INFLUENCE OF VENDOR SUPPORT FACTORS ON THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING PROJECTS IN SELECT PUBLIC UNIVERSITIES IN KENYA

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DECLARATION

This research project report is my original work and has not been presented for any award of degree in any University.

Signed ……. Date……

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L50/87114/2016

This research project report has been submitted with my authority as the university supervisor

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DEDICATION

This study is dedicated it to my dear husband Senray Peru who always supported me throughout the study period and my parents Dr. John Sawo and Bilhah Ayieko for supporting my education since childhood.

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My appreciation goes to each person who upheld me all through my year of study. First of all, my supervisor,Dr. Peter Nzuki for his leadership and direction which was with uttermost professionalism. Am also grateful to my lecturers who taught me and for the knowledge that they have imparted upon me. To my colleagues whom we have shared knowledge and learnt many lessons together during the coursework, I truly appreciate you. Above all I humbly express my gratitude to God for the wisdom and wellbeing throughout this course.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

CSF	–	Critical Success Factor
ERP	–	Enterprise Resource Planning
ICT	–	Information Communication Technology
IT	–	Information Technology
SPSS	–	Statistical Package for Social Science

ABSTRACT

In Todays world, Enterprise Resource Planning (ERP) systems have emerged as a prevalent software that integrates the functional areas of a company or organization into a single system providing real time solutions and seamless communication in business processes. Despite the competitive advantage that the ERP system provides to an institution, the implementation of such projects remains incomplete and may take several years to complete despite having clear requirements and specifications. Studies done on ERPs successes have acknowledged that Vendor Support is a Critical Factor for the success of an ERP Project. Four objectives were used to guide the study; to determine how involvement in the system phases influence the implementation of ERP, to examine how capability influence the implementation of ERP, to establish how the customer factors influence the implementation of ERP and to assess how the customer linkage influence the implementation of ERP in public universities in Kenya. Information System Success model was utilized in the theoretical framework to support the study. Descriptive research design was adopted in obtaining data to a target population of ninety from the select public universities in Mt. Kenya region counties where key users from six departments were selected. A census survey was adopted in sampling all the participants of the population where employees from different departments who constantly use the system and interact with the vendors were the respondents. Data was obtained from the respondents using Self-administered questionnaire as the research instrument. The researcher used Statistical Package for Social Science (SPSS) version 23 as a tool to analyze the data collected. Descriptive statistics was use by the researcher through the mean and standard deviation as per the study objectives. Presentation of findings from the study were in frequency tables with percentages and distribution for explanation. The study found out that vendor support influenced positively implementation of ERP projects. Conclusions made from the research is that a correlation exists between the vendor involvement in systems life cycle, capability, customer factors and customer link for ERP projects implementation. Vendor support as a critical success factor for the implementation of ERP projects contributes 27% of successful implementation, hence the other factors need also to be studied. The study recommends that a post implementation analysis should be done on the project for review on areas on improvement for future implementation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

An increasing need in organizations to remain compètitive by connecting information in various departments into a common entity has been experienced recently. An ERP system is a computer based system in its design that processes the transactions of the organization and facilitates the integration, production, customer responses and real-time solutions (O'Leary, 2012). As Wamicha and Seymour (2015) state, ERP systems consolidates business practices of an institution that the vendors have accrued over previous implemèntations that allow restructuring of the organizations processes. As a result, many Universities normally invest in large amounts of money on the ERP systems and implementation as projects.

The History of ERP dates back from 1960 which started as Material Requirements Planning (MRP) as a production and inventory system to schedule production processes in manufacturing companies. It later evolved to Manufacturing Resource Planning (MRP) II in 1980 and it utilized the software applications to coordinate the manufacturing processes. The ERP system was coined in 1990 as a multi - unit software to improve the core businesses process performance (Jacobs and Weston, 2006). Countries that are developed including USA, Canada, Australia and United Kingdom have adopted widely using ERP system. The system is used in manufacturing, service and energy sectors for automation of financial, human and material resources, to compete globally and improvement of business processes (Huang and Palvia, 2001).

Countries in Africa which are developing are branded by low economic abilities, limited human resource, inadequate infrastructure and specific values which in turn might affect the

implementation of ERP's (Al-Debei and Al-Lozi, 2012). A study done by (Tobie, Etoundi, and Zoa, 2016) on the implementation of ERP in African countries shows that SAP, Oracle and Microsoft have dominated the market in providing the software. The ERP software has been adopted mostly in the Manufacturing and oil companies in Egypt and Libya while in Nigeria, Zimbabwe and Ethiopia the system is found in large and private companies. The large and private sectors together with the large and public Universities have adopted the use of ERP in South Africa. The findings showed that in Kenya, the ERP system is mostly in the government office.

ERP's in the recent past have only matured in the manufacturing and retail industries. The public Universities in Kenya are quickly embracing the penetration of the software in the market. Customers adopting the ERP system are viewing it as a longstanding plan (Bala and Venkatesh, 2013). With the ERP systems, the institutions can manage all their resources. These are customized by the software developers or vendors to fit the needs of the institution. The percentage of ERP implementation in the Kenyan universities is 85 which is accounted for by the successful integration and adoption of the finance, student management, human resource and procurement modules (Makokha, Musiega and Juma, 2013). However, other modules such as catering, hostel and health modules are slowly being incorporated into the latest solutions provided by the vendors to the Institutions.

ERP system main benefits in a University can be categorized into tangible and intangible (Mohammed, Al-Mudimigh and Al-Mashari, 2003). Tangible benefits include the increase of output delivery, improved information and processes, reduction in need time in completing tasks and processes through elimination of duplication of data entry, reduction of HR costs and improved customer service(Dezdar et.al,2011). Moreover, advantages of integrated systems that

are intangible to a University encompass the access of information globally and better communication between the stakeholders. Most universities are embracing the ERP systems to allow them access accurate, efficient and timely data within the shortest time possible (Kibera, 2013)

Vendor support is essential in any ERP implementation and necessitates having the technical knowledge of implementation and diversity in skill (Shahin, 2012). The ERP projects to the learning institutions are a lifelong commitment and will need regular creation of independent units and upgrades improving on its functions to realize its tactical importance. Hence, vendors are needed throughout the ERP implementation phases for support and maintenance. Shah et al. (2011) break down the vendor support into roles which include supporting the software, training the users technical assistance, maintaining the software and continual updates.

Vendors have a major task in the system implementation stages which influence the system implementation success. Vendors are crucial in the analyzing, plan -designing, implementing and post – implementing stages as thèy provide timely and accurate support to fix the errors during the configuration and setup of the system (Gholamzadeh Chofreh, Feybi Ariani and Gholamzadeh Jofreh, 2011). The vendor's skills and expertise will be required in the Institutions go live state. Without the support, and delay of work by the departments, can lead to the project being disrupted and shutting down (Loh and Koh, 2004). Hence, factors affecting the vendors as well as the client's factors should be identified for successful implementation.

The affiliation amid the vendor with the client/host is a key aspèct in successful implementation ERPs. Akkermans & Helden (2002), state that an institution may not have the technical skills to manage the project in-house on its own and therefore for a project to be successful, the vendors

and clients need to be positively fit and compatible. According to Umble et al(2003) a solid vendor/client relationship is needed for the project to be a success.

Little attention had been paid to vendor support in the past findings as a CSF in implementing ERPs . Loh and Koh (2004) examined different research findings and concluded that vendors have not been considered much as important stakeholders in the projects. In Kenya, it has been studied that most institutions are implementing ERP to be at speed with other institutions without careful consideration of the need of vendor support (Matende and Ogaob, 2013). Chepkoech and Noor (2014) recommend the involvement of vendors implementing the ERPs in the institutions to integrate their business processes.

1.2 Statement of the Problem

Regardless of the benefits in implementing ERP system projects in organizations, there still remains a challenge in implementing the same in Kenyan public Universities. Many (70 to 90 percent)of the implementations have failed either totally or partially, or have not brought forth the expected benefits. As Al-Mashari et al(2003) state, high failure rates of implementing ERPs system by Institutions, suggest a challenge in understanding successful implementation. Studies on CSFs impacting thè implèmentation of ERPs positive or negative way show that the main factors include Business plan and vision, Top-Management Support, Projèct Managèment, Vendor Support, Businèss procèss reenginèering and Usèr involvèment (Totla, Mandot,Gaur, 2016), (Somers, 2001), (Gianopoulos, 2015) and (Shatat, 2015). However, Implementation of the ERPs projects has been given little consideration in Public universities in developing countries such as Kenya.

ERP System unifies the organizations business functions by integrating its major processes which leading to reduction in the complexity and cost of collaboration, optimizing operations and finally successful business (She and Thuraisingham, 2007). Many of the Institutions of higher learning in Kenya today face challenges that ensure the ERP system are successfully implemented and the benefits realized. Otieno (2008) observes that ERP implementation is a major undertaking but many fail despite their benefits. He states that about 90% of the system implementation are over budgeted and take longer periods to fully function and that only 33% achieve success in implementation. A study on ERP adoption in Kenya done by Nzuki and Odongo (2015) reveals that the ERP users have poor product knowledge on the ERP software and the vendors as well.

Hurbean (2008) points out that many public institutions do not have sufficient knowledge of ERP system, while the vendors certainly aren't well acquainted with the functions of the institution leading to difficulties in implementation. This is reflected in the image of many Kenyan Public Universities who adopt the negative attitude leading to project failure. Many failed ERP implementations, affect not only the host institution but also the vendor who needs to compensate the client in terms of payment (Ali, Hussain, Takwa and Ra'ed, 2015).

Recent studies carried out on ERPs projects in Kenya have had their focus mostly on its adoption and the general factors that lead to successful implementation. Vendor support as a top 10 critical success factor in implèmentation of ERPs has little research bearing in mind that vendors are critical stakeholders and insufficient support can lead to a project failing. Plant and Willcocks (2007) observe that vendor support could impact implementation of the project negatively or positively.

1.3 Purposè of the Study

The purposè of this study sought to investigate the influence of vendor support factors on the implementation of Enterprise Resource Planning Projects in Public Universities in Kenya.

1.4 Objectives of the Study

The research was guidèd by the following four objèctives:

i) To determine how involvement in the system phases influence the implementation of ERP projects in Public Universities in Kenya

ii) To examine how capability, influence the implementation of ERP projects in Public Universities in Kenya

iii) To establish how the customer factors influence the implementation of ERP projects in Public Universities in Kenya

iv) To assess how the customer linkage influence the implementation of ERP projects in Public Universities in Kenya

1.5 Research Questions

The following research questions was used for the study:

i) How does involvement in the system phases influence the implementation of ERP projects in Public Universities in Kenya?

ii) In what way does capability influence the implementation of ERP projects in Public Universities in Kenya?

iii) How do customer factors influence the implementation of ERP projects in Public Universities in Kenya?

iv) In what way does the client linkage influence the implementation of ERP projects in Public Universities in Kenya?

1.6 Significance of the Study

Public and Private Universities in the entire nation may benefit from this study. It may be of great value to the institutions of learning in the ERP system implementation and know how to incorporate the vendors in terms of their support in all the stages of implementation. This study may be helpful as in understanding how the vendor factors and the customer factors add value to the success of implementation of the ERP projects.

