification system, consolidation of government bank accounts to Treasury Single Accounts (TSA) at the central bank, implementation of systems for detailed regulations covering

TSA – based budget execution and enhancement of cash management units (IMF, 2006). With the rapid infusion of Information Technology in Kenya, organizations are now realizing the critical role that ICT play in business financial management in all sectors. IFMIS are also implemented and used successfully almost all the time in the commercial world. The design and functionalizing government IFMIS is critically different from that of private enterprise systems because governments are not driven by profits but rather by measures of accountability, ensure compliance with budget laws, other public finance rules and regulations and an entirely different set of accounting rules and reporting requirements. They must be designed to support a multitude of distinctly public sector-oriented functions and organizational arrangement (Soh, 2007).

Integrated Financial Management Information System (IFMIS) and the Public Financial Management (PFM)

Integrated financial management information system in public financial management involves a number of steps which are simulated from single point of data entry widely accepted as the basic requirement to accomplish real time financial data or fiscal discipline. This format may use functional structured approach for all financial management functions under one umbrella for the purpose of transparency, accuracy and timeliness. United States Agency for International Development guide considered function of budgeting in PFM as illustrated in figure 1 below. This demonstrated the complex set of various functions of government that may be supported by IFMIS. These include the typical functions that make up the PFM cycle, from budget formulation to budget execution and review, to audit and evaluation of financial performance and results (USAID, 2008).

Figure 1: IFMIS and the public financial management cycle



Source: USAID IFMIS Practical Guide (2008)

IFMIS and government projects

In the outlay of government activities are numerous projects range for implementation. Many countries in Africa have struggled with completing projects and a result remains undeveloped or in developing process (Heidenhof, 2002). Some of the factors associated with the state of poor development strategies are cited as lack of accountability, poor public financial management, capacity building and lack of appropriate skills to manage a project. Introducing a budget execution and expenditure management system that will monitor and account for revenue and public expenditure is important elements towards effective accounting system, cash management controls and monitoring income and expenditures. To ensure effective performance and completion of projects, Charts of accounts (COA) was introduced to capture all project financial activities. This structure and platform is a model of project performance management. Kenya has just completed her medium term expenditure outlay which indicates readiness towards full implementation and execution (World Bank, 2006).

The conceptualization of IFMIS and Public Finance Management

Accountability

The accounts classification code structure is a methodology for consistently recording each financial transaction for purposes of expenditure control, costing and economic and statistical analysis. A standard government wide classification code structure should be set up during IFMIS implementation process to provide a consistent basis for integration of planning, budgetary and accounting, compilation of budget allocations on program and project cost within and across various government agencies, capturing of data at the point of entry through the government and consolidation of government wide financial information (Walsham, 1988).

The COA represents the basic building block of any accounting system, IFMIS included. The COA list all accounts tracked by the system. Each account in the chart is assigned a unique identification or an account number, involving a series of information tags that denote certain things about the data being entered into the system. The account number attached to the data serves accounting, management and all other reporting purposes. It also forms a part of data validation process indicating things such as whether or not a vendor exists, whether or not there is an authorized budget and whether or not funds have been committed. COA is an integral part to the success of an IFMIS. Without an intelligently designed COA, information cannot be stored or accessed properly (Bartel, 1996).

According to Cho (2003), financial accounting, whether in private or government, there are basically two accounting methods; cash and accrual. Most developing countries like Kenya record their finances in a cash basis. However, best practice suggests that the accrual while relatively complex is a better method for accessing the government's true financial position and

performance against budgets and plans. Fortunately, using a well designed COA and sometimes some tailored interfaces, an IFMIS can be configured to generate reports using either method, literally at the click of a button. Furthermore, the COA can be compromised by the frequent changes in leadership and priorities which form the characteristics of most governments. There is constant pressure to restructure or re-shuffle administrative units or shift responsibilities for programs each time there is an election or a minister replaced. The COA is designed to permit a complete reconciliation between opening balance transactions and the economic flows and closing balance. Such a reconciliation is not possible in a cash basis system rather accrual system because the recording of stocks and flows (particularly valuations) in systems that rely only on cash information is inherently incomplete. While many inherently incomplete systems will remain predominately cash basis for some time to come, an important elements of treasury system design in that it should include scope for progressive improvement in the accounting information available to decision makers (Casals, 2004).

