

**INFLUENCE OF ENTERPRISE RESOURCE PLANNING  
SYSTEM ON EXPENDITURE MANAGEMENT AT  
KENYA SUGAR RESEARCH FOUNDATION**

**BY**

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## DECLARATION

This research project is my original work and has not been presented for examination in any University.

Signed.....

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This research project has been presented with our approval as university supervisors.

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## **DEDICATION**

This project is dedicated to my dear husband Charles and our children Zawadi, Baraka and Amani for their tireless efforts of supporting me emotionally and financially towards completion of this project.

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## **ABBREVIATIONS AND ACRONYMS**

ERP	Enterprise Resource Planning
ERS	Economic Recovery Strategy
GoK	Government of Kenya
IFIs	International Financial Institutions
IFMIS	Integrated Financial Management and Information System
IMF	International Monetary Fund
KESREF	Kenya Sugar Research Foundation
KRA	Kenya Revenue Authority
KSF	Key Success Factors
LDC	Least Developed Countries
OECD	Organization for Economic Co-operation and Development
PDA	Personal Digital Assistants
PE	Expenditure Management
PEM	Public Expenditure Management
PER	Public Expenditure Review
RBM	Results-Based Management
SPSS	Statistical Package for the Social Sciences
WB	World Bank

## ABSTRACT

A central pillar of the government's governance and anti-corruption strategy is the reform of the internal management of public resources and administration aimed at reducing the opportunity and incentives for corruption. Kenya Sugar Research Foundation (KESREF) acquired a Microsoft Dynamics NAV enterprise resource planning system in 2009 to automate all its transactions. Prior to automation, there were stand-alone conventional systems that were prone to manipulation, financial malpractices and improprieties. However, since automation, the system was yet to be assessed to establish whether it had efficiently addressed those challenges. The purpose of this research was to establish the influence of Enterprise Resource Planning system on Expenditure Management at KESREF. The study adopted a descriptive survey design with a target population of 100 employees of KESREF. Data was collected using questionnaires which were structured in two sections and were self administered. The study realized a return rate of 83%. Data was categorized into themes, analyzed using simple statistics by SPSS 17.0 and Microsoft excel software and relevant interpretations and conclusions drawn. The study established that there was a significant influence of ERP system on budget allocation efficiency at 73%, while budget utilization based on strategic priorities at 64% and on fiscal discipline at 83%. The second objective on examining how ERP system influences control of expenditure on subsistence allowances, the study found that KESREF was rated at 77% and at 75% on existence of loopholes that allowed the abuse of the same whereas on controls put in place to ensure that surrenders were done on subsistence allowances the rating was at 52%. This was a clear indication much efforts are required to improve on existing controls. On the third objective on establishing how ERP system influences accountability of resources the study found that the rating on ERP enhancement of activity-based costing is at 80%, improvement on accountability of financial resources was at 84% and centralization of approvals was rated highly at 88%. On the fourth objective on assessing how ERP system influences access to financial information the study found that on accuracy of data on resource allocated to staff the rating was at 70%, while on reliability of the information generated from the system the rating was at 80%. However, on reducing reporting lags for auditing purposes, the rating was at 52% which was fairly low. Finally, on the organization culture, it was established that majority 71% of the respondents viewed organization culture to be unhealthy because of abuse of subsistence allowances and subsequently exaggerated travelling reimbursements on fares and taxi. Though abuse of subsistence allowance had been controlled, there was need to have controls on fares and taxi reimbursements. Considering other components, the culture had changed as a result of ERP system. The study met all the four set objectives. The study recommends further research on other areas of expenditure other than subsistence allowance. It is also suggested that a study be done to assess effects of the ERP system as this study majorly looked at the influence of the ERP system, hence there was no correlation to determine the effects. The study's contribution to the body of knowledge is that Key success factors are fundamental to the successful implementation of the ERP system hence they should be carefully taken into consideration in the entire process. Secondly, it is important that continuous monitoring and evaluation of ERP systems is done to ensure loopholes are sealed and finally, that an ERP system if well implemented, is a very useful tool in expenditure management that would help in planning, budgeting, utilization and accounting for the resources.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the study**

A central pillar of the government's governance and anti-corruption strategy is the reform of the internal management of public resources and administration aimed at reducing the opportunity and incentives for corruption (World Bank, 1997). Governments in developing economies are looking for ways to immediately improve their control of revenue and expenditure while also looking in the mid-term and long-term at more effective, transparent and internationally accepted methods of managing the public finances.

Public Expenditure Management (PEM) refers to a set of policies and procedures adopted by an organization to ensure that transactions are processed in the appropriate manner to avoid waste, theft and misuse of resources (Mwindi, 2008). It is a catalyst for economic growth and development. The Economic Recovery Strategy for Wealth and Employment Creation, identified PEM reforms as key to achievement of (i) Fiscal sustainability and balance in the public economy, (ii) Restructuring and re-allocations for growth and poverty alleviation, (iii) Improved public sector performance, and (iv) Efficiency and effectiveness in the public sector, leading to improved service delivery to the Kenya citizenry (World Bank, 1997).

The IMF has assumed a leading role in establishing standards for fiscal transparency. Its “Code of Good Practice”, first issued in 1998 (IMF, 2000: Web Version), sets out four general principles: (i) Clarity of the role and responsibilities of government and public financial management institutions. This should be reflected in a clear legal and administrative framework for fiscal management, ideally, laid out in a Framework Law, such as promulgated by Mozambique in 1997; (ii) Public availability of information on government’s fiscal activity, through the publication of historical series on budgets and timely publication of budgets and accounts; (iii) Open budget preparation, execution and reporting. There should be clear and explicit procedures for execution and monitoring, and timely and comprehensive budget reporting systems; and (iv) An independent national audit body, providing public reporting on the reliability of public expenditure accounting (IMF, 2000: Web Version).

In Ghana, a comprehensive Financial Management Reform Action Plan prepared by a committee in the Ministry of Finance in 2001 identified some of the shortcomings within the PEM system and drafted a programme to address these problems in the short to medium. The committee found: (i) weak budget formulation and implementation; (ii) weak monitoring and evaluation of the administration’s financial resources; (iii) poor data generation and dissemination; (iv) poor flow of information (v) deficiencies in accounting and auditing practices and standards; (vi) Weak regulatory structures insufficient to enforce sanctions against financial malpractice; (viii) obsolete public financial management laws and regulations; (ix) too many government accounts; (x) lack

of awareness, on the part of government employees, of their need to be accountable for their financial responsibilities (WB, Public Expenditure Review 2013).

A similar study in Malawi on economic performance shows that travel costs in civil service are very high, and could be significantly reduced if some of the inefficiencies and malpractices are addressed. The Government, with the assistance of groups of donors, commissioned a review of public expenditures on travel in 2010. The established that; (i) Travel costs amount to between 4-5 percent of GDP, 12-14 percent of total expenditures, and about half of the total expenditure on goods and services. (ii) Travel costs in Malawi are much higher than in comparable countries. For instance, in Uganda and Tanzania, travel costs amount to only 2 and 1.6 percent of GDP respectively. (iii) Domestic travel costs are 80 percent of total travel costs; external travel and vehicle maintenance account for the remaining 20 percent, (iv) Subsistence allowance amounts to about 31 percent of the total domestic travel costs and 22 percent of salaries and (v) Fuel costs amount to 23 percent of domestic travel costs; thus, travel costs are highly sensitive to fuel prices (WB, Public Expenditure Review 2013).

The reasons why travel costs are high in Malawi include; first, poor internal controls leading to widespread malpractices. Some common malpractices include: collecting allowances without travelling, collecting multiple per diems for a single day and using government fuel for private purposes. The analysis suggests that false and questionable claims could amount to 30-40 percent of total claims. Second, there are many common practices which are not necessarily illegal but create inefficiencies. These include

unnecessary travel and needless events to collect allowances and unnecessarily large Government delegations. Third, there is a perception that travel allowances are a salary supplement. The subsistence allowances are a significant portion (23 percent) of the salaries in Malawi (WB, Public Expenditure Review 2013).

Corruption within the public sector remains the biggest challenge, not only in Kenya, but also globally and notoriously difficult to investigate and prosecute. The Index ranks Kenya at position 136 out of 177 countries and territories surveyed, with a score of 27 on a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. Kenya's score in the index remains unchanged from the 2012 index. Evidently whatever efforts that have been put into the fight against corruption have borne little results. A new impetus and approach to this issue is required. (Press Release, 3<sup>rd</sup> December 2013).

Bold reform measures have been implemented over the last four years to institutionalize good governance and the rule of law in Kenya's development process to eliminate rent-seeking opportunities and corruption. These measures are being implemented within the framework of the generally accepted key pillars of any well designed anti-corruption strategy, namely: (i) corruption prevention and public education; (ii) investigation; and (iii) restitution. The aim of the government's anticorruption strategy is to make the public sector operate in ways that make corruption difficult to commit, likely to be detected, and certain to be punished (IFMIS Strategic Plan 2011-2013).

The government is fully aware that the war against corruption cannot be permanently won through investigations and prosecutions alone (IFMIS Strategic Plan 2011-2013). To sustain good governance and a corruption-free environment, other reforms in the economic and social areas are necessary to seal the many loopholes that provide opportunities for corruption. The government has rolled out an Integrated Financial Information Management System (IFMIS) in a number of ministries—notwithstanding the slow progress in operationalizing the system, strengthened the expenditure commitment control systems, improved budget transparency by eliminating unclassified budget votes, and set out clear guidelines for exchequer issues to line ministries, including requirement for up-to-date bank reconciliation, which underpins the Public PEM reforms (IFMIS Strategic Plan 2011-2013).

In 2014, the government launched a new portal to improve transparency and accountability in public service delivery. This comes barely a year after the government unveiled an open data portal that provided large data sets for public consumption. Through the e-Government directorate, the government aims at enabling citizens to access integrated public services via their phones, computers and personal digital assistants (PDA). The new portal is also expected to enhance service delivery and eradicate graft loopholes. Tenders and vacancies in the public service will be accessible on the platform and users will directly post their comments and complaints regarding government services (GoK, 2014).



## **1.2 Statement of the problem**

KESREF was incorporated in 2000 as a private company with liability limited by guarantee under the Companies Act (Cap 486). KESREF acquired a Microsoft Dynamics NAV enterprise resource planning (ERP) system in 2009 to automate all its transactions. This was envisaged to (i) ensure KESREF is able to obtain timely and accurate business information. This would improve decision making and ensure timely response to business opportunities presenting (ii) ensure adequate controls are introduced and maintained over KESREF assets (iii) ensure KESREF human and material resources are efficiently and effectively utilized (iv) reduce paperwork and improve overall productivity and (v) ensure an integrated system with a central database. This would ensure that data is captured at one source and hence improve accuracy (KESREF Strategic Plan 2009 – 2013).

Prior to automation, KESREF used stand-alone Financial Information System. This made decision making difficult due to inaccuracy, delays and lack of relevant information. In FY 2009/2010, 2010/2011 and 2011/2012, submission of statements of accounts and subsequent release of audited accounts was delayed and hampered with missing documents, unbalanced books, unaccounted for moneys, financial malpractices and improprieties (Auditor Generals Letter to Management, 2012). However, since the implementation of the ERP system in 2009, it has not been assessed to establish whether it has solved the challenges of lack of accountability, reduced or eradicated malpractices and financial improprieties and improved access to financial information.

### **1.3 Purpose of the study**

The purpose of this research was to establish the effect of Enterprise Resource Planning system on Expenditure Management at Kenya Sugar Research Foundation.

### **1.4 Objectives of the study**

The study was guided by the following objectives:

- (i) To determine how Enterprise Resource Planning system influences budget allocation and utilization at Kenya Sugar Research Foundation.
- (ii) To examine how Enterprise Resource Planning system influences control of expenditure on subsistence allowances at Kenya Sugar Research Foundation.
- (iii) To establish how Enterprise Resource Planning system influences accountability of resources at Kenya Sugar Research Foundation.
- (iv) To assess how Enterprise Resource Planning system influences access of financial information at Kenya Sugar Research Foundation.