Universities could obtain information from this research and help them come up with policies that will incorporate the vendor support to avoid failing of projects. The vendors could also be informed as key players in the process of implementation to improve the relationship with the customers for successful implementation. The Top management in the organizations may be well informed on how to create strong project management teams together with the vendors. Scholars and researchers may be interested on the findings of the study to determine further study on the vendor support factors in the implementation of ERPs. It could add value to the current body of knowlèdge in filling gaps on vendor support in ERP implementation. It could also act as a basis of reference to future studies in ERP projects.

1.7 Limitations of the Study

Sensitive information in relation to the system was required and that would not be guaranteed disclosure by the respondents. To mitigate this challenge, the researcher indicated at the data

collection instrument that data provided was highly confidential and the respondents should not indicate their names.

Some of the respondents were not ready to assist in providing data. To handle this, the researcher will provided the documents from the University and NACOSTI for data collection.

1.8 Delimitation of the Study

The focus of the study was on the vendor support in the implementation of ERP projects in public universities in Kenya based only on the research variables. The geographical scope of the study concentrated on five public universities out of the seven public universities in Mt. Kenya region counties as most public universities in the area have become fully fledged not more than five years since the research was carried out. Data was collected from the key users of the system in the ICT, Finance, Human Resource, Procurement, Admissions and Student Management because of the frequent interaction with vendors on user requirements of the system.

1.9 Basic Assumptions of the Study

The first assumption is vendor support influences the implementation of ERP projects in public universities. Secondly, that the respondents would have the knowledge on the area of study and would spare their time to take part in the study by giving their views. The study also assumed that the information given would be accurate and useful for the study. Finally, it made an assumption that the researcher would be given access to various departments by the Universities to collect data.

1.10 Definition of Significant Terms

Customer Factors – Elements about a customer that bring certain outcomes or effects

ERP Implementation - A process that involves planning, designing, developing, testing, deployment and ongoing support of the system.

Entèrprise Resourcè Planning (ERP) – A computer based software that brings together an organizations business' operations into one unit providing real time solutions and communication.

Public University – An institution of higher learning that receives funds from the National government to assist in running its operations

Customer linkage - The connection that stems from specific experiences

Capability – The ability of the vendors to perform a specified task on the project implementation

Involvement – Process by which vendors take part in the ERP project implementation

Vendor Support – Technical assistance that is given both during and after the ERP implementation.

1.11 Organization of the Study

The study was divided into five chapters. Chapter One covered the introduction part and contained the background information, statement of the problem, purpose, significance, objectives, research questions, limitation and delimitation of the study and definition of terms. Chapter Two focused on examining related Literature on the vendor support in implementation of ERP projects focusing on the themes of the objectives, theoretical framework, conceptual framework and the literature gaps . Chapter Three concentrates on the research methodology and covered the research design, the target population, sampling procedure, data collection

instrument and procedure, reliability and validity of the instrument and ethical consideration. Chapter Four concentrates on the analysis of data, presentation, discussions and interpretation and Chapter Five contains the summary, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed significant literature relating to this study done by other researchers and other existing literature by scholars concerning the influence of vendor support in ERP projects implementation. The issues covered include the four objectives of the study, theoretical framework and conceptual framework developed by the researcher for the study.

2.2 Involvement in the system phases and Implementation of ERP Projects

The activities of ERP implementation span the system lifecycle from its start to closure. Various scholars have grouped the implementation life cycle of the ERP system into different phases. According to Chofreh and Goni (2011) the implementation is a process that includes initiation, planning, execution, controlling and closure which entail a process altogether where each phase produces results and the outcome of one leads to the input of the next phase. Majed et al. (2006) categorized the process into four stages which consists of the analysis, planning and designing, implementation and post-implementation stages.

Scholars Markus and Tanis (2000) recognize that the stages of the ERP implementation have main players and typical activities which are the people and the tasks respectively that are needed in every phase in the life cycle. Based on these, the phases are categorized into chartèring, projèct, shakèdown and onward/upward phasès. This study will adopt the Markus and Tanis methodology to explain the vendors and the projects team involvement in the lifecycle.

2.2.1 Chartering Phase

Before a project starts, major decisions should be made on adopting the ERP system that will improve the business functions of the organization (Portougal, 2006). In this phase, the organization will choose a suitable ERP software and engage an ERP vendor who will provide the software functionalities and features for the business functions. A project team is formed which includes key champions from selected departments who will work with the selected vendor based on the system gaps identified. During this stage, frequent meetings are held by the project team where the vendors are brought into light on the needs, timescales for implementation and a general work plan for the project.

A clear business plan and vision needs to be communicated clearly at this phase by the organizations top management. The system budget and schedule is also approved by the top management before moving to the next stage. Law et al.(2010) points out that if organizations business requirements are very different from the software provided, then customization has to be done to meet its needs which can lead to problems in keeping the software up to date or communication with the vendors to solve problems relating with the customization. Hence, careful planning needs to be done at this phase.

2.2.2 Project Phase

This phase is considered as the roll out stage where the activities are done to enable the system to be up and running in the different sections of the organization. The project tèam works with the vendors who define the roles, setup data structures and databases, configure the software and documents standard procedures. All selected modules are then customized thereafter unit tests are done for the system based on what has been developed by the vendor. According to Markus

and Tanis (2000), the vendors configure the software, integrate the system, convert data, do the testing, train users and rollout the system. Unlike other software's, an ERP software will require configuration after installation to ensure seamless integration of the functionalities. Some errors and problems might be experienced at this stage and hence, members of the project team should work together with vendors to ensure that system is configured well to meet the business requirements (Markus and Tanis, 2000). The end-users are trained by the vendors on the specific tasks that they do as per the customized modules.

2.2.3 Shakedown Phase

This is the stage where the system moves from a go-live status to achieving its normal operations (Portougal, 2006). The activities for this phase include data cleanup, provision of additional user training and resolving bugs that arise from the processes. This phase is also looked at as the end of the project where users use the system to perform the business functions (Loh and Koh, 2004). The vendors here are involved in fixing the bugs and reworks, performance tuning and handling temporary inadequacies. The system is therefore carefully monitored and evaluated for performance (Markus and Tanis, 2000). Users in this phase work with real data and hence mistakes can be made frequently and probabilities of data errors could rise if not well trained (Hakkinen and Hilmola, 2008). Appropriate knowledge transfer between vendor and the host organization is important and the knowledge barriers should be minimized.

2.2.4 Onward/Upward Phase

This is the last phase of the implementation and it does not have an 'end'. It involves the ongoing system maintenance and keeps up with the changes of the organization (Loh and Koh, 2004). The organization at this phase apprehends the benefits that the system could bring and plans for

future improvements of the system. Issues in this stage can reduce productivity or lead to delay of important tasks (Markus and Tanis, 2000). Vendors should continually be engaged to fix arising issues to enhance efficiency. The addition of modules and functionalities, continual maintenance and upgrading of the system to higher versions will ensure that the system is up to date and that the application and business are at par (Somers and Nelson, 2004).

2.3 Capability and Implementation of ERP Projects

Vendor Capability is important to consider as part of the vendor support which influences implèmentation of ERP projects and is discussed in this section in terms of the industry knowledge, provision of resources and infrastructure.

2.3.1 Industry Knowledge

The Enterprise Resource Planning provides an integrated platform to support all the business process of the organization. The software vendor is required to have a proper knowhow of organizations procèsses also be well versed with what the customers are facing. Williams (2016) states that the ERP software that supports the organizations business processes is built by industry knowledge. An ERP vendor is required to understand the organizations requirements (Soh,Sia,and Tay-Yap,2000) applying knowledge in designing and developing the system, and as the industry changes, the software requirements change hence the vendor should be able to act on the changes.

Knowing the type of business the vendor support, will enable them apply the knowledge in the design and development of the software. The vendor staff who don't understand the host organization business requirements could lead to delivery of services being delayed since more

time should be allocated to learn the processes (Teo, Singh and Cooper, 2009). When a vendor has helped similar organizations, then a basis of growth will be experienced. An ERP vendor who has worked with several organizations that have similar requirements and has created a growth in the business, is easy to rely on their experience since the vendor has more distinct views on what the best practice is (Williams, 2016).

2.3.2 Provision of Resources

Man power is needed from the beginning of the project to its end. The vendors will be required in every phase of the implementation process. Many organizations lack employees with technical competency and may require the consultants who are the expertise to assist during the implementation. Service delivery response is influenced by the knowledge and performance of the vendor staff (Bharati and Berg, 2005). The vendor should provide committed human resources to support the implementation process to deliver the project at the stipulated time. The allocation of time, personnel and knowledge influences the vendor to provide sufficient support to the client (Molla and Lee, 2006) and the provision of knowledge resources to the project is the responsibility of the vendor (Koh, Ang and Straub, 2004).

A study done by Molla and Lee (2006) on an unsuccessful ERP implementation, reveal that lack of adequate manpower in providing the technical and functional support is the main problem of the vendor. Claybaugh and Srite (2009) point out that a vendor staff knowledge of the software, communication skills and troubleshooting abilities lead to meeting customer needs and customer satisfaction while lack of product knowledge leads to delivery of poor services to the client. The ERP vendors are able to focus on specific skills and provide more value to their clients in implementing the systems.

2.3.3 Infrastructure

For any computer system to function for long, it requires a robust foundation from the beginning. Selction of the right ERP software and a compatible hardware will enable the system be utilized in its full potential. Bharati and Berg (2005) state that the ease of use and how flexible the system is, influence the responsiveness and efficacy of the system. As technology is evolving day to day, the software and hardware also should be modified and advanced to remain compatible. The appropriate technology and tools the vendors use enhance effective communication between the client organization and the vendor.

Having proper system specifications at the beginning of the project will lead to a higher implementation success rate of the system. The vendors should give clear information on the servers to be used, networking infrastructure, cloud technology and compatible telecommunications. The use of knowledge management tools increases the knowledge level of the client and increases the independence from the support services of the vendors (Claybaugh and Srite, 2009).

2.4 Customer Factors and Implementation of ERP Projects

The customers or the organization receiving support are vital resources to work with the vendors throughout the system implementation process. This section will discuss the elements regarding the customers that are interconnected with the vendor support.

2.4.1 Knowledge in Project Management

As defined by (PMI, 2000) project management is applying skills, tools, techniques and knowledge to project activities to meet what is required. An ERP system as a project enables

flow of information across functional units in the organization. The involvement of the project team of the organization in the ERP implementation is crucial for its success. According to Marchewka (2002), the project team should understand the project as a step by step methodology of activities, tools, processes, controls and deliverables to avoid failures. Areas of project management that the project team needs to know include time-management which warrants timely completion of projects, cost management for the project's completion within the approved budget, communication management for appropriate generation, dissemination and storage of project information and scope management to understand the work required to perform to successfully complete the project.

Most of the ERPs failures reported indicate that critical areas of project management were not emphasized to the project team. A study done by Otieno (2008) shows that lack of project management skills leads to ERP systems implementation failure and the project team should be equipped with the necessary skills through training to work together with the vendors in the implementation.

2.4.2 Technical competency

The ERP system knowledge moves from the implementers of the system to the responsible users (Wang, Lin, Jiang and Klein, 2007). Technical competency is a set of skills,knowledge and practical capabilities of the project member(Koh,Ang and Straub,2004). ERP project succes will depend on the right choice of project team members who have required skills and knowledge. The project team should be well balanced as the ERP in integrative in nature hence sharing of knowlegde from various disciplines will be required.