Financial Reporting

The adoption and subsequent use of COA allows for the continuation of cash basis reporting - a necessary element of accrual system which serves as the logical step in improving the data basis of the treasury system. The government must specify reporting requirements and objectives in two areas; external reporting to provide information for the legislature and the public as well as other countries, international organizations, overseas investors and financial market and internal management reporting for government policy makers and managers. In general the broad requirements for external reporting are specified in the budget regulations and detailed requirements are given in regulations, instructions and administrative practices (e.g. reports format) actually in use in Kenya and other developing countries (Mark 2007). Mark further noted that from the point of view of resource allocation, increasing emphasis has been given in recent years to improve reporting standards by linking financial and performance information and giving a clearer perspective on resource use by using accrual-based reports in addition to the usual cash-based government accounts. Development of such report formats is in general accruing mainly in industrialized market economies. Technological business requires highly skilled staff to ensure operations move smoothly and breakdowns handled with a record recovery period (Ferdinand, 2006).

Budgeting

The functional process of budgeting can be categorized as those carried out by the central agencies and those carried out by the spending ministries and agencies. Those of the former group are most directly linked to the control framework- indeed one of the main functions of the central agencies (particularly the ministry of finance) is to ensure that the control framework is properly applied through government ministries. This functional process covers two interrelated areas; macro fiscal forecasting, budget preparation and approval, and budget execution, cash

management and accounting. The first set of processes supports the objectives of setting fiscal policy and strategic priorities. The second set supports the objective of optimizing the use of budgeted resources and ensuring accountability (Allan, 1999).

At the start of the budget cycle, the central agencies generally the ministry of finance send the sector agencies a budget circular indicating economic prospects and broad policy objectives (in some cases based on the formal micro economic framework), and giving the parameters within which the budget for each ministry is to be prepared. The circular may give specific ceilings for expenditure by each agency and program. The sector agencies respond with their budget proposals (World Bank, 2004). Since budget requests generally exceeds, negotiating at the technical level between central and sector agency staff are required to review costing for existing discussions and are often required to set inter sectarian priorities and priorities among the program and project proposals to ensure that the selected proposals can be funded within the macroeconomic framework. The framework should be updated frequently particularly during budget initiation and finalization as well as subsequent reviews during the financial year. As a result of these discussions, a draft document is prepared (Ministry of Finance Report, 2008).

The report indicated further that, after preparation of the draft document, by the executive, the legislature reviews the estimates and approves the budget. This approved budget becomes the legal basis of the Public Sector Work Program (PSWP) to be executed by the sectarian ministries. It gives estimates of expected revenues and borrowing and the amount of expenditure authorized to be spent on approved programs. Once the budget is approved, the ministry of finance has the task of controlling the release of funds, mounting progress on budget implementation and managing the cash resources of the government. Warrants authorized by the ministry of finance are sent to the treasury that is the custodian of the consolidated fund to make payments out of the consolidated fund or make money available for payment by the responsible accounting officers.

Internal Control

Financial management information systems are implemented and used successfully almost in all time in the commercial world (Hashim, 2001). The IFMIS system control ensures that before a purchase is committed to, there is sufficient cash allocated for the expense and the allocation matches the appropriate budget. To ensure proper expenditure control, sector agencies and government ministries are required to institute a system of committee planning and control to ensure that expenditure does not exceed the sum approved by parliament for specific purposes and expenditure is within the warrant amounts. The later elements of expenditure control are often used by the ministry of finance to ensure that expenditures do not exceed accrual resources which may be less than estimated in the budget (Walsham, 1988).

According to Allan (1999), when a receipt shortfall occurs, it is essential that the treasury be aware of the commitments for which cash is needed during the year. Tax revenues from custom

duties, income and land taxes are managed by the revenue collection agencies. These revenues are deposited in local commercial banks and remitted to the government central account in the central bank. The central bank then sends a daily report to the treasury on inflows to this central account. Non tax revenue from fees, administrative charges and product sales are also managed by the collection agencies and transferred to the consolidated fund. The accounting function entails maintaining records of spending authorizations at the appropriation and funds release levels, processing expenditure and receipt transactions, maintaining ledger accounts to monitor and control actual spending and receipts against budget and warrant controls and reporting details.

Government Projects

One of the key elements of IFMIS entails reporting and auditing systems to ensure transparency, accountability and compliance with the budget or with existing regulations that govern public expenditure management (Heidenfod, 2002). According to Heidenfod this element accelerates execution of projects in the view of ensuring proper use of funds, and government remaining focused in ensuring completion of the projects. In 2003, the government embarked on a number of projects such as free primary education, public health, and water resource management. These required improved system of financial management to ensure timely completion of medium term projects. Under the ministry of industrialization a department to steer this was formed under the burner of 'Kenya Vision 2030' the key role of the department being to identify and coordinate development projects that will foster growth of Kenya economy. A number of projects have been completed under this department. The integration of different functions and entities within a shared database provide managers with tools to plan manage and control public resources. Automation of projects financial activities is a key feature for completion as it improves efficiency in financial controls and other expenditure management procedures, improve consistency of information and improved checks and balances (Nzuve, 2012).