### **1.5 Research Questions**

To achieve the above desired objectives the following research questions were used:

- (i) How does Enterprise Resource Planning system influence budget allocation and utilization?
- (ii) How does Enterprise Resource Planning system influence control of expenditure on subsistence allowances?
- (iii) How does Enterprise Resource Planning system influence accountability of resources?

- (iv) How does Enterprise Resource Planning system influence access of financial information?

## **1.6 Significance of the study**

Studies have been done on the challenges faced in the implementation of ERP systems (Seo, 2013), the benefits of implementing ERPs (Ahmad, 2009; IFMIS Strategic Plan 2011-2013), impediments to successful ERP implementation process (Kim *et al* 2005). However, little has been done on the effect of ERP on expenditure management hence the need for this study. It was hoped that the findings of this research would be useful to various organizations, more specifically the management, donors and sponsors of various research programs. It was also hoped that the results of the study would help identify gaps within the ERP system in KESREF. It was hoped that invaluable benefits to management will emerge on how to streamline the ERP system to enjoy its full benefits. Lastly, it was hoped that the study would add to the existing knowledge bank regarding ERP systems.

## **1.7 Limitations of the study**

KESREF had substations in South Nyanza (Opapo), Mumias and Kilifi (Mtwapa). Due to the vast geographical location, the researcher was not able to reach all the employees physically. To overcome this limitation, the researcher used email to send the questionnaires and get them back online. Secondly, it was common practice for respondents to be subjective in answering questions. This was addressed by requesting the respondents via transmittal letter to be as objective as possible in their responses to enable the study meet its objective.

### **1.8 Delimitations of the study**

The study was restricted to the Staff of Kenya Sugar Research Foundation serving on permanent terms only. Those engaged on casual basis, temporary terms, internship and volunteers did not participate. The study was also delimited to the use of questionnaires as the instrument of data collection because it is the most suitable for this research study. The study was also delimited to the simple descriptive statistical analysis in the methodology because ERP system was treated as an amorphous object without variables under it for correlation analysis.

### **1.9 Basic assumptions of the study**

The study assumed that the Enterprise Resource Planning system was optimally functioning and that no transactions are done out of the ERP system. The researcher also assumes that the respondents gave objective information.

### **1.10 Definition of significant terms as used in the study**

The following terms have the explained meaning in this study:-

**Public Expenditure management** - the plan of an organization and all the methods and procedures adopted by management to assist in ensuring as far as practicable, the orderly and efficient conduct of business, including adherence to management policies, the safeguarding of assets, prevention and detection of fraud and error, the accuracy and completeness of accounting records and the timely preparation of reliable financial information.

**ERP System** – large-scale computer software and hardware systems that attempt to integrate all data and processes of an organization into a unified system, housed in a centralized database which is accessed through a secure network.

**Expenditure** - Compensation, discharge or performance of an obligation, or reimbursement, by giving over something that is of satisfactory value to its recipient, such as money.

**Subsistence allowance** - any allowance paid by the employer to the employee to cover accommodation, meals or incidentals costs where the employee is, by reason of the duties of his or her office or employment, obliged to spend at least one night away from his or her usual place of residence.

**Budget allocation** - the portion of budget authority, outlays, and other resources from a budget resolution that is assigned to a committee that has jurisdiction over such resources.

**Accountability of resources** -The obligation of an individual or organization to account for its activities, accept responsibility for them, and to disclose the results in a transparent manner and includes the responsibility for money or other entrusted property.

**Access of financial information** - The extent to which stakeholders have ready access to any required financial information about a company such as price levels, market depth and audited financial reports.

### **1.11 Organization of the study**

Chapter one gives a general introduction to the study. It presents the background of the study, statement of the problem, purpose of the study, objectives and research questions, significance of the study, limitations and delimitations, basic assumptions and operational definitions of terms used in the. Chapter two contains literature review starting with an introduction, review on thematic areas as per objectives, theoretical framework, conceptual framework and summary. Chapter three has the research methodology starting with introduction, research design, target population, research instruments, data collection procedure, data analysis techniques and ethical considerations. Chapter four contains the data analysis, presentation and interpretation. Chapter five gives the summary of the findings, conclusions and recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This research was intended to assess the effect of enterprise resource planning system on expenditure management at Kenya Sugar Research Foundation. The literature reviewed therefore attempted to lay a platform that would enable the correlation between ERP system as an Independent variable and expenditure management as a dependent variable.

#### **2.2 ERP systems**

Management of information in the current business environment has become a powerful driver in performance of business processes as it determines organizational growth and sustainability (Siriginidi, 2007). With increased globalization, firms are facing unprecedented competition since they operate in a dynamic environment (Watanabe, Hobo 2003). This has seen them invest heavily in information systems in the effort of integrating and coordinating their activities for efficiency and effectiveness. As a result, Western countries have implemented integrated information systems known as Enterprise Resource Planning. Information in business organizations is usually spread across a number of home grown computers with different information systems that house different organizational functions (Zhang, Lee, Huang, Zhang & Huang, 2005); these form information islands that can hardly support business processes in a coherent manner (Hendrickson 2010). For this reason, organizations that need to manage their processes well require enterprise wide systems that are capable for integrating enterprise business functions (Watanabe and Hobo 2003).

Enterprise Resources Planning (ERP) system is a commercial and configurable software package that manages and integrates all the information flowing through the functional areas in the organization (Chen 2011). These include financial, accounting, supply chain and customer information, sales and distribution, production planning, materials management and human resources management. ERP system consists of software support modules where information is flowing between them and they share a central database (Clemmons, Simon 2001). It has its roots in the 1990s manufacturing industry, where earlier forms of the applications were used for manufacturing resource planning (MRP) and computer integrated manufacturing (CIM).

The term ERP describes an emerging category of hardware and software solutions that expanded upon and extended the scope of traditional manufacturing resource planning (MRP) systems (Siriginidi, 2007). Whereas the focus of MRP is on manufacturing processes, ERP systems look at a much broader integration of information or data management functions within the organization. An ERP system is an attempt to create an integrated tool that manages different functions within an organization. A comprehensive definition adopted was that Enterprise Resources Planning (ERP) system is a commercial and configurable software package that manages and integrates all the information flowing through the functional areas in the organization (Chen 2011). They can link different areas of an organization, such as manufacturing, order management, financial systems, human resources, suppliers and customers, into a tightly integrated system with shared data and visibility (Chen, 2001).



The reliance and dependence on ERP systems have grown substantially since the early 1990s, and the purchase and implementation of ERP systems continues to be one of the fastest growing segments of the information technology (IT) sector (Chen 2011). It is postulated that the reason behind this phenomenal growth is the promise that ERP systems can provide an integrated business computing solution and improve a company's ability to compete in the marketplace.

ERP systems hold the promise of improving business processes and decreasing costs (Siriginidi, 2007), as these systems facilitate communication and coordination, centralize administrative activities, improve ability to deploy new information system functionality, and reduce information system maintenance costs (Siau, 2004). A successfully implemented ERP system can be the backbone of business intelligence for an organization, by giving managers an integrated view of the business processes (Parr and Shanks, 2000; Nash 2000). ERP systems provide seamless integration of processes across functional areas with improved workflow, standardization of various business practices and access to real-time up-to-date data (Chen, 2011; Ehie and Madsen, 2005). The key success factors in ERP implementation include:

### **2.2.1 Clear goals, objectives, scope and planning**

Aduri *et al.* (2002) identified clearly defined business and strategic objectives as the most critical factor. Emphasizing this, Al-Mashari *et al* (2003), Khan (2002), Umble *et al.* (2002) and Parr *et al* (2000) said it is having a clear defined vision/mission and the formulation of the right policies/strategies that can serve as the blueprint for any

organization success. Clear goals and objectives, should be specific and operational and indicate the general directions of the project Somers et al (2004). Akkermans and Helden (2002) added that clear goals and objectives seem to form a clear-cut CSF, but can actually be rather problematic. This is because, at the outset of an ERP project, it is often very difficult to determine them in a clear-cut manner. Likewise, consensus among managers about the determining objectives of the ERP implementation, and how these objectives will be monitored and measured, will lead to higher user satisfaction, Bradford and Florin, (2003). Well defined objectives help to keep the project constantly focused, and are essential for analyzing and measuring success. They must clearly define objectives, they must be measurable and controllable, and the savings must be quantified for each objective (Welti, 1999).

Project scope is related with concerns of project goals clarification and their congruence with the organizational mission and strategic goals Estaves *et al* (2002). Reif (2001) pointed out that project scope is defined as closely corresponding to the range of outcomes and the portions of the organization that will be affected by the ERP system. After that, extensive planning and an understanding of the concepts of ERP system will result in the company saving much more time in the implementation Al-Sehali (2000) and the implementation plan and subsequent progress should be communicated regularly to employees, suppliers and customers (Mabert *et al.*, 2003).

### **2.2. 2 User training and education**

Lack of user training and not understanding how ERP system works, appear to be responsible for many problems ERP implementations and failures, Somers *et al* (2004).

Some authors, such as Al-Mashari *et al* (2003), Somers *et al* (2004), Aduri *et al* (2002), Bradford and Florin, (2003), Bancroft (1998), Estaves (2002) and Akkermans (2002) added that inadequate training has been one of the significant reasons of many ERP systems failure. If the employees do not understand how a system works, they will invent their own processes using those parts of the system they are able to manipulate, Umble *et al* (2002). So, the full benefits of ERP cannot be realized until end users are using the new system properly. The main reason for education and training is to increase the expertise and knowledge level of the people within the company. Therefore, training strategies should be developed in advance and continually updated during the implementation Mabert *et al* (2003). Education and training refers to the process of providing management and employees with the logic and overall concepts of ERP system, Zhang *et al* (2002). To make end user training successful, the training should start early, preferably well before the implementation begins, Umble *et al*, (2002). Three aspects concerning the contents of training are Zhang *et al* (2002), (1) logic and concepts of ERP; (2) features of the ERP system software; and (3) hands-on training.

Training takes on a moderately important role during the latter stages, when training on continuous basis is required to meet the changing needs of the business and enhance employee skills, Somers, (2004) It may only take days to change hardware and software, but it takes weeks or months to scale learning curves, Al-Sehali, (2000). A particular challenge in ERP implementation is to select an appropriate plan for end-user training and education Al-Mashari *et al* (2003). Executives often dramatically underestimate the level of education and training because of associated costs, Umble *et al*, (2002) and he

added it has been suggested that reserving 10 to 15 % of the total ERP implementation budgeted for training will give an organization an 80% chance of implementation success.

### **2.2.3 Change management**

The existing organizational structure and processes found in most companies are not compatible with the structure, tools and types of information provided by ERP systems, Umble *et al* (2002) because every ERP system imposes its own logic on an organization's strategy, organization and culture. These changes may significantly affect organizational structures, policies, processes and employees, and can cause resistance, confusion, redundancies, and errors if not managed effectively. Many ERP implementations fail to achieve expected benefits possibly because companies underestimate the efforts involved in change management Somers and Nelson (2004), Al-Mashari *et al*, (2003). Because of that, it is important that an organization goes through a carefully planned transformation that is based on adequate strategy and well-defined methodology of implementation, Bancoft *et al* (1998). It will not change overnight and strategies need to be used to get employees not only to change how they work but also how they behave. Some organizations need to make long-term plans to begin to change the culture long before ERP is implemented, Skok and Legge (2002). Such activities appear to be important from the early stages of a project and continue throughout the adaptation and acceptance stages, Somers and Nelson (2004). When people are not properly prepared for the imminent changes, then denial, resistance and chaos will be predictable consequences of the changes created by the implementation. All employees must be made to understand how the new system can both benefit the company and make their jobs easier, (Umble *et al*., 2002).

#### **2.2.4 Effective communication**

The importance of communication across different business functions and departments is well known in the IT implementation literature, because communication has a high impact from initiation phase until system acceptance, as it helps to minimize possible user resistance. Communication has to cover the scope, objectives and tasks of an ERP implementation project, Al-Mashari *et al*, (2003). We need effective communication in project team and within the organization. Good communication in project team can be ensured by: weekly team meetings where team and project status updates are provided; postings on the company intranet; formal and informal information sessions; etc Khan (2002). Project team also should be on same location in the same area (floor) that they can have common meeting, etc. The progress of the ERP project should be readily discernible to all of the employees in the organization, Al-Sehali (2000). It has to include project status, impending changes, training announcements through company intranet, newsletters, e-mails, etc. Some authors such as Al-Mashari *et al*, (2003) and Somers and Nelson, (2004) suggested that organization should have a communication plan. The communication plan has to detail several areas including the rationale for the ERP implementation, details of the business process management change, demonstration of applicable software modules, briefings of change management strategies and tactics, and establishment of contact points (Bancoft *et al.*, 1998).