The customers technical competency is essential to enhancing the relationship between the vendor and the customer as well as ensuring the implementation success. According to Koh et al. (2004), the required information requested by the vendors is provided by the organization, hence the technical competent client staff should be allocated to the project to work well with the vendors. The vendors will learn from the organization staff the business requirements while the organization staff will learn ERP knowledge from the vendors hence an exchange of knowledge.

2.4.3 Choice of Modules

An important feature of the ERP systems is that they come as a package solution rather than customized software. They come with in- built procedures and assumptions about an organization which rarely matches the business processes of current organization. It is therefore the responsibility of the organization to select the right modules that are aligned to the organizations activities, business functions and strategic goals and provide the information to the vendors (Somers, 2001). In doing so, it will minimize the need of customization by the vendors. According to Luo and Strong (2004), in selecting the modules, the organizations choose to implement one or more modules based on the default configuration from the vendors ERP package. This usually makes the least adjustments to the system and it's hardly sufficient in implementation of ERPs.

Itis also significant to understand the fundamental management ideologies and assumptions made by the ERP vendors, which form a basis for planning and making suitable changes to the system (Luo and Strong, 2004). The selection of the modules should match the organizations requirements as described in the chartering phase for the vendors to have a clear understanding while designing.

2.5 Customer Linkage and Implementation of ERP Projects

The vendors ability in delivering right services to the customer is usually influenced by how the rapport between the two is governed. This section will look at the contractual and communication management.

2.5.1 Contractual

Contracts provide the key means of IT governance which collate the vendor-host relationship in outsourcing agreements (Wu, Ding and Hitt, 2013). Well-designed contracts can aid in managing incomplete information by providing structures for measuring performance and risk managemènt. management of ERPs is important as sometimes the expectation of the system usually exceeds its capabilities which influences all the implementation phases of the project (Somers and Nelson, 2004) and communication should be done at every level. The information on the contract between the parties include the ERP software licenses, annual maintenance, contract terms and conditions and the scope of work.

As (Teo,Singh and Cooper,2009) state, based on specifications and scope of the agreement, the vendor is required to meet the customer requirements. Gefen (2014) states that trust governs the expected efficacy between the contracting parties which characterizes the relationship between the vendor and the host organization. The scope and specifications should be well defined and be flexible to influence the vendor-host rapport positively (Gillespie, 2005)

2.5.2 Communication Management

Communication is important across the organizations unit and the business functions throughout the implementation process as it reduces possible user resistance (Sternad and Bobek, 2006). It is important to have clearly defined communication structures when implementing the ERP system

to get the concerns and comments about the project. (Mohammed, Al-Mudimigh and Al-Mashari, 2003) points out that communication covers the scope, tasks and objectives of the project. It is vital for organizations and project members to have good communication. Basu and Lederer (2004) use the Agency theory model to emphasize on the relationship between the vendors and the customer organizations which should be a continuous interaction for successful implementation of the system.

Effective communication in the implementation process is ensured by having weekly meetings, use of emails, organization intranet and informal sessions for status updates of the project. Good teamwork by vendor and customer organization leads to vendors delivering substantial supports services (Law, Chen and Wu, 2010). The knowledge level of the organization is improved when there is good communication with the vendors (Muscatello and Chen, 2008)

2.6 Theoretical framework

The relationship between the vendor support and its influence on ERP projects implementation have been explained in a number of theories. This theoretical framework acted as a guide for the researcher to achieve the study's objectives. For this study, the theory that was used is Information Systems Success Model.

2.6.1 Information Systems Success Model

This model was created and advanced by(Delone and McLean, 2003) to assess success about an Information System and as an urgency for making comparisons between several measures (Raija, 2011). The model highlights three main pillars for an information systems success. These include qualities of Service, System and Information. Delone and McLean(2003) further added reaction

loops which are the intentions to use, user satisfaction which gives net benefits of the System. (See figure 1).

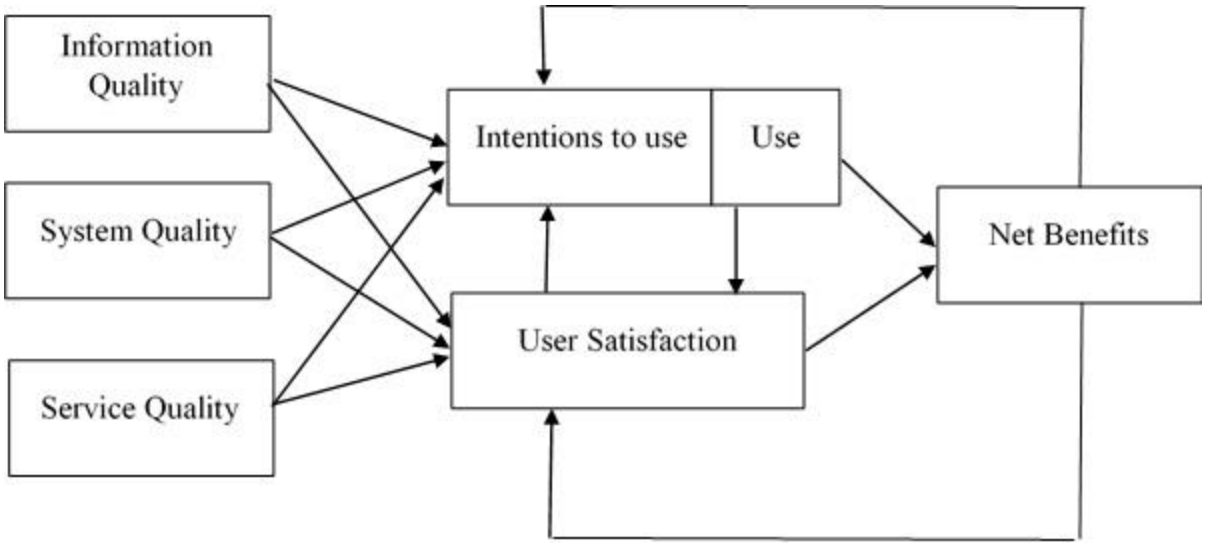


Figure1. Updated Information Systems Success Model.

This model has been used widely to measure success. The independent elements that influence an information system success include system quality, service quality information quality, which in turn affects the intention to use, user satisfaction and the net benefits in general resulting from the system implementation. The degree in which information is obtained from systems meeting the requirement and expectation of user in known as information quality. This includes how accurate, concise, reliable, timely, current and complete information is. Systems quality relates to performance and functionality of systems that involves the response time, ease of use, flexibility of the system and reliability. Service quality relates to how the convenience and reliability of the service and business process that uses the information system have improved. The Use is the manner in which the customers utilize the capabilities of an information system. User satisfaction refers to services of information system surpassing user expectation. Net value is how information systems contribute to an individual, organizations, society as a whole, such as improved decision making, higher profits, productivity and economic development.

The ERP system is assessed by quality of information, systems and services. The Vendors play a critical role in ensuring implementation success in the organization. As cited by Raija (2011), the information quality includes the data which is entered into the system, which the vendors have a major role in importing from legacy systems to new which should be accurate to avoid errors. System quality is the applications that are used to perform the functions of the organization from the requirements given by the organization and which are designed and coded by the vendors, this should be positive to achieve quality. Service quality is the support that is given by the vendors through the implementation of the system.

The feedback from the three dimensions of quality of the model include the intentions to use which is expressed by the top management in the acquisition of the system, the actual use done by the users to operate the functions of the organization (Mardiana, Tjakraatmadja and Aprianingsih, 2015) and its most appropriate in measuring system success. As(Delone and McLean,2003) state, Net benefits depend on other factors and context too in the organization, therefore it is important to define whose benefits are measured whether individual or organization.

2.7 Conceptual Framework for Vendor Support Factors on the Implementation of ERP

The relationship existing between the dependent and independent variables of this study has been explained in the framework Figure 2.

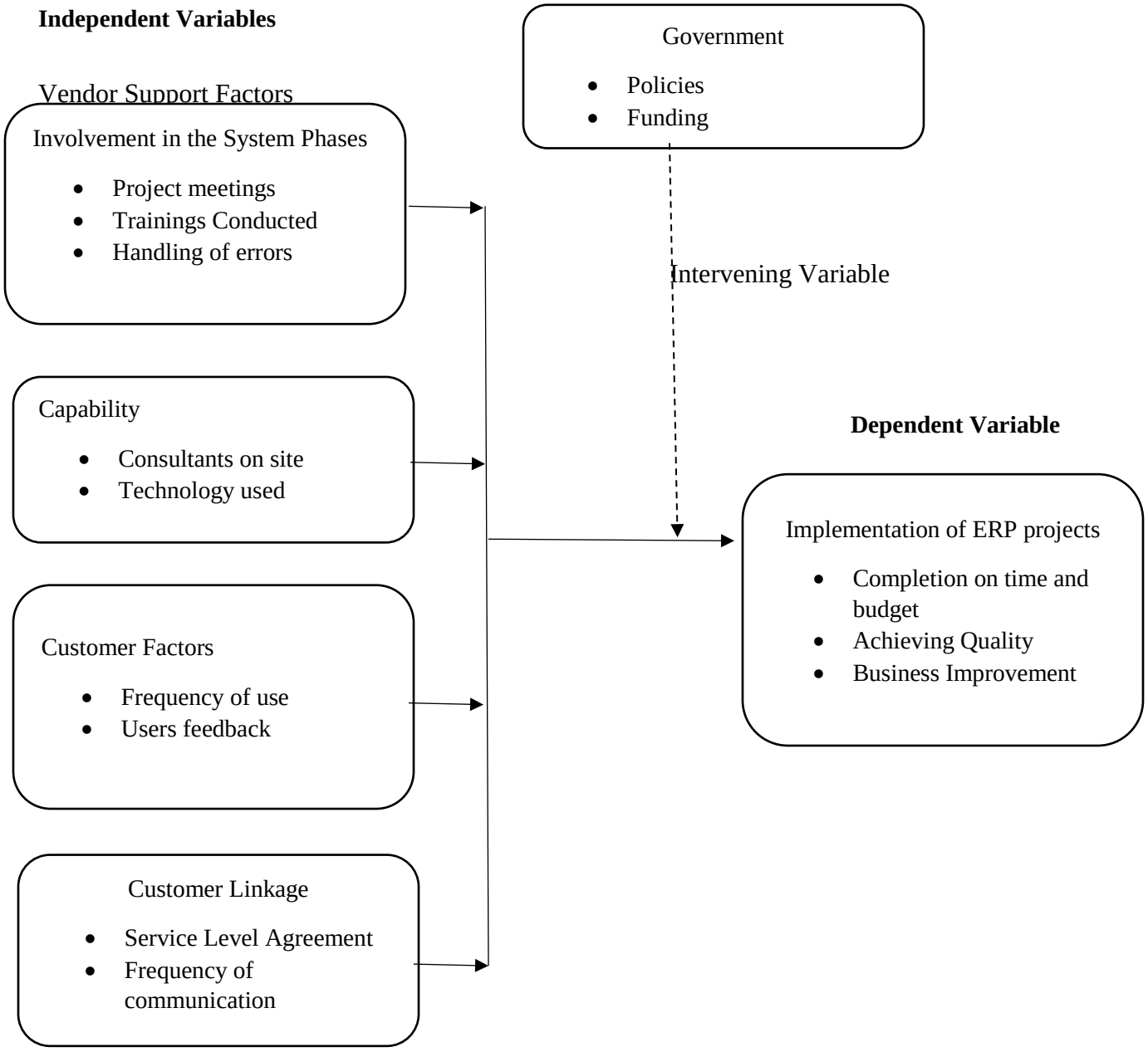


Figure 2.Conceptual Framework for Vendor Support on the Implementation of ERP

2.8 Knowledge Gap

Table 2.1 gives a summary of some of the research gaps concerning the study of vendor support factors influencing the implementation of ERP projects.