Reforms in financial management has effects on restructuring of institutions through financial management reform programs, comprehensive public sector reforms, structural adjustments with particular focus on economic management resulting to massive reforms on central government and local governments in service delivery in all ministries, this has seen an improvement in a number of medium term projects under the budget preparation based on Medium Term Expenditure Framework (MTEF). It is in these reforms programs the government has been able to spur growth and development as envisaged in the Kenya vision 2030 projects (Ministry of Planning, 2011).

Research Methodology

Research design

The study applied descriptive research design. Descriptive research includes surveys and fact finding enquiries and is applied where the study is using comparative variables in the field of study and the case at hand has no control over the variables and the researcher can only report on what has happened or what is happening (Mathooko et al, 2011). In this study the design was used to describe the effectiveness of IFMIS on performance of public sector relating to various independent variables, identified as; financial reporting, budgeting, internal controls and government projects. Each variable was analyzed in relation to the effect it has on public financial management system. This restricted and guided the researcher in remaining focused on to the specific objectives of the study.

The target population

The target population in this study was 150 employees from Nairobi County Government in the sections of finance department that includes financial reporting, budgeting and internal audits, and at public works department where the financial systems are in use. The researcher had ascertained this population with the administration department of the council on the possible number of employees in each of the department under study.

Sampling frame and technique

The sample frame in this study was 150 respondents drawn from the target population. These comprised users of the IFMIS selected from the sections of finance department that include; financial reporting, budgeting and internal control, and public works department. This aimed at achieving comprehensive and reliable data. Stratified random sampling technique was used. This was because the study population is not homogenous as it comprised employees from different departments. This technique was used to select the sample size that was represented the actual number of respondents who were picked from each population category and issued with questionnaire. A proportionate probability ratio of 0.8 was used to ensure over 80 percent of the sample frame population responds for maximum representation of the total population of the study. This technique also ensured fair and accurate representation of the general target population. According to Kothari (2004), at least 30 percent of the target population is a recommended size to study the population. A sample size of 120 respondents was selected through the use of stratified random sampling technique and issued with the questionnaire.

Data collection methods and tools

Primary data and secondary data collection methods were both used in the study. The primary data was collected using questionnaire that related to specific objectives of the study. The questionnaire had structured and unstructured questions to ensure data collection validity and reliability that ensured deep insight on the statistical variables. The structured questions were presented in the Likert scale for respondents' measurement on their opinions on various aspects of IFMIS on public financial management that as guided by the study objectives. Secondary data that involved past reports such as annual budget data, progress reports and internal audits reports since when the system implementation started and had key information that was helpful to the research study was used. This data was obtained through desk review of the reports at the County Government.

Data Collection Procedures

The designed questionnaire based on the research questions was administered to the sample population to obtain data relevant to the study. First, 5 questionnaires were used for pre-test to 5 respondents who were selected randomly from the target population of 150 to ascertain the suitability of the instrument before the actual administration. This enabled the researcher to fine tune the questionnaire for objectivity and efficiency of the process of researching as well as time needed per questionnaire. Questionnaires were issued to respondents in the four categories of the target population. The respondents were given enough time to complete the questionnaires, the questionnaires were later picked and data analysis commenced. Secondary data was obtained through desk review of relevant records and information obtained on IFMIS performance from the County Government for the last six years from 2007 to 2012.

Data Analyses Methods

The study used both quantitative and qualitative method of data analysis. Quantitative analysis was used on data collected through questionnaires. Collected data was first coded and then quantitatively analyzed according to statistical information derived from the research questions. The coded data was then tabulated and presented for statistical analysis by calculating the percentages, means and variance on each variable. Data results were presented in tables and charts to give a clear picture on the findings. Secondary data was derived from desk review of annual information on IFMIS for all variables for a period of six years (2007-2012). The secondary data was subjected to a multilinear regression equation model to test the relationship between the dependent variable, IFMIS Performance and the independent variables of financial reporting, budgeting, internal control and government projects. The multilinear regression equation assumed the following form:

$$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \varepsilon$$

Where: \hat{Y} = Change in IFMIS performance
 a = Public finance
 X_1 = Financial Reporting
 X_2 = Budgeting
 X_3 = Internal Control
 X_4 = Government Projects
 $b_{1,2,3,4}$ = Slopes associated with X_1, X_2, X_3 and X_4 respectively
 ε = Error term or the random disturbance term

$$= \sqrt{\frac{\sum(Y - \hat{Y})^2}{n - k - 1}}$$

Where:
 Y = Sample values of the dependent variable
 \hat{Y} = Corresponding estimated values from the regression equation
 n = Number of data points in the sample
 k = Number of independent variables

Qualitative analysis was carried out from the unstructured questions and the secondary data. The results of analysis were evaluated and comparison made in interpreting the research findings. The deductions were used to make conclusions and recommendations of the study.