#### **2.2.5 User involvement**

ERP systems cross-functional and departmental boundaries, cooperation and involvement of all people in the organization are essential, Somers and Nelson (2004). System implementation represents a threat to users perceptions of control over their work and a

period of transition during which users must cope with differences between old and new work systems, Gattiker, (2002). Involving users, in the stage of defining organizational information system needs, can decrease their resistance to the potential ERP systems, since by which users have feelings that they are the people who choose and make the decision. User involvement refers to participation in the system development and implementation processes by representatives of the target user groups. There are two areas for user involvement, Zhang *et al* (2002): (1) users involvement in the stage of definition of the company's ERP system needs, and (2) users participating in the implementation of ERP systems. Open and honest communication across the organization is of paramount importance to satisfy the information needs of users, and to prevent the circulation of unfounded rumours, Welti (1999). Users need reliable information, because any project affects them directly and may even threaten their jobs. These help the user to become acquainted with the new situation, to build up confidence in the project and its members, and finally to accept the project.

#### **2.2.6 Data analysis and conversion**

The quality of pre-existing data and information systems has been cited as an important factor in the successful implementation of ERP system, Gattiker (2002). If problems with data are not fixed in legacy systems, they will be apparent in the new system as well, Wallace et al (2001). ERP modules are intricately linked to one another, inaccurate data input into one module will adversely affect the functioning of other modules, Zhang *et al* (2002), Umble *et al* (2002). The data residing in the legacy systems, both master data and transaction data, needs to be migrated to ERP system, Khan (2002). This effort often involves translating or amalgamating existing data to conform to the specifications

required by the ERP system, Reif (2001), Conversion and interfaces must be ready in good time to allow for the data transfer and data verification, Welti, (1999). There are two places where this data can be checked: on legacy side before migration or on ERP site after migration, Khan (2002). System testing is defined as a set of tasks designed to assure that the ERP system is functioning as desired. It should include testing of all types of potential situations, ensuring that the results produced in the test environment match those expected to occur.

Khan (2002) named it as integration test. Integration testing should be performed using business scenarios that are very comprehensive. The data should be checked and tested after conversion by the project members and key users before it is released into production, Zhang *et al* (2002) and Welti (1999). Data issues are critical from initiation through adaptation of the system and are moderately important during system acceptance and use, Somers and Nelson (2004).

### **2.2.7 Integration of modules**

The key idea behind the use of ERP Systems is to plan and integrate enterprise-wide resources. As also mentioned by Yang *et al* (2007), having implemented an ERP system an organization becomes capable of providing different levels of information about diverse range of intra-organizational processes to its employees and project partners by integrating the information from multiple resources. Literature in the area points out numerous different definitions about ERP such as Yang *et al* (2007). In light of the definitions provided in the literature, an ERP system can be described as: “An

information system which integrates processes in different units and departments of an enterprise within a single information acquiring/processing platform and a unique data infrastructure which acts as a unique information resource that provides most up to date information for the processes”.

An ERP system is formed by the integration of a set of software components (modules), which (usually) use a shared database containing multiple data models defined according to the needs of different departments. The database of an ERP system can be reached from various different end-user interfaces. This unique architecture is one of the definitive features of the ERP system.

### **2.3 The concept of ERPs and Expenditure Management**

Expectations for ERP systems to change expenditure management were introduced by Kaplan and Cooper (1998), especially with the fourth of their four-stage model for cost and performance measurement systems. When a company had first stage systems, those systems are basically inadequate for all purposes, even for financial reporting. When they make improvements, the first stage companies tend to add financial systems to meet regulatory requirements. As a result, they evolve into second stage systems where financial reporting systems dominate; these companies are financial reporting driven. The companies with third stage systems have customized, managerially relevant cost management, financial reporting, and performance measurement systems; however, these systems are standalone. ERP systems only occur with the fourth stage systems where the ERP systems integrate cost management, financial reporting, and performance measurement (Kaplan and Cooper, 1998).



An ERP system has a common data structure that permits data to be entered and accessed from anywhere in the world (Kaplan and Cooper, 1998). An activity-based costing system is an integral part of an ERP system, and thus managers have information about present and future activities at operational levels when making decisions (Kaplan and Cooper, 1998). With activity-based information, monetary distortions can be reduced. Feedback with activity information improves learning. Thus, in managing at the activity level, costing, budgeting, performance measurement, bonuses, resource spending, forecasting, budgeting, production, etc. can be improved in terms of efficiency and effectiveness. An ERP system will allow the company to obtain cost and performance information more frequently, even daily, rather than waiting a month (Kaplan and Cooper, 1998).

Kaplan and Cooper (1998) say the integration with ERP systems allow all managerial processes, including budgeting, what-if analysis, and transfer pricing to be also based on activities rather than only dollars. Activity-based budgeting gives companies the opportunity to authorize and control resources based on accurate demand information. Accuracy increases because activity-based budgeting is based on facts, and less upon power, influence, and negotiating ability. Furthermore, the activity-level focus of budgeting leads to more accuracy in forecasting the demands for all direct and, especially indirect activities.

Kaplan and Cooper's (1998) and Davenport (1998) wrote "the business world's embrace of enterprise systems may in fact be the most important development in the corporate use of information technology in the 1990s." Davenport (1998) expected companies to change with the implementation of ERP systems: In addition to having important strategic implications, enterprise systems also have a direct, and often paradoxical, impact on a company's organization and culture. On the one hand, by providing universal, real-time access to operating and financial data, the systems allow companies to streamline their management structures, creating flatter, more flexible, and more democratic organizations. On the other hand, they also involve the centralization of control over information and the standardization of processes, which are qualities more consistent with hierarchical, command-and-control organizations with uniform cultures.

The paradox with ERP systems; streamlined, flatter, and more flexible and democratic (that is, more control at the frontline) versus centralization of control over information and the standardization of processes (that is, more control at the centre) makes Davenport (1998) ask how will ERP systems affect companies? Another equally relevant question would be, how will ERP systems affect expenditure management?

Taken together, Kaplan and Cooper (1998) and Davenport (1998) suggest that ERP systems will change companies, but these researchers do not specify the nature of these changes. They certainly do not explicitly specify how ERP systems will impact expenditure management. Nevertheless, readers do not have to stretch their imaginations to infer that changes will occur to expenditure management from the integration among

cost management, financial reporting, performance measurement, and all other systems. Thus, it is not surprising that there has been some exploratory research prompted by Kaplan and Cooper (1998) and Davenport (1998) on the impact of ERP systems on expenditure management. To date the research on the impact of ERP systems on expenditure management can best be described as preliminary. It has involved case studies of one or two companies at a time and some field studies. The findings from these studies have been largely anecdotal. Also, some have been deductive, in that arguments based on ERP attributes have been made on how expenditure management should be affected.

In a field study, Kaplan and Cooper (1998) described activity-based capital budgeting at a division of a US telecommunications company. The activity information was linked to the financial accounting system, thus behaving like an ERP system for the purpose of capital budgeting. This approach went beyond the traditional capital budgeting by linking the incremental monetary revenues and costs with underlying activities. The authors concluded that by separately identifying the level of revenues and costs associated with process activities, the uncertainty with such activities and related revenues and costs can be closely examined. They added that this activity-level capital budgeting gives managers far more information and understanding than possible from the traditional financial simulation of aggregated income statement approach.

Kaplan and Cooper (1998) field study suggests that ERP systems can increase the effectiveness of capital budgeting by anchoring financial numbers to activities rather than

stopping at monetary measures with pre-ERP practices. Their arguments were convincing, but they could not be verified. Hope and Fraser (2001; 2003) disclosed that some companies have ceased budgeting. Four reasons are given for why existing budgeting processes were being considered for abandonment: (i) few companies are satisfied with their budgeting processes, (ii) far too much time is spent on budgeting and too little time is spent on strategy (iii) Financial capital is now a small part of market value (iv) Budgeting is expensive and adds little value either to the company or its users (Hope and Fraser, 2001). They claimed that hierarchical companies have devolved to networks, where the planning capacity and control inherent in budgeting can be accomplished by other means (Hope and Fraser, 2003). ERP systems, which they label enterprise-wide information systems, are important for eliminating budgeting, particularly when accompanied by the balanced scorecard, shareholder value models such as EVA, activity-based costing and management, rolling forecasts, and benchmarking (Hope and Fraser, 2001).

Some of the companies identified by Hope and Fraser (2003) for example, the Scandinavian bank, Svenska Handelsbanken, abandoned budgeting before ERP systems. This suggests that, for those companies, ERP systems would not have been essential for effectiveness without budgeting. Perhaps ERP systems will allow contemporary companies to be effectiveness without budgeting. The impact of ERP systems on budgeting is still an empirical question.

It was noted that the findings of Kaplan and Cooper (1998) on the impact of information technology on capital budgeting and the findings of Hope and Fraser (2001, 2003) on the impact of information technology on budgeting were not accompanied by adequate empirical support. Additional empirical testing was provided by Granlund and Malmi (2002). Following from Kaplan and Cooper (1998), they noted the “lack of studies examining the organizational and behavioural aspects of these systems” (p.300). Their purpose was “to examine the effects of integrated, enterprise-wide information systems on management accounting and management accountants’ work.” Noting there was “no scientific evidence on the research topic”, they decided to use an exploratory field study to provide “insights” for subsequent research. Sixteen persons were interviewed at 10 large, almost exclusively SAP R/3, adopters. They found no major direct or indirect impacts by ERP on management accounting systems. The changes that did occur did not lead to changes in the logic of expenditure management systems.

Although none of the recent studies on the impact of ERP systems have indicated changes to expenditure management systems, there have been some studies that indicated changes to the work of management accountants, e.g., Burns and Baldvinsdottir (1999), Quattrone and Hopper (2001), Granlund and Malmi (2002), Baxendale and Jama (2003), and Scapens and Jazayeri (2003). In a field study of a single company, Burns and Baldvinsdottir (1999) observed that SAP centralized the accounting function and decentralized control to many people in the company who became “hybrid accountants”. Traditional core activity of management accountants, posting the books, was delegated to others in the company. They cite the director of finance saying: “They may post the odd

correctional entry. In fact some analysts aren't allowed to post. They generally are analytical people rather than analytical accountants." Management accountants have become analysts.

Quattrone and Hopper (2001) undertook two case studies of ERP implementations to obtain insights into "how new systems give rise to multiple spaces and times within companies." The case studies were conducted over 12 months at multinational companies that were implementing SAP systems. One study included various hierarchical levels and locations in a large American multinational company. Twenty managers were interviewed. The other was the sales and distribution function of the European headquarters of a Japanese multinational company. Twelve managers were interviewed. They found that with the implementation of the ERP system, control went from a single point or "totalitarian" view of control with the controller during periodic reporting to a multiplicity of loci of control available anytime. Anyone with access to an ERP system can "exert control as they wish, slicing and dicing the organization and information, and defining what should be controlled, how and why, differently." They add that, "integrated business functions decide what is best for each business area and accountants analyze how this can be obtained." They conclude by saying that if the centres of control are changed as with ERP implementations, it is necessary to re-conceptualize accounting and control.

Granlund and Malmi (2002), also studied the effects of ERP systems on management accountants' work with their preliminary and brief field studies at 10 companies. The

working hypothesis that ERP systems would allow management accountants to devote more time to business analysis was supported by five of the 10 companies. Baxendale and Jama (2003), from an assessment of ERP system functionality, conclude that management accounting data integrity and reliability will increase. The use of relational databases allows information to be shared rather than re-entered. Formal processes exist in ERP systems to ensure reliability by automatic counts and reconciliations. These conclusions were not empirically tested.