Table 2.1 Knowledge Gap

Author	Focus of Study	Findings	Country	Gap
Nejib (2013)	ERP implementation in Tunisian companies	Three Critical success factors have a relationship leading to successful implementation. Top management, organizational apt and external support	Tunisia	The study paid Little attention given to vendor support
Otieno (2008)	Challenges in ERP implementation in Kenyan Case	Failures of project implementation due to challenges in organizations	Kenya	The study does not mention the factor of Vendor support
Hurbean (2008)	Implementing ERP in public administration	Collaborating the success factors is a tough aspect in implementing ERPprojects	Romania	The study has generalized all the success factors
Matende (2013)	User participation in implementing ERPs	User participation has a positive impact in ensuring the information system success	Uganda	The study Concentarted on only one critical factor which is the users

From the Literature review, more research needs to be done on the vendor support factors and its influence in implementation of ERP projects. Therefore, the study sought to investigate whether there is a positive or negative influence on the ERP projects in public Universities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the mèthodology adopted to address objectives of the study. It gives details of the research design, the target population, sample size and sampling procedure, data collection instrument, data collection procedures, data analysis techniques and ethical considerations during the research.

3.2 Research Design

Descriptive research design was adopted for the study . Stated by Kothari and Garg(2014), the design concerns explicit predictions, description of facts and characteristics that concerns individuals, groups and situations. This design granted the researcher with the realities that concerns the nature and status of the state existing at the time of study (Creswell, 2014). The researcher gathered necessary data from the respondents in the natural setting on the vendor support for ERP project implementation projects. The relationship of variables is determined and measured by descriptive design(Cooper and Schindler,2013).

The explanation for the choice of this design is the researcher only describes or explains the existing relations concerning variables though they can't be amended. In gathering much information from respondents, the opinions and insights were collected by qualitative method design. Questions that concern status of subjects is answered by descriptive design.(Mugenda and Mugenda,2011).

3.3 Target Population

Thè population from which the study was undertaken are from the seven counties in Mt. Kenya region. There are a total of seven counties in the region with seven public universities. The study targeted five public universities in the area targeting 90 respondents where three key users (System administrators, data administrators, procurement officers, human resource officers, administrative assistants, data entry clerks and accounts assistants) of the system from each department who interact with the vendor staff will be used as the respondents. The departments included ICT, Finance, Procurement, Admissions, Human Resource and the Student Management in the schools. Table 3.1 displays the Target population.

Table 3.1Target Population

Public University	Targeted Staff	Total
Dedan Kimathi University	3(Key Users) *6(Departments)	18
Meru University	3(Key Users) *6(Departments)	18
Kirinyaga University	3(Key Users) *6(Departments)	18
Karatina University	3(Key Users) *6(Departments)	18
University of Embu	3(Key Users) *6(Departments)	18
Total		**90**

3.4 Sample Size and Sampling Procedure

A sample is the representation of the total population whereas sampling technique is the process of selecting the sample (Kothari and Garg, 2014). The sample size in this study comprised the 90 respondents from the population. The study adopted the census survey to collect the needed data in the public universities and the respondents for the study where the key users of the ERP were selected from all the participants in the population . This is a procedure the choice is selected based on the qualities that the respondents possess. The researcher chose what should have been

known and sought out to search for participants to give information based on their knowhow and procifiency. The key users of the ERP projects know much about the system and would be willing to share the knowledge and experience with the vendors. An advantage of census survey is that it is time and cost effective and also operative in exploring studies related to human being.

3.5 Research Instruments

Structured questionnaires was used as the research instrument in collecting the primary data. Newman (2014) asserts that a questionnaire provides data similar format from all rèspondents. Questionnaires assisted in gathering data from many people in an inexpensive way and was necessary in protecting participants' confidentiality. In obtaining primary data, the respondents filled the self-administered questionnaire comprising of close-ended questions without the researcher intervening. The questionnaires were structured consisting of questions designed according to the research objectives. Use of 5- Likert scale was adopted as it indicated a reliable increase in response rate.

The Questionnaire for the study had two parts. Part 1 sought to obtain data from the general information about the respondents University information. Part 2 comprised the vendor support influence on the ERP projects implementation having five sections; Section A to E based on a five point scale. Section A asked questions about the vendor involvement on system implementation phases, section B obtained data on the vendor capability, section C solicited information about the customer factors, section D asked the respondents questions on the Vendor-Customer link and section E probed on the general rating of the ERP Implementation.

3.5.1 Pilot Testing of the Instruments

The questionnaire was designed by the researcher and pretested to the carefully chosen pretest sample which would be comparable to the study's actual sample. Though the actual sample subjects were not in use during course of piloting. Through this, the researcher was able to make observations which were significant through responses and improved the questionnaire and enhancing the reliability of the instrument. The pre-test sample encouraged the respondents make remarks and propositions concerning instruction, relevance and clarity of questions.

3.5.2 Validity of the Instrument

Validity as defined by Fraenkel and Wallen (2011) refers to how appropriate, correct and meaningful the specific references are to the selected research results. Using distinct words in questions and engaging conversant terms for understanding by the respondents was considered. In ensuring content validity, the researcher sought expert and supervisors view in maintaining precision, simplicity and ascertained whether questionnaire content reached the standards before being administered to the participants. Construct validity concerns in determining if the questionnaire is linked to the ideas and the theoretic expectations.

3.5.3 Reliability of the Instrument

An instrument consistènty measuring features and yielding same results repeatedly after trials is referred to as reliability(Mugenda and Mugenda,2011).Measurement of internal consistency of items by Cronbach's Alpha used SPSS version 23 as the questionnaire had been divided into multiple parts.

Cronbach's Alpha was calculated by the formula as follows:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where:

N = the number of items

$\bar{c}$ = average covariance between item-pairs

$\bar{v}$ = average variance

The following are the steps used to calculate alpha in SPSS:

i) Click 'Analyze', then Scale', then 'Reliability Analysis'

ii) Transfer the variable questions into 'Items'. The model default is set as 'Alpha'

iii) On the Dialog box click on 'Statistics'

iv) Select 'Item', 'Scale' in the box description, 'Scale if item deleted' then choose 'Correlation' in the inter item box

v) Click continue then ok

A score coefficient value above 0.7 is adequate and reliable (George and Mallery, 2003) which indicates that the instument can be used for data collection..

3.6 Data Collection Procedure

The study required acquiring essential documents needed for data collection before starting the exercise. This included a research permit from NACOSTI and a clearance letter from the institution. Upon clearance, data collection was done through the drop and pick method in the sample population in the Universities by the researcher and research assistants.

3.7 Data Analysis Techniques

Data collected from the questionnaires was edited to ensure accuracy, completion and consistent. Thè researcher used SPSS version 23 which is a tool that enables one to obtain certain statistics. Descriptive statistics is concerned with the description and summary of a set of data which includes standard deviation, arithmetic mean and variance. SPSS has functions of descriptive statistics in assisting variables response, compares and gives distinct indications of rèsponse occurrences(Mugenda and Mugenda,2011).

Data was coded, assigned labels to variables categories into the SPSS software. The analysis of quantitative data used descriptive statistics and feedback from the instrument was tallied, tabularized and analysed by the frequency distributions, tables and percentage. The use of Tables presented summarized data for discrete variables where precise values were read. Determining the influence of vendor support variables on the implementation of ERP projects in public universities in Kenya was performed by regression analysis. Qualitative data was thereafter analysed thematically according to the research objectives for easier interpretation.

3.8 Ethical Consideration

The resèarcher sought to obtain authorization from the Universities administration to carry out study in their institutions and from NACOSTI. The participants were guaranteed that the study was exclusively for scholarly reason by the researcher seeking their consent. The information obtained from the respondents would be highly confidential and hence, the rèspondents were requested not to writedown their names on the questionnaire.

Table 3.2 Operationalization of Variables

Objectivès	Type of Variablès	Indicators	Mèasurement Scale	Data Analysis Mèthod	Tools of Analysis
To determine the influence of vendor support in ERP projects implementation	**Dependent** Implementation of ERP Projects	Completion on time and budget Achieving Quality Business Improvement	Ratio		Regression Analysis
To determine how vendor involvement in the system implementation phases influence the implementation of ERP projects in Public Universities in Kenya	**Independent** Vendor Involvement	Number of meetings Trainings Conducted Handling of errors	Interval Interval Nominal	Descriptive	Mean, Standard Deviation and Regression Analysis
To examine how vendor capability, influence the implementation of ERP projects in Public Universities in Kenya	**Independent** Vendor Capability	Consultants on site Technology used	Nominal Nominal	Descriptive	Mean, Standard Deviation and Regression Analysis
To establish how the customer factors influence the implementation of ERP projects in Public Universities in Kenya	**Independent** Customer Factors	Frequency of use Users feedback	Interval Nominal	Descriptive	Mean, Standard Deviation and Regression Analysis
To assess how the vendor-customer linkage influence the implementation of ERP projects in Public Universities in Kenya	**Independent** Vendor – Customer Linkage	Service Level Agreement Frequency of communication	Nominal Interval	Descriptive	Mean, Standard Deviation and Regression Analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents data-analysis and the discussion of the findings based on the variables of study. Data was collected from the respondents through filling in the questionnaires according to the study objectives. Tables showing frequencies and percentages of the data has been used for presentation. The purpose of the study was to determine the influence of vendor support on the implementation of ERP projects in select public universities in Kenya.

4.2 Questionnaire Return Rate

The respondents were key users of the ERP system drawn from six (6) departments in five (5) universities situated in the Mt. Kenya Region. The questionnaire was the key instrument used for data collection, where a total of ninety (90) questionnaires were distributed to the respondents out of which seventy-seven (77) were finished and returnèd giving a response rate of 86% as displayed in Table 4.High response rate from the targeted Universities implies that seeking help from a research assistant to drop and pick the questionnaire was of great importance.

Table 4.1 Questionnaire Return Rate

Response	Frequency (f)	Percentage (%)
Responded	77	86
Did not Respond	13	14
Total	**90**	**100**

4.3 Background Information

This study sought to determine Respondents distribution in the various Universities, Departments, the ERP system that is in use and the year of implementation as the first part of the questionnaire.