Research Results

The study had sought to analyze effectiveness of IFMIS on public finance in Kenya through financial reporting, budgeting, internal control, and completed government projects. The results indicated that, 68 percent of the respondents noted accuracy and speed as some of the benefits so far realised. This indicated that IFMIS had improved on accuracy of information reported and at the same time increasing the speed while reducing time taken to report. 34 percent recorded no benefits realised on use of the system. Asked if there was need to improve the current IFMIS in use, 78 percent of the respondents indicated that, the current system needed improvement as some of the modules such as payroll and internal audits were giving ambiguous figures that were either too far away the expectation, i.e. too low or too high. In some instances, an employee will have nil figures as monthly salary, which was not the true scenario. In many occasions the accounts worksheet had posted abnormal figures of an expenditure of one billion shillings for a project worth valued at one hundred thousand shillings.

Majority of the respondents, 84 percent indicated that budgeting have improved by use of IFMIS, as there was timely preparation of the budget and the approvals were done immediately. There

were no delays that used to be occasioned by verification process in the previous system. On what was the difference in budgeting as compared to previous formats of budgeting, 72 percent of the respondents indicated that the system was enhancing budgeting through use of standardised format for all departments in the council. The IFMIS structure of budgeting enabled quick entry of budget elements and the system was useful in checking on the accuracy of data entered. The system is also secure and cannot be modified once entries have been made. 80 percent did agree with the opinion that IFMIS add value to the budgeting system. A number of challenges were faced in ensuring effective internal controls within the county government in using the IFMIS; this was indicated by 65 percent of the respondents who cited that the system was not water tight and would give ambiguous figures in final reports. This was attributed to operating systems and on the structure of the soft ware in use. The complexity of the council's financial systems also contributed to ineffectiveness of IFMIS on internal controls. However, IFMIS accountability requirements have been met effectively in public financial management as was indicated by 71 percent of the respondents. Parking fee collection system, business licensing system, salary processing systems were named as some of the projects that were initiated after the launch of the system.

Regression analysis

This section presents regression analysis used to establish the relationship between the dependent variable, change in IFMIS performance and independent variables which were financial reporting, budgeting, internal controls and government projects. In order to understand the relationship the following regression model was developed.

$$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \varepsilon$$

Where;

\hat{Y} = change in IFMIS performance

a = Public finance

X_1 = Financial reporting

X_2 = Budgeting

X_3 = Internal control

X_4 = Government projects

$b_{1,2,3,4}$ = Slopes associated with X_1 , X_2 , X_3 and X_4 respectively

ε = standard error

From table 1, the coefficient of determination, R^2 explains the amount of variation in the effectiveness of IFMIS in public finance management on financial reporting, budgeting, internal controls and projects implemented, the closer the value to 1, the better the model. From the above model there was a positive relationship between the dependent and independent variable, i.e. the adjusted R^2 was 0.724 (72.4 percent). This means that 72.4 percent of change in effectiveness of IFMIS was accounted for by independent variables i.e., financial reporting,

budgeting, internal control and reporting at 95 percent confidence level. Independent coefficients for X1, X2, X3 and X4 are 0.6332, 0.6092, 0.431, and 0.404 respectively.

Table 1: Regression Analysis Model

Variable	Coefficient	Std Error	t-statistic	Prob.
a	.520	.0552	11.064	0.0000
X ₁	.6332	0.79917	7.638	0.0000
X ₂	.6092	0.68621	5.121	0.0000
X ₃	.431	0.81210	4.652	0.0000
X ₄	.404	0.74146	2.543	0.0001
R-squared	0.878	Mean dependent variable	171.000	
Adjusted R ²	0.724	S.D. dependent variable	16.232	
S.E. regression	4.311	F-Statistic	69.046	
Log likelihood	1204.1	Probability	0.0011	
Durbin Watson stat	70.224			

The study regression model is therefore presented as:

$$Y (72.4\%) = 0.520 + 0.6332 X_1 + 0.6092 X_2 + 0.431 X_3 + 0.404 X_4$$

From the above regression model, holding all independent variables constant the effectiveness of IFMIS on performance of public sector would be 0.520. However as a results of interaction of variables in the IFMIS its established that, a unit increase in financial reporting through IFMIS caused an increase on performance of public sector by a factor of 0.6332, a unit increase in budgeting would cause an increase on performance of public sector by a factor of 0.6092, also a unit increase in internal control would cause an increase on performance by a factor of 0.431, finally unit increase in projects would cause an increase performance by a factor of 0.404. The study established there was strong relationship between the IFMIS and financial reporting (0.6332).