Scapens and Jazayeri (2003, p. 203) reviewed the literature to find that “ERP systems are having relatively limited impacts on management accounting and management accountants.” In view of the literature, the purpose of Scapens and Jazayeri (2003) was “to explore the processes of change and to examine in more depth the nature of the changes in management accounting which have accompanied the implementation of an ERP system within a specific organization.” The field study was conducted from 1996 to 1999 at the European division of a US company. The process focus to study management accounting was crucial, according to these authors, as ERP systems are process systems. The latter leads to more information sharing and teamwork on one hand and greater centralization of information processing activities. Although the authors considered three years sufficient to study the process of change, this would not appear so, given the existence of institutional forces (Burns and Scapens, 2000).

Scapens and Jazayeri (2003) judged the ERP system to have led to a number of changes to management accounting, i.e., the elimination of routine jobs, line managers developing

accounting knowledge, the production of more forward-looking information, and a wider role for management accountants. More specifically, Scapens and Jazayeri (2003) say the move from record-keeper to internal consultant requires management accountants to acquire new skills. Rather than being limited to information reporting, management accountants need to be advocates and change agents. Management accountants need to sell ideas for accomplishing strategy with information.

Scapens and Jazayeri (2003) were not convinced that ERP systems drive the changes to expenditure management. In other words, they are unclear as to the causes of the changes to expenditure management. These findings on the impact of ERP systems on expenditure management do not completely agree that ERP systems will change the work of management accountants in particular ways. They nevertheless suggest that management accountants will be less likely to do routine tasks and more likely to be involved with analysis. Similarly, they suggest that the output of management accountants will likely be more precise, more accurate and produced more frequently. However, there is no conclusive evidence to support these expectations from the research on how ERP systems impact capital budgeting, budgeting, and other components of a expenditure management.

In summary, there is no clear conclusion in the literature on the potential for ERP systems to change expenditure management, and clear indications as well on changes that have actually occurred. Perhaps expenditure management will take longer to reflect changes because of institutional forces (Burns and Scapens, 2000).



## **2.4 ERPs and Budget Processing and Utilization**

Although public expenditure management systems vary from one country to another, it necessitates (Campos, Pradhan, 1997) accomplishing some complicated and determined duties. The basic goals (principles) of public expenditure management are accomplishing macro financial discipline, strategic priorities (productive source allocation) and functional application (technical productivity). All three goals are in very strong interaction (World Bank, Public Expenditure Management Handbook, 1998) both theoretically and practically. These three objectives are complementary and interdependent. Without fiscal discipline, it is impossible to achieve effective prioritization and implementation of policy priorities and programmes. Improving the internal management systems to achieve efficiency without a hard constraint is not credible. But mere fiscal discipline in the presence of arbitrary resource allocation and inefficient operations is inherently unsustainable.

Fiscal discipline has a close relation with the control of budget magnitudes effectively and it assumes a binding role on both macro level and expenditure unit by means of expenditure ceilings (Allen, Tommasi, 2001) In macro financial discipline, budget totals do not only arrange expenditure demands; results in decisions implemented must be clear as well. These totals should be set before individual spending decisions are made, and should be sustainable over medium-term and beyond (Schick, 1999).

In providing financial discipline, utilizing effective rules leads to differences among countries. While some countries barely comply with the rules related to current

expenditures, some incorporate these rules in capital expenditures as well (Schick, 2001). Providing financial discipline covers expenditure controls, and it necessitates struggling for realistic income and expenditure approximations. Institutional arrangements for aggregate fiscal discipline can range from formal constitutional restraints on aggregate expenditure (Indonesia) through formal laws (Maastricht, New Zealand, Australia) to public commitments by the executive (with or without the commitment of the legislature – the U.S.) (World Bank, Public Expenditure Management Handbook, 1998). For many countries, international financial institutions may play a key role, particularly in the absence of open financial markets. Independent Central Banks can also play an important role in disciplining aggregate expenditure (World Bank, Public Expenditure Management Handbook, 1998).

Efficiency in allocation is the skill of distributing resources in budget priorities. Here, replacing inefficient activities with more productive activities, leaving former priorities to newer ones and accomplishing these values in line with the state's goals are of great significance (Allen and Tommasi, 2001). Efficiency in source distribution can be done among various units of the state. Expenditures must be based on the government's priorities and the efficiency of public programs. Budget system should act according to each important step of reallocation of sources (Schick, 1999).

The effective utilization of budget sources as technically and functionally depends on applicable capacity of programs and providing of services with lower cost or minimizing per capita (Allen, Tommasi, 2001). Competing of public administrations with market

prices and obtaining sustainable gains is contingent upon producing assets and services with the lowest cost (Schick, 1999).

## **2.5 ERPs and Control of Expenditure on Subsistence Allowances**

According to the high internal control system efficiency, reliability of financial reporting is the only leg of the high quality of internal control efficiency system of internal control Hayes *et al*, (2005). The meaning is internal controls are important to the company's financial trustworthiness for stakeholders, investors or everyone who is using information from financial reporting for decision.

Travel costs in civil service are very high, and could be significantly reduced if some of the inefficiencies and malpractices are addressed. The following are common scenarios in subsistence allowances: (i) Travel costs amount to between 4-5 percent of GDP, 12-14 percent of total expenditures, and about half of the total expenditure on goods and services. (iii) Domestic travel costs are 80 percent of total travel costs; external travel and vehicle maintenance account for the remaining 20 percent, (iv) Subsistence allowance amounts to about 31 percent of the total domestic travel costs and 22 percent of salaries and (v) Fuel costs amount to 23 percent of domestic travel costs; thus, travel costs are highly sensitive to fuel prices (WB, Public Expenditure Review 2013).

There reasons why travel costs are high include: First, poor internal controls in Ministries and Departments leading to widespread malpractices. Some common malpractices include: collecting allowances without travelling, collecting multiple per diems for a single day, using government fuel for private purposes, kickbacks for vehicle

service, and not crediting the Government for refunds. Second, there are many common practices which are not necessarily illegal but create inefficiencies. These include unnecessary travel and needless events to collect allowances and unnecessarily large Government delegations. Third, there is a perception that travel allowances are a salary supplement. The subsistence allowances are a significant portion (23 percent) of the salaries in Malawi (WB, Public Expenditure Review 2013).

Internal control effectiveness will be met when the manager designs a reasonable assurance (Reid & Ashelby, 2002) that can achieve company goals and objectives. Besides, internal control effectiveness is important to the entity level of the firm especially it provides reliable financial information, safeguard assets and records, encourages adherence to prescribes policies and comply with regulatory agencies. The basic concepts of internal controls indicate that management must establish and maintain the entity's controls by risk management efficiency, should provide a quality of compliance applied to all employees with potential of intra organization communication, and effective by a continuous monitoring adequacy (Reid & Ashelby, 2002).

## **2.6 ERPs on Accountability of Financial Resources**

The traditional overhead allocation system does not provide managers with the types of information and level of detail needed to make good decisions (Burch, 1994). Burch argues that the use of only a few allocation bases could result in product cost valuations that do not reflect the true product costs. Thus integration on ERP would provide details needed to make good decisions.

Activity based costing is a method of measuring the cost and performance of activities and cost objects. The idea behind activity based costing is that cost objects, which may be products, services, jobs, projects or anything the accountant is trying to cost, consume activities and in turn, activities consume resources (Burch, 1994). Activity-based costing systems try to determine what is really driving costs and charge a cost object for only the overhead it actually consumes.

Kaplan and Cooper (1998) say the integration with ERP systems allow all managerial processes, including budgeting, what-if analysis, and transfer pricing to be also based on activities. Activity-based budgeting gives companies the opportunity to authorize and control resources based on accurate demand information. Accuracy increases because activity-based budgeting is based on facts, and less upon power, influence, and negotiating ability. Furthermore, the activity-level focus of budgeting leads to more accuracy in forecasting the demands for all direct and, especially indirect activities.

Davenport (1998) wrote “the business world’s embrace of enterprise systems may in fact be the most important development in the corporate use of information technology in the 1990s.” Davenport (1998) expected companies to change with the implementation of ERP systems: In addition to having important strategic implications, enterprise systems also have a direct, and often paradoxical, impact on a company’s organization and culture. On the one hand, by providing universal, real-time access to operating and financial data, the systems allow companies to streamline their management structures, creating flatter, more flexible, and more democratic organizations. On the other hand, they also involve the centralization of control over information and the standardization of

processes, which are qualities more consistent with hierarchical, command-and-control organizations with uniform cultures.

## **2.7 ERPs and Access to Financial Information**

The implementation and utilization of ERP systems represent a radical change from the legacy systems of the past as business functions are integrally linked through workflow automation and one authoritative database. By 1999, 70 percent of Fortune 1000 firms had either adopted or were in the process of implementing ERP systems (Cerullo and Cerullo 2000). The potential advantages of ERP systems (such as assisting business process reengineering, reducing complications with Sarbanes-Oxley Act compliance) have made them the system of choice among many corporations (O’Leary 2000).

ERP systems collect and disseminate timely information to managers and thus improve their ability to process and analyze accounting information (Davenport 1998). ERP systems provide management with a unified enterprise view of the firm’s financial condition at all times. In addition, these integrated systems eliminate barriers between firm functions, allowing managers unprecedented access to accounting information (O’Leary 2000).

The standardized, automated, and integrated ERP system environment is also expected to efficiently process transactions and reduce reporting lags, (O’Leary, 2000). Anecdotal evidence supports this expectation, indicating that ERP system adoptions positively affect the timeliness of financial accounting information by decreasing the financial close cycle (Brown 1997; Jensen and Johnson 1999). Thus, if managers are motivated to quickly

disseminate accounting information to external users, ERP adoptions should assist in this process. Yet, to our knowledge, there is no empirical evidence to support the conclusion that ERP adoptions enhance firms' abilities to manage the timing of their earnings release dates. This perceived benefit of ERP adoption is now especially salient as the SEC has substantially reduced the 10-K filing period for large accelerated and accelerated filers from 90 to 60 and 75 days, respectively.

Poston and Grabski (2001) state that one of the two chief benefits of ERP system implementations is enhanced managerial decision-making via the provision of accurate and timely enterprise-wide information. With respect to financial reporting, ERP systems are expected to collect and disseminate timely operational data (e.g., customer relations) to managers and thus improve their ability to process and analyze related accounting information/accruals (such as allowance for doubtful accounts) (Davenport 1998; Hitt *et al.* 2002). Integrated systems allow managers to share information, and this information can be used by managers to better monitor firm performance (Davenport 2000). ERP systems also provide management with real-time information concerning the financial condition of the company and eliminate barriers between accounting cycles, allowing managers unprecedented access to accounting information (Dillon 1999; O'Leary 2000).

## **2.8 Organization culture**

The intervening variable in this study is the organization culture. For purposes of this study, this organization culture was considered to have a significant influence on the effects of ERPs and expenditure management.

Ravasi and Schultz (2006) stated that organizational culture is a set of shared mental assumptions that guide interpretation and action in organizations by defining appropriate behavior for various situations. Schein (1992), Deal and Kennedy (2000) and Kotter (1992) advanced the idea that organizations often have very differing cultures as well as subcultures. According to Needle (2004), organizational culture represents the collective values, beliefs and principles of organizational members and is a product of such factors as history, product, market, technology, and strategy, type of employees, management style, and national culture. Corporate culture on the other hand refers to those cultures deliberately created by management to achieve specific strategic ends.

According to Schein (1992), culture is the most difficult organizational attribute to change, outlasting organizational products, services, founders and leadership and all other physical attributes of the organization. Organizations should strive for what is considered a "healthy" organizational culture in order to increase productivity, growth, efficiency and reduce counterproductive behavior and turnover of employees. A variety of characteristics describe a healthy culture, including: Acceptance and appreciation for diversity; Regard for and fair treatment of each employee as well as respect for each employee's contribution to the company; Employee pride and enthusiasm for the organization and the work performed; Equal opportunity for each employee to realize their full potential within the company; Strong communication with all employees regarding policies and company issues; Strong company leaders with a strong sense of direction and purpose; Ability to compete in industry innovation and customer service, as well as price; Lower than average turnover rates (perpetuated by a healthy culture) and Investment in learning, training, and employee knowledge (Schein 1992).