4.3.1 Distribution of the Respondènts

Respondents were requested to indicate the name of the University they were working at to know their distribution in the targeted Universities in Mt. Kenya counties as indicated in Table 4.2:

Table 4.2 Respondent Universities

University	Frequency (f)	Percentage (%)
Meru University	14	18.2
Embu University	11	14.3
Kimathi University	19	24.7
Karatina University	14	18.2
Kirinyaga University	17	22.1
Did not Respond	2	2.5
Total	**77**	**100**

The results indicate a total of 75 respondents who were employed in the 5 targeted universities located in Mt. Kenya counties. Only 2 respondents comprising 2.5% did not indicate the

University. 18.2% of the respondents were from Meru University, 14.3% from Embu University, 24.7% from Kimathi University, 18.2% from Karatina University and 22.1% from Kirinyaga University. This implies that the respondents were evenly distributed and filled in the required data since the researcher had acquirèd a letter of introduction letter from the University and NACOSTI research permit.

4.3.2 Respondents Department

The research wanted to find out the departments in which the respondents were working using the ERP system. The results are displayed in Table 4.3.

Table 4.3 Departmènts of Respondènts

Department	Frequency (f)	Percentage (%)
ICT	16	20.8
Procurement	13	16.9
Admissions	17	22.1
Finance	8	10.4
Human Resource	2	2.6
Student Management	12	15.6
Library	2	2.6
Academic	2	2.6
Medical	4	5.1
Did not Respond	1	1.3
Total	**77**	**100**

From the frequency table, it is observed that Admissions constituted 22.1%, ICT 20.8%, Procurement 16.9%, followed by Student Management 15.6%, Finance 10.4%, then Medical 5.1%, Library 2.6%, Academic 2.6% and Human Resource 2.6%. Only 1 respondent did not indicate the department. This is an indication that the respondents from the departments with the highest percentages are many who interact with the ERP system more in their daily operations in the business functions.

4.3.3 ERP System in Use

The study wanted to find out the ERP systèm that is in use in the targeted universities. Table 4.4 indicates findings of the ERP system in use.

Table 4.4 ERP System in Use

ERP System	Frequency (f)	Percentage (%)
Microsoft Navision	74	96.1
ABNO	1	1.3
Sage	1	1.3
KOHA	1	1.3
Total	**77**	**100**

The table shows that Microsoft Navision software constituted 96.1%, ABNO 1.3%, Sage 1.3% and KOHA 1.3%. This indicates that Microsoft Navision is the most prevalent software that is in use in the Universities in Mt. Kenya Counties. Also, this implies that many vendors are more likely to supply and support the Microsoft Navision software.

4.3.4 Years of ERP System Implementation

The study wanted to find out the number of years that the institution has taken to implement the ERP system as displayed in Table 4.5.

Table 4.5 Years of ERP System Implementation

Years	Frequency (f)	Percentage (%)
1-2 years	7	9.1
3-5 years	68	88.3
Over5 years	2	2.6
Total	**77**	**100**

From table 4.5, years of implementation between 1 to 2 years constituted 9.1%, between 3 to 5 years 88.3% and over 5 years 2.6%. It can be concluded that most of the respondents from the Universities had knowledge on when their systems were implemented and most of the systems were implemented in 3 to 5 years which is a long period this implies that the users had sufficient knowledge on the system.

4.4 Involvement and ERP Projects Implementation

The respondents indicated their level of agreement on how vendor involvement in the system life-cycle influences ERP project implementation. This was analysed on the basis of meetings held for the project, trainings conducted and handling of errors by the vendors

4.4.1 Influence of Project Meetings

The influence of project meetings is considered influencing strongly the implèmentation of ERP projects. Respondents stated their level of agreement / disagreement on this indicator as shown in Table 4.6.

Table 4.6: Influence of Project Meetings

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1	5	8	48	14	1	**3.9079**	**.81939**
	%	1.3	6.5	10.4	62.3	18.2	1.3		
Achieving quality	F	1		7	50	16	3	**4.0811**	**.65703**
	%	1.3		9.1	64.9	20.8	3.9		
Business improvement	F	1		8	49	16	3	**4.0676**	**.66890**
	%	1.3		10.4	63.6	20.8	3.9		

From the findings, the respondents agreed that meetings held for a project influences its implementation with respect to quality (Mean=4.0811). This was followed by business improvement (Mean =4.0676) and completion on time and budget (Mean= 3.9079). This finding implies that meetings held for an ERP project by the vendors do influence its implementation.

4.4.2 Influence of Trainings Conducted

The respondent's opinion on the influence of trainings conducted for an ERP project was analysed and displayed in Table4.7.

Table 4.7:Influence of Trainings Conducted

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not respond	Mean	Std. dev
Completion on time and budget	F	2	2	6	51	15	1	**3.9868**	**.79151**
	%	2.6	2.6	7.8	66.2	19.5	1.3		
Achieving quality	F	1	1	4	53	16	2	**4.0933**	**.66115**
	%	1.3	1.3	5.2	68.8	20.8	2.6		
Business improvement	F		1	4	58	12	2	**4.0800**	**.51360**
	%		1.3	5.2	75.3	15.6	2.6		

From the findings, the respondents agreed that the trainings conducted for the project had an influence of the project in achieving quality (Mean=4.0933) followed by business improvement (Mean=4.0800) and lastly completion on time and budget (Mean=3.9868). This finding therefore implies that trainings conducted by the vendors influence the ERP system implementation.

4.4.3 Influence Handling of Errors

The respondents indicated on how much they agree on the influence of handling of Errors of the system by the vendors on ERP implementation. The results was analysed in Table 4.8.

Table 4.8 Influence of Handling of Errors

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1		13	48	13	2	**3.9600**	**.68655**
	%	1.3		16.9	62.3	16.9	2.6		
Achieving quality	F		1	10	44	20	2	**4.1067**	**.66927**
	%		1.3	13.0	57.1	26.0	2.6		
Business improvement	F		1	6	56	12	2	**4.0533**	**.54260**
	%		1.3	7.8	72.7	15.6	2.6		

The findings indicate that the respondents agreed vendors handling of the system errors had influence in regard to achieving quality (Mean=4.1067), business improvement (Mean=4.0533) and completion on time and budget (Mean=3.9600). This implies that the manner in which the vendors respond to handling the systems errors has an influence on ERP projects implementation.

4.5 Capability and ERP Project Implementation

The influence of vendor capability on ERP projects implementation was analysed with reference to having consultants on site for the project and the technology used for the project.

4.5.1 Influence of Consultants on site

The respondents indicated how much they agree to the influence that consultants had on an ERP project implementation. The finding on this variable is as depicted in Table 4.9.

Table 4.9 Influence of Consultants on site

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1	3	10	50	13		**3.9221**	**.75683**
	%	1.3	3.9	13.0	64.9	16.9			
Achieving quality	F		1	7	50	17	1	**4.7632**	**.57546**
	%		1.3	9.1	64.9	22.1	1.3		
Business improvement	F		1	3	57	15	1	**4.1316**	**.52516**
	%		1.3	3.9	74.0	19.5	1.3		

From the Table, it is observed the respondents agreed that having consultants on site has an influence on the implementation of ERP projects. This influence is common with project's quality (μ=4.7632), business improvement (μ=4.1316) and with ERPs project implementation on time and within budget (μ=3.9221). This finding denotes that having an ERP project consultant on site has a strong influence on its completion.

4.5.2 Influence of Technology Used

The study embarked on establishing if the technology used on the software by the vendors had an influence on ERP projects implementation. The indication of level of agreement / disagreement on this variable displayed in Table 4.10.

Table 4.10 Influence of Technology in use

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F			9	56	11	1	**4.0519**	**.55951**
	%			11.7	72.7	14.3	1.3		
Achieving quality	F			8	54	15		**4.0909**	**.54246**
	%			10.4	70.1	19.5			
Business improvement	F			6	55	16		**4.1299**	**.52191**
	%			7.8	71.4	20.8			

The findings on this variable indicate that the respondents strongly agree that the software technology used strongly influence an ERP project implementation specifically on the business improvement (μ=4.1299), quality (μ=4.0909) and the project's completion on time and within budget constraints (μ=4.0519). This variables finding is in variance with the others since its influence is on the projects business improvement unlike others whose strong influence was with respect to quality. However, the findings still support the assertion that the software technology in use strongly influences an ERP project implementation.

4.6 Customer Factors and ERP Project implementation

The influence of customer factors on implementation of ERP projects with regard to the frequency of use and the user's feedback on the system was studied in this section.

4.6.1 Influence of Frequency of Use

Customer's frequency of use on the system supported by the vendors was done to determine if the factor had any influence on ERP projects implementation. The respondents indicated how they agree with the frequency of use having an influence on the project's implementation with respect to time and budget, quality and business improvement. The results on this factor are shown in Table 4.11.

Table 4.11 Influence of Frequency of Use

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1	1	12	46	17		**4.0000**	**.74339**
	%	1.3	1.3	15.6	59.7	22.1			
Achieving quality	F	1		7	50	19		**4.1169**	**.66834**
	%	1.3		9.1	64.9	24.7			
Business improvement	F	1		7	51	18		**4.1039**	**.66063**
	%	1.3		9.1	66.2	23.4			

From the findings presented in the table, the respondents agreed that the frequency of use on the system had an influence in regard to achieving quality (μ=4.1169), followed by business improvement (μ=4.1039) and completion on time and budget (μ=4.0000). This implies that how

frequent the users use the system that the vendors support has a strong influence on ERP projects implementation.

4.6.2 Influence of Users Feedback

The respondents gave their opinions on the effect of user's feedback of using the system and the effect on ERP projects implementation. Table 4.12 displays the analysed data.

Table 4.12 Influènce of Users Feedback

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1	1	11	51	12	1	**3.9474**	**.69079**
	%	1.3	1.3	14.3	66.2	15.6	1.3		
Achieving quality	F	1		6	54	15	1	**4.0789**	**.62744**
	%	1.3		7.8	70.1	19.5	1.3		
Business improvement	F	1		6	56	13	1	**4.0526**	**.60871**
	%	1.3		7.8	72.7	16.9	1.3		

From the findings, the researcher observed that the respondents agreed that the users feedback had an influence in regard to achieving quality (Mean=4.0789), which is followed by business improvement (Mean=4.0526) and completion on time and budget (Mean=3.9474). The results therefore implies that the user's feedback on the system has a strong influence on ERP projects implementation.

4.7 Customer Link and ERP Projects Implementation

Influence of vendor and customer link in view of the service level agreement and the frequency of communication of the system was looked into.

4.7.1 Influence of Service Level Agreement

The respondents' views on the influence of service level agreement on ERP projects implementation is depicted in Table 4.13.

Table 4.13 Influence of Service Level Agreement

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Did Not Respond	Mean	Std dev
Completion on time and budget	F	1	1	10	51	13	1	**3.9737**	**.69231**
	%	1.3	1.3	13.0	66.2	16.9	1.3		
Achieving quality	F	1		13	45	17	1	**4.0132**	**.72099**
	%	1.3		16.9	58.4	22.1	1.3		
Business improvement	F	1		5	54	16	1	**4.1053**	**.62352**
	%	1.3		6.5	70.1	20.8	1.3		

From the findings presented on the table the respondents agreed that the service level agreement of the system had influence on business improvement (Mean=4.1053) mostly because the service level agreement is grounded on business by both parties, followed by achieving quality (Mean=4.0132) and completion on time and budget (Mean=3.9737). This infers that majority of the respondents agree that service level agreement has a strong influence of ERP projects implementation

4.7.2 Influence of Frequency of Communication

The respondents gave their opinions on the influence of frequency of communication between the customers and vendors in regard to ERP project implementation indicated in Table 4.14.