From the findings, IFMIS was found to be effective on performance of public sector, in both quantitative analysis and in regression analysis. This agrees with IMF (2006) findings on use of IFMIS in public finance management. The study found that financial reporting had improved due to use of IFMIS. This also agree with USAID(2008) that reporting systems have been improved by use of a single reliable platform of financial reporting since IFMIS tracks financial events and summarize reports effectively.

The study findings show that there was timely preparation of budgets using IFMIS. This echoes IMF recommendations for use of a comprehensive budget management system for prompt service delivery. As was noted by Bill (2001), although automated systems facilitates many controls during transaction process, the study found that internal controls faced a number of challenges as the system was not water tight in controlling all the financial processes. Heidenholf

(2002) had noted that the difficulties faced by governments in completing projects were related to lack of effective public financial management systems. The study found that through application of IFMIS especially on budgeting, and in reporting, a number of projects initiated through the system have been successfully completed and on time.

Summary of findings

Findings confirm that there were effects on public finance by IFMIS as signified by the individual independent variable analysis. Financial reporting was reported to have significantly improved and IFMIS was found to have been very effective in enhancing financial reporting at the Nairobi County Government. Accuracy and timely budgeting was attributed to effectiveness of IFMIS. Although there were cases of ineffectiveness in internal controls, IFMIS had increased the level of internal controls. A number of challenges were reported to be experienced in ensuring effective internal controls within the Nairobi County Government on using the IFMIS where 65 percent of the respondents cited that the system was not water tight and would give ambiguous figures in final reports. This was attributed to systems operating systems and to the structure of the soft ware in use. The complexity of the county's financial systems also contributed to ineffectiveness of IFMIS on internal controls. The findings also indicated that IFMIS accountability requirements have been met effectively in public financial management.

Summary of the regression equation generated from the study revealed that there was a positive relationship between the effectiveness of IFMIS on performance of public sector and the independent variables; financial reporting, budgeting, internal controls and projects. The adjusted R² was 0.724 (72.4%). This means that 72.4% of change in effectiveness of IFMIS was contributed by study independent variables, i.e., financial reporting, budgeting, internal controls and projects at 95% confidence interval.

Conclusions

The following conclusion can be drawn from the study findings. The study found that a relationship existed between IFMIS and public finance in financial reporting, budgeting, internal control and government projects. This shows that IFMIS had influenced public finance management in Kenya. Financial reporting in the Nairobi County Government was greatly influenced by IFMIS. Budget was adequately managed by IFMIS in public finance in the county. Internal controls although faced with challenges had improved on use of IFMIS. However, if these challenges were addressed as recommended it would further enhance the effectiveness of IFMIS on internal controls in public finance. The study further concludes that all the projects started and completed on IFMIS platform were effectively implemented and therefore, the system is seen as tool in public sector finance management. The study further concludes that if the challenges revealed in internal controls such as casting of ambiguous figures were addressed at the system development level, the system will be of great help in ensuring timely budgeting

and funding of government projects, and therefore facilitating effectiveness in government service delivery in public sector.

Recommendations

The study made recommendations deduced from the findings. Since only 72.4 percent of the entire IFMIS is explained by the four variables; financial reporting, budgeting, internal controls and projects, 27.6 percent is not explained and therefore this study recommends that the IFMIS be enhanced and improved at system development level so that it gives real figure and factor in more functions of operation linked to financial service for better service delivery. The Nairobi County Government should consider prioritization on improvement of internal controls on the IFMIS as the module controls all other modules of the system.

Areas for further research

This study focused on financial reporting, budgeting, internal controls and projects which ultimately explain 72.4% of the IFMIS on performance of public sector. More research studies should be carried out to find out on more other factors that could enhance effectiveness of IFMIS on performance of public sector. While the focus of this study was Nairobi County Government future research studies should consider similar studies in other public institutions so as to give a wider representation of views of IFMIS users for broader factual information.

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