## **2.9 Theoretical Framework:**

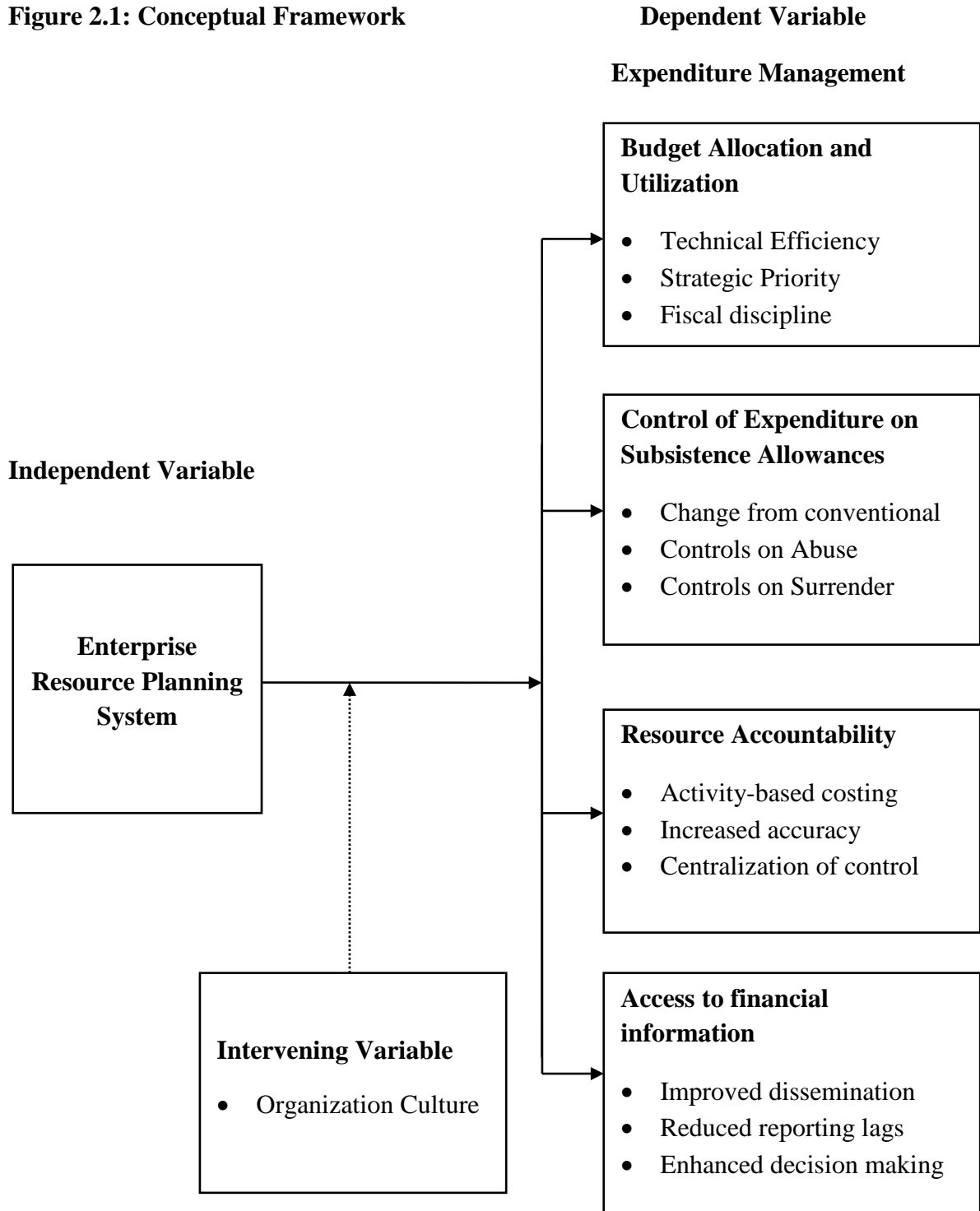
This study will be based on the agency theory by Barlie and Means (1932). It describes organizations as necessary structures to maintain contracts and enable exercise of control which minimizes opportunistic behavior of agents. Agency theory has been examined by academics in many different fields of study. Examples include: accounting (Demski and Feltham 1978), economics (Spence and Zeckhauser 1971), finance (Fama 1980), marketing (Basu *et al.* 1985), political science (Mitnick 1982), and organizational behavior (Eisenhardt, 1989). Agency relationships exist throughout organizations, giving rise to the so called “agency problem,” where an agent works in his or her own self-interest instead of on behalf of the principal (Mahaney and Lederer 2003). The problem is compounded by information asymmetry because the agent has access to information that the principal does not have, therefore the principal cannot monitor the actions of the agent. Two approaches are used in practice to address this problem. One is to design outcome based contracts between the principal and agent such that the interests of the two parties become more congruent, therefore reducing the need for the principal to monitor the actions of the agent. The second approach is to provide information systems that allow the principal to more easily monitor the actions of the agent (Eisenhardt, 1989). Recent advances in information technology have made this second approach more feasible as computer hardware and software becomes more widely dispersed throughout society, therefore, this theory is relevant to this study.

## **2.10 Conceptual Framework**

The study conceptualizes the Enterprise Resource Planning system as the independent variable and Expenditure Management as the dependent variable. Treating the

independent variable as an amorphous object, it is presumed to have a direct impact on expenditure management. Expenditure management is broken into four measurable units comprising of budget processing and utilization, expenditure on subsistence allowances, accountability and access to financial information. Figure 2.1 below illustrates the relationship.

**Figure 2.1: Conceptual Framework**



**Source:** Developed from Literature review

## **2.10 Summary of Literature**

Literature reviewed factored the key success factors in ERP implementation. It showed the expectations for ERP systems to change expenditure management focusing on the functions of management accountants in organizations. It was evident that most implanting institutions were skeptical on the influence of ERP on budgeting processes but were impressed with activity based budgeting and costing. Empirical findings pointed to lack of studies examining the organizational and behavioural aspects of the ERP systems. The studies had conflicting conclusions on the effect of enterprise resource planning system on management accounting and expenditure management in general.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This Chapter focused on the methods that were used to collect data and analyze it. It focused on the research design, the population was studied, data collection, methods of verifying reliability and validity of data and methods, matters regarding ethics and the limitations of the methodology used as well as the conclusions drawn from the methodologies used.

#### **3.2 Research design**

Research design refers to the systematic steps set up to accomplish the purpose of the study. Survey design, one of the types of descriptive research, was adopted for this study. Survey method gathers data from a relatively large number of cases at a particular time. This enabled data to be gathered easily within one week. Since survey is concerned with the statistics that result when data are abstracted from a number of individuals and not concerned with characteristics of individuals as individuals, it is essentially cross-sectional (Best and Khan, 2006). This allowed the collection of data from a cross section of professionals within the organization. Survey designs are popular because of their simplicity and ease of administration.

#### **3.3 Target Population**

The target population of the study comprised of 100 employees of KESREF. The population was grouped into 8 strata; HR and Administration 34, Finance and Audit 8,

Procurement and 8, Agricultural Engineering 6, Economics and Biometrics 5, Milling and Processing 9, Technology Transfer 15 and Crop Development 15 (KESREF Staff Data, August 2014). Due to the small population, the study employed complete enumeration of the 100 employees of KESREF who were on duty at the time of the study excluding staff who were away for various reasons, interns and temporary employees. This method was preferred because it provides a true measure of the population (no sampling error), benchmark data would be obtained for future studies and detailed information about small sub-groups within the population was more likely to be available, (Best and Khan, 2006).

**Table 3.1: Target Population**

<b>Department</b>	<b>KESREF Staff Population</b>	<b>Target Population</b>
HR & Administration	37	37
Finance & Audit	7	7
Procurement & ICT	9	9
Agricultural Engineering	6	6
Economics & Biometrics	5	5
Milling & Processing	6	6
Technology Transfer	15	15
Crop Development	15	15
Staff on Internship	8	0
Temporary Staff	8	0
Staff on Leave	23	0
<b>Total</b>	<b>139</b>	<b>100</b>

### **3.4 Research instruments**

The study used questionnaires to collect both quantitative and qualitative data. Quantitative data are those which can be expressed as a number or quantified and may be

represented by ordinal, interval or ratio scales, and easily lend themselves to most statistical manipulation (Best and Kahn, 2006). Qualitative data, on the other hand, cannot be expressed as numbers, but rather they are usually expressed on nominal scales such as gender, socio-economic status, and religious preference. Lancey (1993) argues that this delicate balance between the quality and quantity of information is useful as it provides a fuller explanation of the phenomenon under investigation. The questionnaire was organized in two sections; A and B. Section A of the questionnaire was to collect general information to give analysis of the characteristics of the respondents and was closed - ended. Section B was to collect data on the objectives of the study and had Matrix questions which were merely a series of questions that shared the same set of closed-ended response options, and also open ended questions for respondents to explain their views.

### **3.4.1 Pilot testing**

The instruments were piloted among the study population to determine their reliability and validity. It is the process of administering the research instruments to a given group of people different from the selected population sample. This approach may also be referred to as the pretest-posttest technique since the same test is administered twice to the same group ((Best and Khan, 2006). Ten questionnaires were administered by the researcher to temporary staff and interns who were not part of the target population for the study.

### **3.4.2 Validity of instruments**

Validity is the extent to which the study results can be accurately interpreted and generalized to other population (Cohen, 1988). Best and Khan, (2006) also observe that validity has to do with how accurately the data obtained in the study represents the variables. The researcher ensured that instruments comprehensively captured the variables of the study. This was achieved by providing a section for each objective in the instruments as well as ensuring coverage of all the constructs in the conceptual framework. The validity of the data collection instruments was also done with the help of the Researcher's Supervisor to edit and review the questionnaire.

### **3.4.3 Reliability of the instruments**

Reliability is a measure of the degree to which research instruments yield consistent results when employed to the same respondents repeatedly. Amin (2005) posits that reliability is the extent to which research results are consistent and replicable. The instruments were tested for reliability on a test-retest technique. The instruments were administered to 10 employees on temporary employment. Reliability was achieved by testing the instruments using the test-retest method at two weeks interval. The results were then computed with the aid of Statistical Package for Social Sciences (SPSS) and Pearson correlation coefficient determined between the first and second data collected. The 'r' value = 0.75, hence the instruments were considered reliable (Kothari, 2003).

### **3.5 Data collection procedure**

The researcher got a letter of introduction from the University of Nairobi and sought permission to collect data from the National Council of Science and Technology. The



researcher got approval from the Director of Kenya Sugar Research Foundation to conduct the study. The researcher introduced respondents to the study objectives and assured them of confidentiality. The researcher personally administered the questionnaires.

### **3.6 Data analysis techniques**

According to Bogdan and Biklen (1992), data analysis is defined as the process of systematically searching and arranging field findings for presentation. It involves organizing the data, breaking into categories and then searching for trends and patterns before reporting. Gay (1976) points out that the most commonly used method of reporting descriptive survey research is by developing frequency distribution, calculating percentages and tabulating them appropriately. The data collected were entered and analyzed by simple descriptive analysis using Microsoft Excel and SPSS version 17.0 software. The software is commonly used for analyzing survey data (ibid) and its choice was underpinned on its numerous advantages ranging from user friendliness, ability to analyze multi-response questions, cross section and time series analysis.

The process consisted of data cleaning and initial data analysis. Data cleaning ensured that erroneous entries are inspected and corrected where possible. The initial data analysis used descriptive statistics to answer questions on the quality of the data, the quality of the measurements, the characteristics of the data sample and whether the implementation of the study fulfilled the intentions of the research design.

Qualitative data analysis was used to summarize the mass of words generated by open-ended questions. The process began right from the first day of data collection where data were arranged into relevant themes. Any other new idea that emerged was added into the summary of themes. Subsequently, simple descriptive statistics were generated which were helpful in making meaningful interpretations.

### **3.7 Ethical consideration**

The researcher got approval by the School Academic Board at the University of Nairobi. Research authorization was thereafter sought from the National Council of Science, Technology and Innovation. Further approval to conduct the study at Kenya Sugar Research Foundation was done by presenting the authorization letter and permit to the Director. Consent from the respondents was sought via the transmittal letter. Respondents were also allowed to ignore items in the research instrument which are deemed too personal.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATION AND INTERPRETATION

#### 4.1 Introduction

This chapter presents findings of the study which have been discussed under thematic areas and sub-sections in line with the study objectives. The thematic areas include: study demographics, key success factors in ERP implementation, the relationship between ERP system and expenditure management and the effect of organization culture on expenditure management.