Table 4.14 Influence of Frequency of Communication

		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	NR	Mean	Std dev
Completion on time and budget	F		1	8	53	14	1	**4.0526**	**.58640**
	%		1.3	10.4	68.8	18.2	1.3		
Achieving quality	F			4	52	20	1	**4.2105**	**.52449**
	%			5.2	67.5	26.0	1.3		
Business improvement	F	1		4	52	19	1	**4.1579**	**.63356**
	%	1.3		5.2	67.5	24.7	1.3		

As observed from the table, the respondents agreed that the frequency of communication by the two parties on the system support had an influence in regard to achieving quality (Mean=4.2105) followed by business improvement (Mean=4.1579) and completion on time and budget (Mean=4.0526). It can therefore be concluded that the frequency of communication between the vendor and customers on the system has a strong influence on ERP projects implementation.

4.8 ERP Implementation Rating

The overall ERP Implementation was studied in view of the indicators of time, budget, quality and business improvement against meeting the objectives of the study.

4.8.1 ERP Project Completion

The study sought to determine ERPs project completion on time and the duration of delay. Table 4.15 presents the results.

Table 4.15 ERP Project Completion

Response	Frequency (f)	Percentage (%)
Yes	9	12
No	66	86
Did Not Respond	2	2
Total	**77**	**100**

As observed, 85% agree the ERP projects were not completed on time, while 12% indicated that the projects were completed on time. 2% did not respond to the question. The results therefore indicated majority of the ERP projects implemented in the Universities were delayed.

4.8.2 Project Delay Time

Table 4.16 displays findings of the time it took for the delay of the project.

Table 4.16 Project Delay Time

Delayed Time	Frequency (f)	Percentage (%)
1 month	11	14
2-3 months	40	52
Over 3 months	6	8
Did Not Respond	20	26
Total	77	100

As observed, 52% of the respondents indicated the project delayed between 2 and 3 months, while 14% indicated delay of 1 month, 8% indicated over 3 months and 26% did not respond. The non-response is majorly because most of the users may not be aware of the Service Level Agreement between the vendors and the institution and what was decided on when the project should be completed. Rebello(2017) urges that ERP project implementation should take between 6 months to 1 year to complete. This therefore concludes that the projects in the Universities exceeded the required time.

The study further sought to establish if the vendor support influenced the delay of the project as indicated in Table 4.17.

Table 4.17 Vendor Support on Project Delay

Vendor Support	Frequency (f)	Percentage (%)
Yes	49	64
No	18	23
Did Not Respond	10	13
Total	**77**	**100**

As observed, 64% of the respondènts indicated that the vendor support influenced the delay of the project, while 23% indicated that the vendor support did not influence the delay of the project. 13% did not respond to the question maybe because unawareness of the critical factors relating to ERP project implementation. This therefore supports (Ghosh, 2012) on vendor support as a the cause of delay in ERP project implementation which concludes that vendor support can cause a project not to be implemented on time.

4.8.3 Project Budget

The study sought to find out ERP projects completion within the stipulated budget. The respondents indicated and results analysed as shown in Table 4.18.

Table 4.18 Project Budget

Within Budget	Frequency (f)	Percentage (%)
Yes	13	17
No	2	3
I don't know	58	75
Did Not Respond	4	5
Total	**77**	**100**

From the responses, 75% did not know whether the project implementation was within budget. This may be because the budget is an important matter that is handled at the Top Management level. Only users within the Procurement, Finance and ICT might be aware of the budget. 17% indicated that the project was within budget, 3% indicated that it was not within budget as they might have been aware of the figures, while 5% did not respond to the question. Hence, it is a clear indication that users do not know if the Projects implemented are within budget.

The study further sought to find out if the estimated exceeded cost if the project was not within budget. The results were depicted in Table 4.19.

Table 4.19 Estimated Exceeded budget cost

Exceeded Cost	Frequency (f)	Percentage (%)
Less than 10%	2	3
10% - 50%	2	3
More than 50%	1	1
Did Not Respond	72	93
Total	**77**	**100**

From the findings, 93% of the respondents did not answer since it required a response if the budget had exceeded the estimated budget. Both less than 10% and between 10% and 50% were at 3% each while only more than 50% was at 1%. This clearly indicates that the ERP project implementation do not exceed more than 50% of the estimated budget.

4.8.4 Aspects of Quality

Respondents indicated the level of agreement/ disagreement on how vendor support influences the aspects of quality in ERP implementation as displayed in Table 4.20.

Table 4.20 Aspects of Quality

Quality	Mean	Std. Dev
Conformance to organizational requirements	4.4675	3.44729
Fitness for purpose	4.1316	.49912
Satisfaction of user needs	4.1429	.55522
Customer satisfaction	4.0909	.58897

As observed, the respondents agreed that vendor support influence conformance to organizational requirements (Mean=4.4675), satisfaction of user needs (Mean =4.1429),

followed by fitness for purpose (Mean=4.1316) and Customer satisfaction (Mean=4.0909). It can be concluded therefore that vendor support influences quality in ERP projects implementation.

4.8.5 Business Improvement

Respondents indicated on the level of agreement / disagreement on how vendor support influences the aspects of business improvement shows in Table 4.21

Table 4.21 Aspects of Businèss Improvement

Businèss Improvement	**Mean**	**Std. Dev**
Reduction in operational cost	4.0779	.72122
Improvement in decision making	4.0130	.61758
Better resource management	4.1818	.53132
Customer service improvement	4.2078	.52158
Increased competitive advantage	4.0779	.55645

From the findings, the respondents agreed that vendor support influences customer service improvement (Mean=4.2078), better resource management (Mean=4.1818), Reduction in operational cost and increased competitive advantage both (Mean=4.0779) and improvement in decision making (Mean=4.0130). It can be concluded therefore that vendor support influences business improvement in ERP projects implementation.

4.9 Regression Analysis

The relationship that exists between the Vendor Support and Implementation of ERP projects was established thru Regression Analysis that involved entering data, coding and measurement, by SPSS version 21 as shown in Table 4.22

Table 4.22 Regrèssion Analysis

Modèl Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df 1	df2	Sig. F Change
1	.521[a]	.272	.231	.07637	.272	6.719	4	72	.000

Predictors: (Constant), Vendor-Customer Link, Vendor Capability, Vendor Involvement in system implementation phases, Customer Factors

The obtained value of R square is .272 which is accounted for by the vendor-customer link, vendor capability, vendor involvement in system implementation phases and customer factors of the vendor support. This also explains 27.2% of observed change in ERP project Implementation. This has revealed a positive relationship between the variables studied.

4.10 Analysis of Variance (ANOVA)

The ANOVA findings from Table 4.23 indicate a correlation between the predictor variables which are vendor involvement in system implementation phases, vendor capability, customer factors and vendor-customer link and the response variable which is the ERP project implementation. It also shows that correlation exists between the predictor and response variables as shown by the Sig. also known the p value < 0.05 which indicates overall model is significant. Independent variables (F=6.719, p=0.000) significantly explain the variance in ERP project implementation.

Table 4.23 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.157	4	.039	6.719	.000[b]
Residual	.420	72	.006		
Total	.577	76			

Dependent Variable: ERP Implementation

Predictors: (Constant), Vendor-Customer Link, Vendor Capability, Vendor Involvement in system implementation phases, Customer Factors

4.11 Correlation Analysis

Correlation Analysis was performed to determine relationship of the vendor support variable and implementation of ERP projects as observed in Table 4.24.

Table 4.24 Relationship between Vendor Support and Implementation of ERP projects

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.460	.077		6.011	.000
Vendor Involvement in system implementation phases	.167	.092	.0284	1.819	.073
Vendor Capability	.280	.114	.318	2.451	.017
Customer Factors	-.017	.122	-.023	-.140	.889
Vendor-Customer Link	.020	.117	.032	.174	.862

Dependent Variable: ERP Implementation

The values of the regression equation have been derived from the regression model as follows:

$Y = 0.460 + 0.167X_1 + 0.280X_2 - 0.017X_3 + 0.020X_4 + \varepsilon$

Where:

X_1 = Vendor involvement in system implementation phases

X_2 = Vendor Capability

X_3 = Customer Factors

X_4 = Vendor – Customer Link

ε = Standard Error

From the regression model, when vendor involvement in system implementation phases, vendor capability, customer factors, vendor-customer link are 0, ERP implementation would be at 0.460. A unit increase in vendor involvement in system implementation phases would yield 0.167 increase of ERP implementation; unit increase in vendor capability would yield 0.280 increase in ERP implementation; a unit increaser in customer factors would return 0.017 decrease in ERP implementation while an increase in the vendor-customer link would return 0.020 increase in ERP implementation.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises research findings from the analyzed data, gives discussions of findings, conclusions of the research, recommendations and further research suggestions of the area covered. The study sought to establish the influence of vendor support in the implementation of ERP in select public Universities in Kenya, which was guided by four objectives.

5.2 Summary of Findings

This section is summarized in accordance with the objectives in the following sections.

5.2.1 Involvement in system phases and Implementation of ERP projects

The study found out that the vendor's involvement in every stage of system implementation is crucial for ERP projects implementation. The respondents indicated that the number of meetings conducted by the vendors highly influences the project implementation. The meetings should be held regularly and involve the project team members to ensure that they participate fully in working with the vendors. It was also established that the trainings conducted for the project is a crucial element in influencing the implementation. This was seen as respondents indicated that achieving quality and improving the business of the organization has to be achieved through trainings for users to be equipped with the necessary skills to use the software. Furthermore, it was established that how the vendors respond to handling of errors in the system affects the implementation. The vendors need to act on the requests made so that the users can work confidently in achieving the organizations mission.

5.2.2 Capability and Implementation of ERP Projects

The second objective was to examine how vendor capability influences implementation of ERP projects in public universities in Kenya. It was established that having consultants on site throughout the implementation process has an effect in the system completion on time and budget, achieving quality and the organizations business improvement. It was further found out that the technology that the vendor uses on the software is a significant factor that influences the project implementation. Using current technologies to develop the system would ease the implementation scuffle.

5.2.3 Customer Factors and Implementation of ERP projects

Majority of respondents attributed how frequent the users use the system influences ERP implementation. This was established by their level of agreement where most agreed that this would improve on achieving quality. Through conducting various trainings by the vendors to the users, the users would have enough confidence to work with the software. The user's feedback about the system was also found out to play a role in the implementation. The respondents agreed that the user's response to the vendor about the system on any issues would either make the implementation a success or failure.

5.2.4 Customer Link and Implementation of ERP projects

The finding from the study showed that most of the respondents indicated that the Sèrvice Level Agreement between the vendor and customer improves business improvement of the organization as a result of implementation. This would be because of the business nature that both parties adhere to. How frequent the communication is done by both parties has been

established to influence the implementation of the projects. Lack of enough communication may lead to the implementation not to achieve the required objectives.

From the regression model, positive effect was conveyed in the vendor involvement in system phases, vendor capability and vendor-customer link, while negative effect was found in customer factors. Correlation indicated a linear relationship between vendor support and Implementation of ERP projects. The regression analysis revealed (R=0.272)positive relationship. The coefficient of determination revealed that 27.2% of variancè in ERP implementation is clarified by vendor support. Therefore, 72.8% can be accounted for by the other nine CSF for ERP implementation.