#### 4.2 Questionnaire response rate

Questionnaires with both open and close-ended questions were administered to 100 employees of Kenya Sugar Research Foundation. The response rate was 83 percent as indicated in Table 4.1 below.

**Table 4.1: Questionnaire distribution and return rate**

<b>Department</b>	<b>Questionnaires Distributed</b>	<b>Questionnaires Returned</b>
HR & Administration	37	35
Finance & Audit	7	5
Procurement & ICT	9	7
Agricultural Engineering	6	4
Economics & Biometrics	5	3
Milling & Processing	6	4
Technology Transfer	15	13
Crop Development	15	12
<b>Total</b>	<b>100</b>	<b>83</b>

The return rate of 83% for the questionnaires was considered to be good. To achieve this high rate of return, the researcher employed a strategy of distribution during staff meetings where most of the questionnaires were filled and returned the same day.

### **4.3 Demographic characteristics of the respondents**

Since data were collected from different strata, an attempt was made to present data first in terms of demographics of respondents, followed by description of themes for the study that basically looked into the main study objectives to guide analysis and discussions.

#### **4.3.1 Distribution of respondents by gender**

During the data collection exercise, respondents were asked to indicate their gender. The resulting distribution showed that out of the 83 respondents, there were 49(59.04%) male and 34(40.96%) female respondents respectively. Table 4.2 below shows the distribution that emerged.

**Table 4.2: Gender distribution of the respondents**

<b>Gender</b>	<b>Number</b>	<b>Percentage</b>
Male	49	59%
Female	34	41%
<b>Total</b>	<b>83</b>	<b>100%</b>

The findings showed that the distribution of gender was not skewed towards one gender. This showed that the government policy in ensuring that the female gender forms at least one third of the workforce is adhered to in KESREF. This was also a clear indication that all genders were fairly represented in the study.

### 4.3.2 Distribution of respondents by age

The respondents were asked to indicate their age brackets. The findings presented show that 80(96%) were over 30 years and only 3(4%) were below 30 years of age. Table 4.3 below gives the summary of age profile.

**Table 4.3: Distribution of the respondents by Age**

<b>Age</b>	<b>Number</b>	<b>Percentage</b>
Below 30 Years	3	4%
30 - 39 Years	45	54%
40 - 49 years	29	35%
50 Years and above	6	7%
<b>Total</b>	<b>83</b>	<b>100%</b>

The findings showed that 3(4%) of the respondents were less than 30 years of age, 45(54%) were between 30-39 years, 29(35%) were between 40-49 years while 6(7%) were over 50 years. This was an indication that the respondents were of mature age hence in a position to understand and respond well to the items within the questionnaires.

### 4.3.3 Distribution of respondents by years of service

The respondents were also asked how long they had worked for the organization. The years of service were categorized into brackets of 0-4 years, 5-9 years and over ten years. The results obtained are as indicated in table 4.4 below.

**Table 4.4: Distribution of the respondents by Years of Service**

<b>Years of Service</b>	<b>Number</b>	<b>Percentage</b>
0 - 4 Years	10	12%
5 - 9 Years	25	30%
Over 10 Years	48	58%
<b>Total</b>	<b>83</b>	<b>100%</b>

The findings in Table 4.4 revealed that 10(12%) of the respondents had worked in the organization for less than five years, 25(30%) for over 8 years while the majority 48(58%) had worked for over ten years. It is concluded that 73(88%) of the respondents had worked for KESREF for more than five years. The 12% rate of those having worked for less than five years could be attributed to the government's directives to freeze promotions and employment in the public sector in order to manage the wage bill. For the purposes of the study, the rate of 88% having worked for over 5 years was a good indicator that the respondents had a good understanding of both the conventional systems that were in use before the ERP system hence were considered well placed to respond to the issues raised in the questionnaire.

#### **4.3.4 Distribution of respondents by cadre**

The study sought to understand the distribution of respondents as per the levels of cadre. These were categorized into management, middle and lower level cadres. The findings were as per Table 4.5 below.

**Table 4.5: Distribution of the respondents by cadre**

<b>Cadre</b>	<b>Number</b>	<b>Percentage</b>
Management	4	5%
Middle level	67	81%
Lower level	12	14%
<b>Total</b>	<b>83</b>	<b>100%</b>

From Table 4.5 above, it was found that majority of the respondents 67(81%) were in the middle level cadre with only 4(5%) in management level and 12(14%) in lower level. Having 67(81%) of the study population in middle level cadre was a good indication for

the study because at this level, an employee is involved in implementation of key decisions made by management.

#### **4.3.5 Distribution of respondents by academic qualifications**

The researcher wanted to know the demographic profile based on academic qualifications of the study population. The respondents were asked to indicate their academic qualifications in four categories of certificate, diploma, under-graduate and post graduate. The findings were as indicated in Table 4.6 below.

**Table 4.6: Distribution of the respondents by academic qualification**

<b>Academic Qualification</b>	<b>Number</b>	<b>Percentage</b>
Certificate	5	6%
Diploma	19	23%
Under-graduate	35	42%
Post-graduate	24	29%
<b>Total</b>	<b>83</b>	<b>100%</b>

The study established that 5(6%) of the respondents held ordinary certificates, 19(23%) were diploma holders, 35(42%) were under-graduates while 24(29%) had post graduate qualification. The study population was therefore well educated and able to understand and interpret the questions in the instruments and respond accordingly.

#### **4.4 Key success factors in ERP implementation process**

Successful implementation and use of any system is largely dependent on understanding of its goals, objectives and scope. Besides, continuous training and education of the users, effective communication concerning the system and user involvement in the entire implementation process are of great importance. Furthermore, efficiency in conversion from conventional system to ERP and integration of modules within the system cannot be

over emphasized. The study therefore sought to establish if these key factors were put into consideration during the ERP implementation process. The findings are summarized in Table 4.7 below.

**Table 4.7: Responses on factors considered key in ERP implementation process**

Key successful factors in ERP Implementation	Response in Percentage		
	Yes	No	TOTAL
I understand the goals & Objectives of ERP System	85	15	100
I have sufficient training and education on ERP	76	24	100
I had good preparation for this change	68	32	100
I received effective Communication on ERP	73	27	100
I was involved in ERP implementation	84	16	100
Conversion from conventional systems to ERP was efficient	72	28	100
There is Good integration of modules on the ERP system	64	36	100

The findings from revealed that high percentage 85% of respondents had clear understanding of the goals, objectives and scope of the ERP system, 76% had sufficient training and education on how to use ERP system, 68% were well prepared for change, 73% had effective communication, 84% involvement as end users in the entire ERP process, 72% were comfortable with the conversion from conventional systems to ERP and finally 64% were in agreement that the modules were well integrated. It was thus concluded that key success factors in ERP implementation were put into consideration by KESREF.

Bradford and Florin (2003) agree that consensus among managers about the determining objectives of the ERP implementation, and how these objectives will be monitored and measured, will lead to higher user satisfaction. They argue that well defined objectives



help to keep the project constantly focused, and are essential for analyzing and measuring success. This was a clear indication that if the system is in operation as intended, then it would achieve the desired goals and objectives of which it was designed to.

However, for efficiency and effectiveness of the system to be fully realized, there is need for continuous training especially for every new employee. Estaves (2002) and Akkermans (2002) state that inadequate training has been one of the significant reasons of failure of many ERP systems. If the employees do not understand how a system works, they will invent their own processes using those parts of the system they are able to manipulate, (Umble *et al.*, 2002).

#### **4.5 Influence of ERP system on budget processing and utilization**

The study sought to establish whether KESREF had achieved budget allocation efficiency with the use of ERP. It also sought to establish whether budget utilization was based on strategic priorities and whether there was improvement on fiscal discipline on budget utilization under the ERP system. Table 4.8 below shows the findings of the study.

**Table 4.8: Views on influence of ERP system on budget allocation efficiency**

<b>Title</b>	<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>TOTAL</b>
<b>Budget processing and utilization</b>	KESREF has achieved budget allocation efficiency with the use of ERP	61(73%)	22(27%)	<b>83(100%)</b>
	Budget utilization is based on strategic priorities	53(64%)	30(36%)	<b>83(100%)</b>
	There is improved fiscal discipline in budget utilization under ERP system	67(81%)	16(19%)	<b>83(100%)</b>

The findings in Table 4.8 indicate that 61(73%) of respondents reported that KESREF had achieved budget allocation efficiency with the use of ERP system while 22(27%) were of the contrary opinion. Some of the comments given for the yes responses included the ability for the respective units and departments to know what was allocated to them per activity. In the previous conventional system, this information was a privy to the finance department which made user departments to either under or over spend their budgets. This concurs with the views of Allen and Tommasi (2001) that efficiency in allocation which is the skill of distributing resources in budget priorities requires replacing inefficient activities with more productive activities, leaving former priorities to newer ones and accomplishing these values in line with the organization's goals.

On whether budget utilization was based on strategic priorities, the study recorded positive response from 53(64%) of the respondents while 30(36%) did not agree with this view. Some of those who said no indicated that utilization was not based on priorities especially in implementation of the training plan where those in management level would spend a huge junk of the budget on unplanned trainings, workshops and seminars. Perhaps there is need to streamline training related expenditure to stick to approved workplans and budgets in order to achieve the aspect of strategic priorities.

On examining whether there was improved fiscal discipline in budget utilization under ERP system, 67(81%) of the respondents agreed that there was improvement while 16(19%) did not agree. Majority of the respondents indicated that most expenditure were

within the approved budgets. However, most funds remained unutilized because of bureaucracy in the procurement procedures set by the government.

The findings closely concur with the findings of World Bank (1998), that these three objectives are complementary and interdependent. Without fiscal discipline, it is impossible to achieve effective prioritization and implementation of policy priorities and programmes. Improving the internal management systems to achieve efficiency without a hard constraint is not credible. However, mere fiscal discipline in the presence of arbitrary resource allocation and inefficient operations is inherently unsustainable. Adding to this, Allen and Tommasi (2001) in macro financial discipline, argue that budget totals do not only arrange expenditure demands; results in decisions implemented must be clear as well. These totals should be set before individual spending decisions are made, and should be sustainable over medium-term and beyond (Schick, 1999).

#### **4.6 Influence of ERP system on control of expenditure on subsistence allowance**

The study sought to establish whether KESREF had achieved efficiency in control of expenditure on subsistence allowance with the use of ERP. It also sought to establish whether the ERP system had loopholes that allowed for abuse of subsistence allowance. The study also sought to establish whether KESREF had controls to ensure surrender of imprests on subsistence allowances. Table 4.9 below shows the findings of the study:

**Table 4.9: Influence of ERP system on control of subsistence allowances**

<b>Title</b>	<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
<b>Control of expenditure on subsistence allowance</b>	Control of expenditure on subsistence allowances has improved with the use of ERP	64(77%)	19(23%)	<b>83(100%)</b>
	ERP has loopholes that allow the abuse of subsistence allowance	63(75%)	20(25%)	<b>83(100%)</b>
	ERP has controls that ensure surrender of imprests on subsistence allowances	43(52%)	40(48%)	<b>83(100%)</b>

The findings indicate that there is improvement on control of expenditure on subsistence allowances where 64(77%) of respondents are in agreement while 19(23%) hold a contrary opinion. On whether the ERP system had loopholes that allow the abuse of subsistence allowances 63(75%) agree that it had while 20(25%) do not agree that there were loopholes. On whether the ERP system had controls to ensure surrender of imprests on subsistence allowances, 43(52%) agree while 40(48%) do not agree. The interpretation of the findings was that though there could be controls on the ERP system, they are not sufficient as far as surrender of imprest is concerned.

The findings in this study can be linked to the view of World Bank (2013) that, poor internal controls lead to widespread malpractices. These include: collecting allowances without travelling, collecting multiple per diems for a single day, using government fuel for private purposes, and not crediting the Government for refunds. Second, there are many common practices which are not necessarily illegal but create inefficiencies. These include unnecessary travel and needless events to collect allowances and unnecessarily large Government delegations. Third, there is a perception that travel allowances are a salary supplement. The subsistence allowances are a significant portion (23 percent) of

the salaries in Malawi (WB, Public Expenditure Review 2013). These views are similar to the findings of this study where explanations given indicated that employees of KESREF viewed subsistence allowance as a supplement to their salaries.

Another interesting findings from the study related to abuse of subsistence allowances was that employees had discovered a way of getting extra money on travelling expenses. Comments given indicated that there were scenarios where bus fare and taxi reimbursements exceeded the total amount expensed on subsistence allowance. Thus, there was need for management to come up with control measures to curb the vice.

#### **4.7 Influence of ERP system on accountability of resources**

The study sought to establish whether accountability of resources had improved with the use of ERP system. It also sought to establish whether the ERP system had enhanced activity-based costing. Finally, it sought to establish whether ERP system had centralized approvals for financial resources. Table 4.10 below shows the findings of the study:

**Table 4.10: Influence of ERP system on accountability of resources**

<b>Title</b>	<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
	ERP has enhanced costing based on activities	66(80%)	17(20%)	<b>83(100%)</b>
<b>Accountability of resources</b>	Accountability has improved with the use of ERP	70(84%)	13(16%)	<b>83(100%)</b>
	ERP has centralized approvals for financial resources	73(88%)	10(12%)	<b>83(100%)</b>

The findings indicated that 66(80%) of the respondents had a view that the ERP System had enhanced activity-based costing while 17(20%) did not agree to this view. On

improved accountability of resources, 70(84%) were in agreement that there was improvement while 13(16%) had a contrary opinion. On whether the ERP system had centralized approvals for financial resources, 73(88%) agreed that approvals were centralized while 10(12%) did not agree that approvals were centralized.

The study established that KESREF had achieved improved accountability of resources as a result of the use of the ERP System. These findings concur with Kaplan and Cooper (1998) that the integration with ERP systems allows all managerial processes, including budgeting, what-if analysis, and transfer pricing to be based on activities. They argue that activity-based budgeting gives companies the opportunity to authorize and control resources based on accurate demand information. Accuracy increases because activity-based budgeting is based on facts, and less upon power, influence, and negotiating ability. Furthermore, the activity-level focus of budgeting leads to more accuracy in forecasting the demands for all direct and, especially indirect activities.

#### **4.8 Influence of ERP system on access to financial information**

The study sought to establish financial information was easily accessible with the use of ERP system. It sought to establish whether the ERP system had increased accuracy of data on resource allocation to staff. The study also sought to examine if reporting lags had reduced as a result of the use of ERP System. Finally, it sought to establish whether the information generated from the ERP system was reliable. The findings on this objective are in Table 4.11 below:

**Table 4.11: Influence of ERP system on access to financial information**

<b>Title</b>	<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>
<b>Effect of ERP on access to financial information</b>	ERP has increased accuracy of data on resource allocation to staff	59(70%)	24(30%)	<b>83(100%)</b>
	ERP has reduced reporting lags especially for auditing purposes	43(52%)	40(48%)	<b>83(100%)</b>
	Information from ERP is reliable for decision making by management	66(80%)	17(20%)	<b>83(100%)</b>

The study findings indicated that 59(70%) of the respondents agreed that ERP had increased accuracy of data on resources allocated to staff while 24(30%) did not agree with this view. On reduced reporting lags especially for auditing purposes, 43(52%) agreed that ERP had reduced reporting lags while 40(48%) did not agree. On whether the information generated from ERP could be relied on for decision making by management, 66(80%) agreed that the information was reliable while 17(20%) did not agree.

Analysis of the explanations given to justify that ERP system had not reduced reporting lags especially for auditing purposes, respondents attributed this to the failure of power that often affects the server causing disruptions on the system. Others attributed this to the prompt log out on the system once an employee has an imprest. This would give auditors a false impression of the financial status of the organization in cases where the organization owed employees who were to make claims for imprests on activities already done.

The findings of the study were in concurrence with the findings of Davenport (1998) that ERP systems collect and disseminate timely information to managers and thus improve

their ability to process and analyze accounting information. ERP systems provide management with a unified enterprise view of the firm’s financial condition at all times. In addition, these integrated systems eliminate barriers between firm functions, allowing managers unprecedented access to accounting information (O’Leary 2000).

#### **4.9 Organization culture**

The intervening variable in this study is the organization culture. For purposes of this study, this organization culture was considered to have a significant influence on both the ERP system and expenditure management. The respondents were given three questions on organization culture and the findings were as follows:

##### **4.9.1 Does KESREF have a healthy culture?**

The study sought to establish the type of culture that the organization had. The responses are as indicated in Table 4.12 below:

**Table 4.12: Type of organization culture in KESREF**

<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>TOTAL</b>
KESREF has a healthy culture	24(29%)	59(71%)	<b>83(100%)</b>

The study established that according to 24(29%) of the respondents, KESREF had a healthy organization culture, while 59(71%) did not agree that the culture was healthy.

A good organizational culture has the ability to maximize employees' creative ideas and strategies. There are certain behaviors that can undercut this type of a culture, and one



way to get an idea of a healthy culture is to look at some of the common traits of an unhealthy culture. Some of the most common traits of a weak and ineffective organizational culture are: (i) Authority is more important than service. Any time people in power positions feel that it is necessary for them to constantly exercise that power by riding the people under them, it's only a matter of time until the system collapses. (ii) Precedence is more important than adaptability.

On seeking brief explanation on the No responses concerning healthy culture, most of the respondents indicated that the culture was driven by love for money hence subsistence allowance was a measure of who is who within the organization and a means of enriching oneself and not a means of accomplishing tasks assigned.

#### **4.9.2 Influence of ERP system on organization culture**

The study also sought to determine if the ERP system had any influence on the organization culture. The responses are as indicated in Table 4.13 below:

**Table 4.13: Influence of ERP system on organization culture**

<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>TOTAL</b>
ERP system has affected the organization culture	62(75%)	21(25%)	<b>83(100%)</b>

Majority of the respondents; 62(75%) agreed that ERP system had affected the organization culture while 21(25%) did not agree. In view of the responses in Table 4.11, this was considered to be a significant influence of the ERP system on the culture.

With special reference to subsistence allowance, the study considered the ERP system to have greatly influenced the perception of employees to the allowance as facilitation towards accomplishing tasks and not a means of supplementing salary. The findings are a pointer to either an existing internal problem on policy issues, discipline and also remunerations. There is need for management to unearth the driving force for employees to use subsistence allowance as a supplement to salary.

#### **4.9.3 Influence of organization culture on expenditure management**

The last question on organization culture was to establish if the organization culture had any effect on expenditure management. The responses are as indicated in Table 4.14 below:

**Table 4.14: Influence of organization culture on expenditure management**

<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>TOTAL</b>
The organizational culture has affected expenditure management	62(75%)	21(25%)	<b>83(100)</b>

On the other hand, 62(75%) did agree that organization culture affects expenditure management whereas 21(25%) did not agree that organization culture affects expenditure management.

According to Schein (1992), culture is the most difficult organizational attribute to change, outlasting organizational products, services, founders and leadership and all other physical attributes of the organization. He argues that organizations should strive for

what is considered a "healthy" organizational culture in order to increase productivity, growth, efficiency and reduce counterproductive behavior and turnover of employees.

Contrasting Schein (1992) this study has proved that though culture is difficult to change the KESREF culture had changed or been influenced by the ERP system as per 61(74%) of the respondents. This is believed to be change in the right direction given that the initial results on whether the culture was healthy indicated that majority did not agree that it was healthy 59(71%). From the findings generated, it was concluded that majority viewed the culture as unhealthy on the basis of abuse of subsistence allowance only. Consideration other components, the culture was deemed healthy. There were elements of a healthy culture from the responses especially considering the long period of service of respondents in the organization and responses on key success factors section of the questionnaire, there was employee pride and enthusiasm for the organization and the work performed; Strong communication with all employees regarding policies and company issues; Strong company leaders with a strong sense of direction and purpose; and Investment in learning, training, and employee knowledge.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of the findings, conclusions, recommendations, suggestions for further research and contribution to the body of knowledge.

#### **5.2 Summary of findings**

The first step was to establish if key success factors were considered in ERP system implementation process in KESREF. The study found that 70% of the respondents had a clear understanding of the goals, objectives and scope of the ERP system. 70% had sufficient training and education on how to use the ERP system, 73% were prepared by management for change before the implementation of the ERP system and 75% received effective communication from both the management, ERP team and the vendor on the ERP system. 75% of the users were involved in the implementation process, 81% were comfortable with the conversion from conventional to the ERP system and 78% were happy with the integration of the ERP modules within the system. This was a clear indication that the key success factors in ERP implementation were put into consideration by management, the project team and the vendor.

On the first objective of determining how ERP system influences budget allocation and utilization at KESREF, the study established that the budget allocation efficiency was at 73%, while budget utilization based on strategic priorities was at 64% and on fiscal

discipline KESREF was rated at 83%. On average, organization has a score of 73% which was considered as a very significant influence of the ERP system on budget allocation and utilization.

The second objective on examining how ERP system influences control of expenditure on subsistence allowances, the study found that KESREF was rated at 77% and at 75% on existence of loopholes that allowed the abuse of subsistence allowance. On controls put in place to ensure that surrenders were done on subsistence allowances the rating was a fair at 52%. Averagely, KESREF had achieved 56% on control of expenditure on subsistence allowances using the ERP system. It was concluded that the ERP system did not significantly influence the control of expenditure on subsistence allowances. This was attributed to the existence of loopholes that allowed the abuse of subsistence allowances and insufficient control measures to ensure surrender of imprests.

On the third objective on establishing how ERP system influences accountability of resources the study found that the rating on ERP enhancement of activity-based costing was at 80%, improvement on accountability of financial resources was at 84% and centralization of approvals was rated highly at 88%. On average, the organization had achieved 84%. The ERP system was considered to have significantly influenced accountability of resources.

On the fourth objective on assessing how ERP system influences access to financial information the study found that on accuracy of data on resource allocated to staff the

rating was at 69%, while on reliability of the information generated from the system the rating was at 80%. However, on reducing reporting lags for auditing purposes, the rating was at 52% which was fairly low. On average, KESREF had achieved 67% which was considered a significant influence of the ERP system on access to financial information. This influence would have been more significant had the reporting lags especially for auditing purposes reduced.

Finally, on the organization culture, it was established that majority 59(71%) of the employees viewed organization culture to be unhealthy because of abuse of subsistence allowances and subsequently travelling reimbursements on fares and taxi. Though abuse of subsistence allowance had been slightly controlled, there is need to have stringent controls on fares and taxi reimbursements. Considering other components, the culture had changed as a result of ERP system. On average, the organizational culture had a significant influence on expenditure management at 60%.

### **5.3 Conclusions**

The study established that success factors were considered in ERP system implementation process in KESREF. These key success factors were considered as pillars for achievement of the four objectives of the study. Failure to implement any one of these factors would automatically affect implementation of the entire system.

On the first objective of determining how ERP system influences budget allocation and utilization at KESREF, the study established that there was a significant influence of the ERP system on budget allocation and utilization.

The second objective on examining how ERP system influences control of expenditure on subsistence allowances, the study concluded that the ERP system did not significantly influence the control of expenditure on subsistence allowances. There were loopholes that allowed the abuse of subsistence allowances and insufficient control measures to ensure surrender of imprests.

On the third objective on establishing how ERP system influences accountability of resources, the study concluded that the ERP system had a significant influence on accountability of resources.

On the fourth objective on assessing how ERP system affects access to financial information, the study there was a significant influence of the ERP system on access to financial information. However, this influence would have been more significant had the reporting lags especially for auditing purposes reduced.

Finally, on the organization culture, the study concluded that the organizational culture had a significant influence on expenditure management.

## **5.4 Recommendations**

Drawing from the findings of this study and the conclusions made, the following recommendations are pointed out:

### **5.4.1 Budget allocation and utilization**

The study recommends linking of budget allocation and utilization functions so that expenditures are entirely based on existing budgets. This would enable analysis based on both budget allocation and budget utilization. This would also form a revolving cycle where utilization efficiency informs the next budget allocation.