5.3 Discussion of Findings

Majority of respondents from the findings indicated that the ERP implementation duration in the institution was between three to five years showing most of the universities in the region adopted the system almost at the same time. It was also observed that the most used ERP system by the Universities is Microsoft Navision which confirms that many vendor companies of the system have penetrated to the academic field.

Many related studies have shown existing a strong relationship between vendor support and Implementation of ERP projects. This agreès with the findings of Wang and Chen(2006) that the solutions given by the vendor before, during and after the configuration of the software influences how effective the ERP system is.

It was established from the study that ERP projects implementation requires frequent meetings to be carried out especially during the initial stages of the project. This has been observed also to influence achieving of quality, business improvement and completion within time and budget. Holding regular meetings to keep project members engaged in the project activities is therefore

paramount for ERP implementation. It also indicated that the trainings conducted by the vendors to the users influence the implementation of ERP projects. The study is in agreement with Maditinos, Chatzoudes and Tsairidis (2011) who suggest that the users should be given training opportunities on a continuous basis to enhance their skills.

It was also established that communication between the vendors and the members of the organization influence the ERP implementation. This is strongly seen from the findings where the Users feedback, frequency of communication and the service level agreement play a role in achieving quality and improving business. This supports the study done by Maditinos et.al (2011) that more communication should be done between the vendors and users to smoothen the project implementation.

Vendor support was identified as an important contributor to projects and agrees with some of the studies conducted on ERP implementation. Villari and Jharkharia (2012) suggest that vendor reputation, technical strength and capabilities, vendor –customer cooperation should be thought about before implementing process starts. Gandhi (2015) grouped the vendor support as a tactical factor that involves user training, wide communication and technical ability which is a great influence to the ERP implementation success which the study concurs with its findings.

Vendor capability was found to have the highest correlation with ERP projects implementation. This finding has been echoed by Williams (2016) who reiterated on the need to have experienced vendors to respond to service delivery and provide knowledge resources. In addition, having consultants on site was preferred to ease the implementation process. Vendor involvement in system implementation phases also had a positive relationship with the ERP implementation. This echoes Markus and Tanis (2000) who emphazised on having the main players in evry phase of the project lifecycle. The vendor-customer link also recorded a positive relationship with the

ERP implementation as having frequent communication and agreement on the service level is significant. The customer factors had a low correlation with the ERP implementation. This can be attributed to the customers not playing a big role in the ERP implementation since they are on the receiving end which is mostly confined to using the system (O'Leary, 2012)

5.3 Conclusions

It is concluded from the study that vendor support influences ERP implementation positively. The four variables in the study that is: vendor involvement in the system implementation phases, vendor capability, customer factors and vendor-customer link were tested which explains their significance in influencing the ERP implementation positively.

Apart from the vendor support, the other critical success factors which include top management support, change management, business process reengineering, project management, communication, user training, organization mission and vision also influence the ERP implementation. As observed from the findings, the vendor support accounts for 27.2% contribution. Therefore, all the factors should be considered to guarantee successful ERP implementation.

5.4 Recommendation for policy action

From what was established, vendor involvement in the system implementation phases, vendor capability and vendor-customer link are very critical in the implementation of ERP projects. The universities and other sectors should consider seriously the three factors when implementing the enterprise resource planning systems.

The study also recommends that the universities that have implemented the ERP projects should do a post-implementation analysis of systems. This will enable organizations review the areas

that need to be worked on and to know how to improve the process in the future. Areas will include maintenance of the system, budget allocation and upgrades to newer versions.

Even though the customer factors in the study was found to be insignificant, the top management should encourage still the end users to work with the vendors closely in the areas of giving the feedback of the system and also utilizing the system fully to ensure that the implementation is 100% implemented.

5.5 Recommendation for further study

The focus of study was on vendor support influence on ERP projects implementation in public universities in Kenya. Therefore, future research can be carried out in the Private universities in the country. Also, other industries can be a focus for future studies such as transport, health, housing and the agricultural sector. Replication of the same study in the other sectors will provide resourceful information and would add to the current body of knowledge.

In addition, the ERP implementation study should move the focus to the vendors company as major stakeholders of the system. This will enable to get information from vendor's perspectives in implementing the system projects since vendors have a diverse knowledge in developing the systems in the different sectors.

REFERENCES

Akkermans, H., & Helden, K. (2002). Vicious and virtuous cycles in ERP implementation: a case study of interrelations between critical success factors. *European Journal of Information Systems vol 11*, 35-46.

Ali, T., Hussain, A., Takwa, T., & Ra'ed, M. (2015). Analysis of the Critical Success Factors for Enterprise Resource Planning Implementation from Stakeholders' Perspective: A Systematic Review . *International Business Research; Vol. 8, No. 4*, 25-40.

Bala, H., & Venkatesh, V. (2013). Changes in Employees' Job Characteristics During an Enterprise System Implementation: A Latent Growth Modeling Perspective. *MIS Quarterly*, 1113-1140.

Basu, V., & Lederer, A. L. (2004). An agency theory model of ERP implementation. *conference on Computer personnel research: Careers, culture, and ethics in a networked environment* (pp. 8-13). New York: Association of Computing Machinery.

Chepkoech, S., & Noor, I. (2014). Effects of enterprise resource planning implementation on supply chain performance in manufacturing sector in Kenya: A case of Unilever Limited. *International Journal of Social Sciences and Entrepreneurship*, 75-494.

Chofreh, A. G., & Goni, F. A. (2011). Enterprise Resource Planning (ERP) Implementation Process: Project Management Pespective. *Advanced Materials Research Vol. 338*, 152-155.

Claybaugh, C. C., & Srite, M. (2009). Factors contributing to the Inforation Technology Vendor-Client Relationship. *Journal of Information Technology Theory and Application, Vol.10*, 19-38.

Cooper, D. R., & Schindler, P. S. (2013). *Business Research Methods 12th Edition.* New York: McGraw-Hill Higher Education.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* New York: SAGE Publications.

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-Year Update. *Journal of Management Information Systems*, 9-30.

Dezdar, S., & Ainin, S. (2011). The influence of organizational factors on successful ERP implementation. *Management Decision Vol. 49 Issue: 6*, 911-926.

Fraenkel, J. R., & Wallen, N. E. (2011). *How to Design and Evaluate Research in Education.* New York: McGraw-Hill Education.

Gay, L. R., & Diehl, P. L. (1992). *Research methods for business and management.* New York: Maxwell Macmillan International.

Gefen, D. (2014). What Makes an ERP Implementation Relationship Worthwhile: Linking Trust Mechanisms and ERP Usefulness. *Journal of Management Information Systems*, 263-288.

Gholamzadeh Chofreh A, Feybi Ariani,G.,& Gholamzadeh Jofreh, M. (2011). Enterprise Resource Planning (ERP) Implementation Process: Project Management Perspective. *Advanced Materials Research Vol 338*, 152-155.

Gianopoulos, A. (2015). Critical Success Factors in ERP Systems Implementation:the case of medium and small sized Enterprises . *Journal of Business Management and Applied Economics* , 1-14.

Hurbean, L. (2008). *Issues with implementing ERP in the public administration.* Munich: University Library of Munich, Germany.

Kibera, G. (2013). Assessment of Stakeholders Participation in The Implementation of Information and Communication Technology Software Projects: A Case of Jomo Kenyatta University of Agriculture and Technology. *International Journal of Academic Research in Business and Social Sciences*.

Koh, C.,Ang, S.,& Straub, D.W. (2004). IT Sourcing Success: A Psychological Contract Perpective. *Information Systems Research*, 356-373.

Kothari, C., & Garg, G. (2014). *Research Methodology: Methods and Techniques 3rd/2014.* Delhi: New Age International (P) Ltd Publishers.

Law, C., Chen,. C., & Wu,B. J.(2010). Managing the full ERP Life-Cycle:Considerations of Maintenance and Support Requirements and IT Governance Practice as Integral Elements of the Formula for Successful ERP Adoption . *Computers in Industry, volume 61, issue 3,* 297-308.

Loh, T., & Koh, S. C. (2004). Critical elements for a successful enterprise resource planning implementation in small-and medium-sized enterprises. *International Journal of Production Research*, 3433-3455.

Luo, W., & Strong, D. M. (2004). A Framework for Evaluating ERP Implementation choices. *IEEE Transactions on Engineering Management, Vol. 51, No. 3*, 322-333.

Makokha, A. N., Musiega, D., & Juma, S. (2013). Implementation of Enterprise Resource Planning Systems in Kenyan Public Universities, A Case of Masinde Muliro University of Science and Technology. *Research Journal of Finance and Accounting*, 26-34.

Marchewka, J. T. (2002). *Information Technology Project Management.* Newyork: Wiley and Sons.

Mardiana,S., Tjakraatmadja,J.H., & Aprianingsih, A.(2015). DeLone–McLean Information System Success Model Revisited:The Separation of Intention to Use-Use and the Integration of Technology Acceptance Models. *International Journal of Economics and Financial Issues*, 172-182.

Markus, L. M., & Tanis, C. (2000). *The Enterprise System Experience - From Adoption to Success.* Cincinnati: Pinaflex Educational Resources.

Matende, S., & Ogaob, P. (2013). Enterprise Resource Planning (ERP) System Implementation: A case for User Participation. *International Conference on Project Management* (pp. 518-526). Elsevier.

Mohammed, Z., Al-Mudimigh, A., & Al-Mashari, M. (2003). Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research. Vol. 146, No. 2,* 352-364.

Molla, A., & Lee, W. (2006). Critical Elements in the Implementation of ERP. *51st International Council for Small Business Conference.* Melbourne: ICSB (ed.).

Mugenda, O. M., & Mugenda, A. G. (2011). *Research Methods.* Nairobi: Acts Publishers.

Muscatello, R., & Chen, I. J. (2008). Enterprise Resource Planning (ERP) Implementations: Theory and Practice. *International Journal of Enterprise Information Systems vol.4*, 63-78.

Nejib, B. M. (2013). Determinants of Post Implementation Success of ERP in Tunisian Companies: An Empirical Study of the Moderating Role of the Technical Fit. *International Review of Management and Business Research Vol.2, Issue 4*, 1101-1112.

Newman, D. A. (2014). Missing Data: Five Practical Guidelines. *Organizational Research Methods*, 328-362.

Nzuki, D. M., & Odongo, O. W. (2015). Adoption of Enterprise Resource Planning Systems in Kenya: A Case of Selected Manufacturing Firms in Nairobi Metropolitan. *International Journal of Business, Humanities and Technology Vol. 5, No. 2*, 24-32.

O'Leary, D. E. (2012). *Enterprise Resource Planning Systems.* New York: Cambridge University Press.

Otieno, O. J. (2008). Enterprise Resource Planning (ERP) Systems Implementation Challenges: A Kenyan Case Study. *International Conference on Business Information Systems* (pp. 399-409). Springer, Berlin, Heidelberg.

Plant, R., & Willcocks, L. (2007). Critical Success Factors in International ERP Implementations: A Case Research Approach. *Journal of Computer Information Systems, Vol 47*, 60-70.

PMI, P. M. (2000). *A Guide to the Project Management Body of Knowledge.* Newtown Square: Project Management Institute.

Portougal, V. (2006). *Business Processes: Operational Solutions for SAP Implementation.* Hershey PA: Idea Group Inc.