### **5.4.2 Control of expenditure on subsistence allowances**

The study recommends sealing of loopholes that exist on the ERP system which are responsible for the abuse of subsistence allowance. The study also recommends stringent measures and controls to ensure that imprests are accounted for by individuals responsible and finally the study recommends that ceilings should be put in place on the reimbursement of travelling expenses especially on bus fare and taxi.

### **5.4.3 Accountability of resources**

On accountability of resources, the study recommends enhancement of activity based costing. This would ensure that every item has a vote under which it is expensed which would make accountability to be easy and transparent.



#### **5.4.4 Access to financial information**

The study recommends that the ERP system should be put to more use especially in audit functions to reduce on reporting lags. This will help not only in identifying and sealing loopholes but also in introducing and maintaining controls to avoid abuse and misuse of financial resources.

#### **5.4.5 Organization culture**

The study recommends that the management of KESREF works towards nurturing a healthy culture with regards to expenditure management; a culture in which people are contend, and have equal access to opportunities.

#### **5.5 Contributions to the body of knowledge**

The findings of this study have led to several contributions towards the body of knowledge as enumerated in Table 5.1 below.

**Table 5:1: Study contribution to the body of knowledge**

Objectives	Contribution to the body of knowledge
(i) Key success factors in ERP implementation	Key success factors in ERP implementation are fundamental to the successful implementation of the system hence they should be carefully taken into consideration at every phase.
(ii) Budget allocation and utilization	Linking of budget allocation and utilization functions is important to ensure that expenditures are entirely based on existing budgets. This enables analysis based on both budget allocation and budget utilization. This also forms a revolving cycle where utilization efficiency informs the next budget allocation.
(iii) Control of expenditure on subsistence allowances	There should be continuous checking and sealing of loopholes on ERP systems to avoid manipulation and abuse. On the other hand, without stringent measures, controls and ceilings to ensure accountability, the purpose for the system is defeated.
(iv) Accountability of resources	ERP systems should have enhanced activity-based costing. This would ensure that every item has a vote under which it is expensed which would make accountability to be easy and transparent.
(v) Access to financial information	ERP systems should be put to more use especially in audit functions to reduce on reporting lags besides the continuous monitoring and evaluation functions.
(vi) ERP Systems a Management tool	An ERP system if well implemented is a very useful tool in expenditure management that would help in planning, budgeting, utilization and accounting for the resources.

## **5.6 Suggestions for further research**

There are still grey areas which need further research to be able to gauge the ERP system as a tool in expenditure management. It was apparent from the study objectives, research methodology and instruments that the study only focused on subsistence allowances as a component of expenditure. However, KESREF being a research organization spends huge amounts of money on research programmes. It is therefore suggested that further research be done on other areas of expenditure management for instance research, training and EU funded projects.

It is also suggested that a study be done to assess effects of the ERP system as this study majorly looked at the influence of the ERP system, hence there was no correlation to determine the effects.

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## **Appendix I: Letter of Transmittal**

Dear Respondent,

**RE: EFFECTS OF ENTERPRISE RESOURCE PLANNING PROJECT ON  
EXPENDITURE MANAGEMENT AT KESREF**

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I am a student at the University of Nairobi pursuing a Master of Arts Degree in Project Planning and Management. Currently, I am in the process of undertaking a research on the effects of ERP modules on expenditure management at KESREF. The study will involve collecting data from the KESREF staff.

The purpose of this letter is to request you to participate by filling in the attached questionnaire to enable me gather the relevant data for this study. Your objectivity in giving the desired information will go a long way in helping me to achieve the objectives of this study. Please note that the responses in this questionnaire will be used only for the purpose of this study. If an item within the questionnaire seems to be too personal to you, you may ignore it.

Looking forward to your cooperation,

Yours faithfully,

**Angela Fedha**

## Appendix II: Sample Questionnaire

### SECTION A – GENERAL QUESTIONS

(Kindly mark in the box indicating your appropriate response, e.g . )

1. Gender

Male

Female

2. Age bracket

Below 30 Yrs

30 – 39 Yrs

40 – 49Yrs

50 and above

3. Period of service in KESREF

0 - 4 Yrs

5 – 9 Yrs

Over 10 years

4. Level of cadre

Management

Middle Level

Lower level

5. Academic qualifications

Certificate

Diploma

undergraduate

Postgraduate

Any other (specify)

---

**SECTION B**

(This section is meant to assess the effect of ERP system on expenditure management) Please indicate either Yes or No.

<b><i>1. ERP System</i></b>	<b>Yes</b>	<b>No</b>
(a) I understand the goals, objectives, scope and of ERP project?	<input type="checkbox"/>	<input type="checkbox"/>
(b) Sufficient training and education was done on how to use the ERP system?	<input type="checkbox"/>	<input type="checkbox"/>
(c) Management planned well and prepared staff for change	<input type="checkbox"/>	<input type="checkbox"/>
(d) There was effective communication regarding ERP from the Management, vendor and ERP team.	<input type="checkbox"/>	<input type="checkbox"/>
(e) I was involved in the entire ERP process where and when it was necessary	<input type="checkbox"/>	<input type="checkbox"/>
(f) Data analysis and conversion from conventional system to ERP was efficiently and appropriately done	<input type="checkbox"/>	<input type="checkbox"/>
(g) ERP modules are integrated well within the system to enhance smooth flow of information	<input type="checkbox"/>	<input type="checkbox"/>

<b><i>2. Budget processing and utilization</i></b>	<b>Yes</b>	<b>No</b>
(a) KESREF has achieved budget allocation efficiency with the use of ERP system If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(b) Budget utilization is based on strategic priorities If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(c) KESREF has improved in fiscal discipline on budget utilization under the ERP system If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>

<b>3. Control of expenditure on subsistence Allowances</b>	<b>Yes</b>	<b>No</b>
(a) Control of expenditure on subsistence allowances has changed with the use of ERP system If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(b) ERP system has loopholes that allow abuse of Subsistence allowances If Yes Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(c) ERP system has controls to ensure surrender of imprests especially on subsistence allowances If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>

<b>4. Accountability of Resources</b>	<b>Yes</b>	<b>No</b>
(a) ERP has enhanced activity based costing If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(b) ERP system has increased accuracy of data on resources allocated to staff If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(c) Resource allocation and approvals are centralized under the ERP system If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>

<b>5. Access to Financial Information</b>	<b>Yes</b>	<b>No</b>
(a) Access to financial information improved with the use of ERP If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(b) ERP has reduced reporting lags especially for auditing purposes If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(c) Information generated by ERP system is reliable for decision making by management If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>

<b>6. Intervening Variables in Expenditure Management</b>	<b>Yes</b>	<b>No</b>
(a) KESREF has a healthy culture If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(b) ERP system has influenced the organizational culture If No Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>
(c) Organizational culture influences expenditure management Briefly explain _____	<input type="checkbox"/>	<input type="checkbox"/>

Kindly give any other information on how the ERP system can be used as a tool in managing expenditure in KESREF.

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*Thank you.*

## Appendix III: University letter



UNIVERSITY OF NAIROBI  
COLLEGE OF EDUCATION AND EXTERNAL STUDIES  
SCHOOL OF CONTINUING AND DISTANCE EDUCATION  
KISUMU CAMPUS

The Secretary  
National Council for Science and Technology  
P.O Box 30623-00100  
NAIROBI, KENYA

27<sup>th</sup> October, 2014

Dear Sir/Madam,

RE: FEDHA ANGELA - REG NO. L50/65189/2013

This is to inform you that **Fedha Angela** named above is a student in the University of Nairobi, College of Education and External Studies, School of Continuing and Distance Education, Kisumu Campus.

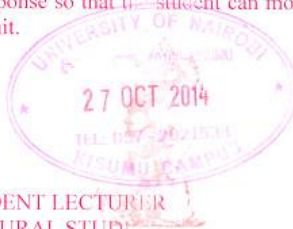
The purpose of this letter is to inform you that **Angela** has successfully completed her course work and Examinations in the programme, has developed Research Project Proposal and submitted before the School Board of Examiners which she successfully defended and made corrections as required by the School Board of Examiners.

The research title approved by the School Board of Examiners is: "*Effects of Enterprise Resource Planning System on Expenditure Management at Sugar Research Foundation*". The research project is part of the pre-requisite of the course and therefore, we would appreciate if the student is issued with a research permit to enable her collect data and write a report. Research project reflect integration of practice and demonstrate writing skills and publishing ability. It also demonstrates the learners' readiness to advance knowledge and practice in the world of business.

We hope to receive positive response so that the student can move to the field to collect data as soon as she gets the permit.

Yours Faithfully

**Dr. Raphael O. Nyonje, PhD**  
SENIOR LECTURER & RESIDENT LECTURER  
DEPARTMENT OF EXTRA-MURAL STUDIES  
KISUMU CAMPUS





**APPENDIX IV: Permission Letter from KESREF**



**KENYA AGRICULTURAL & LIVESTOCK RESEARCH ORGANISATION  
SUGAR RESEARCH INSTITUTE (SRI)**

---

**KESREF/EST/079/130**

**October 5, 2014**

Angela Fedha  
University of Nairobi  
**Reg. No. 65189/2013**

Thro' Human Resource Manager

Dear Angela,

**PERMISSION TO CARRY OUT RESEARCH IN KESREF**

---

This is in reference to your letter seeking for authority to carry out research on *Effects of Enterprise Resource Planning System on Expenditure Management at Kenya Sugar Research Foundation.*

Permission is hereby granted for research w.e.f 13<sup>th</sup> October up-to 5<sup>th</sup> November 2014. Please liaise with the Finance Manager and ICT Manager for guidance and supervision.

A handwritten signature in black ink, appearing to read "J. E. Jamoza".

**J. E. Jamoza, PhD.**  
**DIRECTOR (Ag.)**

cc. Head of Finance  
ICT Manager

---

SUGAR RESEARCH INSTITUTE HEADQUATERS,  
KISUMU – MIWANI ROAD, P.O. BOX 44 – 40100, KISUMU, KENYA. TEL.: +254 020 204 7307 / 0735 33 99 12  
EMAIL: [sugar.institute@kalro.org](mailto:sugar.institute@kalro.org), Website: [www.kalro.org/sugar](http://www.kalro.org/sugar)



## APPENDIX V: NACOSTI Letter



### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 310571, 2219420  
Fax: +254-20-318245, 318249  
Email: secretary@nacosti.go.ke  
Website: www.nacosti.go.ke  
When replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref: No.

Date:

NACOSTI/P/14/0684/4028

12<sup>th</sup> November, 2014

Angela Masitsa Fedha  
University of Nairobi  
P.O. Box 30197-00100  
NAIROBI.

#### RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Effect of Enterprise Resource Planning System on expenditure management at Kenya Sugar Research Foundation,*" I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for a period ending **19<sup>th</sup> December, 2014**.

You are advised to report to the **Chief Executive Officer, Kenya Sugar Research Foundation, the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
DR. S. K. LANGAT, OGW  
FOR: SECRETARY/CEO

Copy to:

The Chief Executive Officer  
Kenya Sugar Research Foundation.

The County Commissioner  
Kisumu County.

# APPENDIX VI: Research Permit

**THIS IS TO CERTIFY THAT:**  
**MS. ANGELA MASITSA FEDHA**  
**of UNIVERSITY OF NAIROBI, 0-40100**  
**KISUMU, has been permitted to conduct**  
**research in Kisumu County**

**Permit No : NACOSTI/P/14/0684/4028**  
**Date Of Issue : 12th November, 2014**  
**Fee Received :Ksh 1,000**

**on the topic: EFFECT OF ENTERPRISE**  
**RESOURCE PLANNING SYSTEM ON**  
**EXPENDITURE MANAGEMENT AT KENYA**  
**SUGAR RESEARCH FOUNDATION**

**for the period ending:**  
**19th December, 2014**



*beddy*


.....  
**Applicant's**  
**Signature**

.....  
**Secretary**  
**National Commission for Science,**  
**Technology & Innovation**

**CONDITIONS**

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**

**REPUBLIC OF KENYA**



**National Commission for Science, Technology and Innovation**

**RESEARCH CLEARANCE PERMIT**

**Serial No. A 3601**

**CONDITIONS: see back page**