Raija, H. (2011). Reflecting with the Delone and McLean Model. *International Workshop on Practice Research* (pp. 1-13). Helsinki: University of Oulu, Department of Information Processing Science.

Shahin, D. (2012). Strategic and Tactical factors for successful ERP projects:insights from an Asian country. *Management Research Review, Vol. 35 Issue: 11*, 1070-1087.

Shatat, A. S. (2015). Critical Success Factors in Enterprise Resource Planning (ERP) System Implementation. *The Electronic Journal of Information Systems Evaluation Volume 18 Issue 1*, 36-45.

Soh, C., Sia, S. K., & Tay-Yap, J. (2000). Cultural Fits and Misfits: Is ERP a Universal Solution? *Communication of the ACM vol.43*, 47-51.

Somers, T. M. (2001). The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations. *Proceedings of the 34th Hawaii International Conference on System Sciences - 2001* , (pp. 1-8). Hawaii.

Somers, T. M., & Nelson, K. G. (2004). A taxonomy of players and activities across the ERP project life cycle. *Information and Management Vol.41 Issue 3*, 257-278.

Sternad, S., & Bobek, S. (2006). Factors which have fatal influence on ERP implementation on Slovenian organizations. *Journal of information and organizational sciences, Vol. 30, No. 2* , 279-293.

Teo, L. K., Singh, M., & Cooper, V. (2009). Evaluating ERP Success Factors:Vendors Perspective. *AMCIS 2009 proceedings* (p. 665). San Francisco: Association for Information Systems.

Wamicha, E. W., & Seymour, L. F. (2015). A higher education model for developing competencies for critical ERP implementation roles: the case of Kenya. *Beyond development. Time for a new ICT4D paradigm? Proceedings of the 9th IDIA conference* (pp. 408-417). Nungwi, Zanzibar:: IDIA.

Wang, E. T., Lin, C. C.-L., Jiang, J. J., & Klein, G. (2007). Improving enterprise resource planning (ERP) fit to organizational process through knowledge transfer. *International Journal of Information Management*, 200-212.

Williams, T. (2016, 08 07). Why industry knowledge is crucial for an ERP vendor. New York, New York, United States of America.

Wu, D. J., Ding, M., & Hitt, L. M. (2013). IT Implementation Contract Design: Analytical and Experimental Investigation of IT Value, Learning, and Contract Structure. *Information Systems Research Vol. 24, No. 3,*, 787–801.

APPENDIX 1 – QUESTIONNAIRE FOR KEY ERP USERS

Kindly fill the form and answer all the questions given as per instructions. Do not indicate your name.

Instruction: Please mark your answer applicably [√]

Part 1: University Information

1. Name of Univèrsity……

2. Which department are you working in:

ICT	[ ]
Procurement	[ ]
Admissions	[ ]
Finance	[ ]
Human Resource	[ ]
Student Management	[ ]
Other	[ ] Specify……

3. Which Enterprise Resource Planning (ERP) system are you using:

Microsoft Navision	[ ]
ABNO	[ ]
Sage	[ ]
In-house developed	[ ]
Other	[ ] Specify……

4. When was Enterprise Resource Planning (ERP) implemented in your Institution:

1-2 years	[ ]
3-5 years	[ ]
Over5 years	[ ]

Part 2: Influence of vendor support factors on the implementation of Enterprise Resource Planning Projects

Use the following choices in Section A-E to tick [√] as appropriate.

1. **(SD)** - Strongly disagree
2. **(D)** - Disagree
3. **(N)** - Neutral
4. **(A)** - Agree
5. **(SA)** - Strongly agree

Section A: Involvement in the system phases

5. To what extent do you agree that meetings held for a project influence the following aspects of ERP Implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

6. To what extent do you agree that the trainings conducted on the project has improved the following aspects of ERP Implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

7. To what extent do you agree that handling of errors has improved the following aspects of ERP Implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

SECTION B: Capability and implementation of ERP projects

8. To what extent do you agree that having consultants on site has improved the following aspects of ERP Implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

9. To what extent do you agree that the technology used on the project has improved the following aspects of ERP Implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

SECTION C: Customer factors and implementation of ERP projects

10. To what extent do you agree that the frequency of use of the system has improved the following aspects of ERP implementation?

	SD	**D**	**N**	**A**	**SA**
Completion on time and budget					
Achieving quality					
Business improvement					

11. To what extent do you agree that the user's feedback on the system has improved the following aspects of ERP implementation?

	SD	D	N	A	SA
Completion on time and budget					
Achieving quality					
Business improvement					

SECTION D: Customer Link and implementation of ERP projects

12. To what extent do you agree that the Service Level Agreement has improved the following aspects of ERP implementation?

	SD	D	N	A	SA
Completion on time and budget					
Achieving quality					
Business improvement					

13. To what extent do you agree that the frequency of communication on the system has improved the following aspects of ERP implementation?

	SD	D	N	A	SA
Completion on time and budget					
Achieving quality					
Business improvement					

SECTION E: ERP Implementation rating

14. a) Was the ERP project completed on time:

Yes [ ]
No [ ]

b) If the project was not completed on time, for how long did it delay:

1 month [ ]
2-3 months [ ]
Over 3 months [ ]

c) Did the vendor support influence the delay of the project:

Yes [ ]
No [ ]

15. a) Was the ERP project completed within budget:

Yes [ ]
No [ ]
I don't know [ ]

b) If your answer is NO to (a) above, what was the estimated exceeded cost:

Less than 10% [ ]
10% - 50% [ ]
More than 50% [ ]

16. To what extent do you agree that the vendor support has influenced the ERP implementation in achieving the following aspects of quality

	SD	**D**	**N**	**A**	**SA**
Conformance to organizational requirements					
Fitness for purpose					
Satisfaction of user needs					
Customer satisfaction					

17. To what extent do you agree that the vendor support has influenced the ERP implementation in achieving the following aspects of business improvement

	SD	**D**	**N**	**A**	**SA**
Reduction in operational cost					
Improvement in decision making					
Better resource management					
Customer service improvement					
Increased competitive advantage					

Thank you!

APPENDIX II – Transmittal Letter

The Project Manager,

.....

Dear Sir/Madam,

RE: REQUEST TO COLLECT DATA FROM YOUR INSTITUTION.

My name is Rael Ayieko, a Master of Arts (Project Planning and Management) student at the University of Nairobi. As partial fulfillment of the degree, I am conducting a research on influence of vendor support in the implementation of ERP projects in Select Public Universities in Kenya. Your organization has been sampled to be a respondent in this survey.

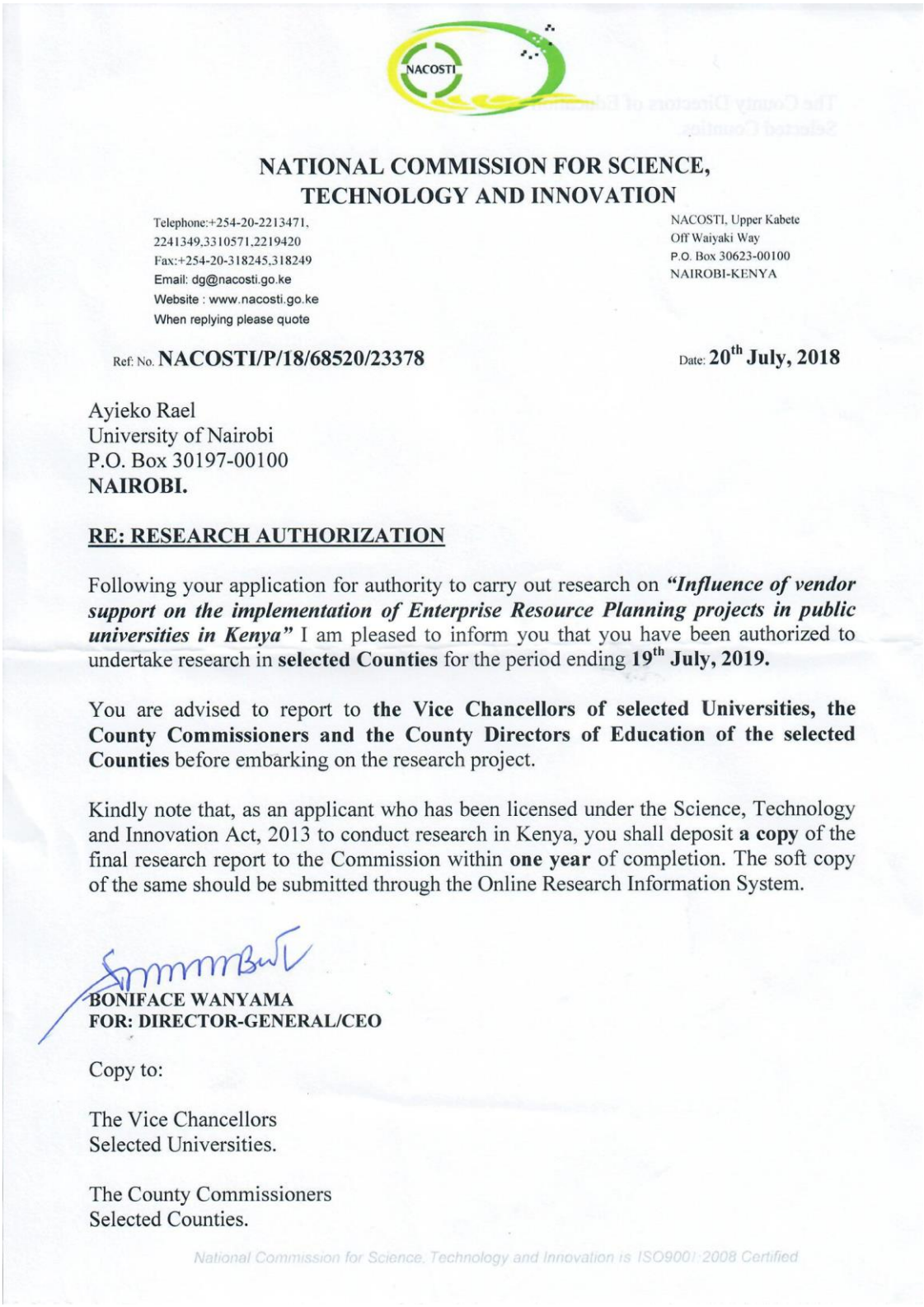
Thus, I kindly request you to respond to the questions attached as per the questionnaire. The information you give on this questionnaire will be treated with confidentiality and at no instance will it be used for any other purpose other than the academic. The researcher will be available to clarify any issue during the data collection process.

Your assistance is highly appreciated. I look forward for your prompt response.

Yours faithfully,

Rael Ayieko

APPENDIX III – RESEARCH PERMIT



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Website : www.nacosti.go.ke
When replying please quote

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NAIROBI-KENYA

Ref: No. **NACOSTI/P/18/68520/23378**

Date: **20th July, 2018**

Ayieko Rael
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Influence of vendor support on the implementation of Enterprise Resource Planning projects in public universities in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **selected Counties** for the period ending **19th July, 2019.**

You are advised to report to **the Vice Chancellors of selected Universities, the County Commissioners and the County Directors of Education of the selected Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Vice Chancellors
Selected Universities.

The County Commissioners
Selected Counties.