

**FACTORS INFLUENCING IMPLEMENTATION OF MANAGEMENT
INFORMATION SYSTEM PROJECTS IN TERTIARY LEVEL ACADEMIC
INSTITUTIONS IN MOMBASA COUNTY, KENYA**

BY

VICTOR K. KITHOME

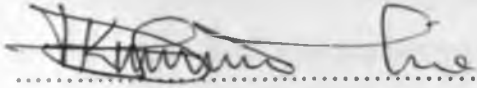
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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS DEGREE IN
PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI**

2012

DECLARATION

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


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8/8/2012
.....

VICTOR K KITHOME

DATE

L50/64962/2010

This research project report has been submitted for examination with my approval as the University Supervisor


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8/8/2012
.....

DR. JACKSON MAALU

DATE

University of Nairobi

DEDICATION

I dedicate this work to my loving parents Mr. and Mrs. Benson Kithome, my brothers and my lovely sisters. Their love, support patience, encouragement and understanding gave me the will and determination to complete my postgraduate studies

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ABBREVIATIONS AND ACRONYMS

MIS	Management Information Systems
MPUC	Mombasa Polytechnic University College
MTTI	Mombasa Technical Training Institute
GTI	Government Training Institute
DSS	Decision Support System
EP	Expert System
NUC	National Universities Commission
PC	Personal Computer
ARPANet	Advanced Research Projects Agency Network.
EDI	Electrical Data Interchange
DBMS	Database Management System
ERP	Enterprise Resource Program
ICT	Information Communication Technology
IT	Information Technology
TQM	Total Quality Management
WWW	World Wide Web

ABSTRACT

The study is about the factors influencing implementation of management information system in tertiary level academic institution in mombasa. The study explains how management information system are implemented and the institutions and how it is beneficial to the organization.

The objective of the study will be to determine the factors that influence the implementation of MIS projects in tertiary level academic institutions in mombasa and to determine how these institutions improve their operations after they implement MIS

To satisfy the research objectives, the author used a descriptive research design comprising of a survey study of the tertiary level institutions in mombasa. According to the ministry of higher education there are 109 tertiary level academic institutions in mombasa.

The population of study comprised of all the tertiary colleges in mombasa which were classified in to public, private professional and technical colleges where the researcher went to only one specific personnel who has wealth of information about the implementation of management information system in their institution and mostly this was the Director or Heads of management information system in every institution

Primary data was collected using semi-structured questionnaires. The questionnaires were dropped and picked up later. Once the data were collected the researcher carried out the analysis of the same using SPSS tool. Where applicable presentation were done in graphs and pie charts .

The study established that the factors that affect implementation of MIS projects in tertiary level academic institution includes but not limited to inadequate top level support where top level manager do not support the MIS project and do not want a change of operations and the expenses involved. The problem with the MIS project implementation fund also affect the implementation of such projects. The technical aspect involved in the implementation of MIS projects touching on need to network the operation, need for database that will ensure control of operation, need for internet for communication within and even global communication and the web site for marketing. There is also need for qualified personnel to assist in the process of MIS project implementation and also the use of the system without incurring other cost of training

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CHAPTER ONE:

INTRODUCTION

1.1 Background of the Study

Project management requires more than just implementing activities identified in a log frame. The components of a successful project include managing relationships with various stakeholders (project participants, partners, governments, donors, the management team in academic institutions, and internal stakeholders in the branch office and headquarters), managing human resources, managing financial resources, facilitating learning, managing risks and ensuring flexibility. Davidson (2008)

A project manager is guided by some principles and standards in all of his work, including how the project is designed, what implementation strategies are used, what type of ongoing monitoring data is being collected, how evaluations are carried out and how that information is used to improve ongoing and future projects. Chimwendo (2008)

While the primary focus should be on MIS project implementation, it is important to recognize how your project relates and contributes to a broader program that promotes longer-lasting and more fundamental change in the lives of intended beneficiaries. While all projects aim for some level of impact, typically the scope and duration of a single project is not sufficient to fully bring about a sustainable change in peoples' lives. Yet it can, and should, be accountable for making important contributions to such change, along with additional contributions made by the beneficiaries themselves Davidson (2008)

Pinto (1987) argued that a project is an organization of people dedicated to a specific purpose or objective. Projects generally involve large, expensive, unique, or high risk undertakings which have to be completed by a certain date, for a certain amount of money, within some expected level of performance. At a minimum, all projects need to have well defined objectives and sufficient resources to carry out all the required tasks.

Cleland and Kerzner (1999) a project is a combination of human and nonhuman resources pulled together in a temporary organization to achieve a specified purpose. Implementation of a project is the step where all the proper planned activities are put into action. Usually project implementation process involves preparing, deployment, maintaining and use of the final product of the project. Project managers and sometimes project team members are committed to controlling and monitoring project implementation process. Project team helps run project evaluation process which precedes project implementation process. Project evaluation process includes performing a complete analysis of customer's needs and requirements and results in forming the definition of one or more projects to be implemented.

Project Implementation process may be effective if some very important factors are kept in mind that are urgent in a project management system. Drucker (2008)

According to Drucker (2008) in his article Project implementation said Project implementation process entails creation of a customizable framework that helps project managers to set up and manage project implementation stages. Customization of project implementation process framework lets leverage the use of management standards, policies and procedures and ensures that management expectations and plans for project implementation stages are properly outlined and applied. When project implementation process is structured, customized and organized into consistent project implementation steps, all conditions required for creation of a responsive project management environment are met, and project manager can start implementing a project. If there are several projects to be implemented, project implementation steps should be adjusted with all projects involved to start common project implementation process. If project implementation steps are not adjusted and not coordinated, several project implementation processes will be launched simultaneously.

Project cost and time overruns can occur because of lack of a measurement system for assessing and controlling project risk Mensah, (1997). McFarlan (1981) developed dimensions of project risk assessment based upon project size, experience with the technology and project structure. Project management and control failures caused by inadequate planning and tracking can contribute to unrealistic schedules and budgets and project failure Block, (1983) and Boehm, (1991).

Systems implementation consists of developing all of the system components data collection forms; data collection, transfer and processing procedures; data entry procedures and screens (including on-line edit checking); software; report forms; report distribution; quality control procedures. As mentioned, we recommend the use of an iterative, rapid-prototyping approach to the software implementation. It is highly recommended to field-test major systems in a single geographic area before going full scale. This field testing involves not only software, but all aspects of the system (e.g., data collection procedures, training, and quality control).

The importance of allowing for prototyping and field testing cannot be minimized. A key problem faced in developing countries is data integrity. From previous experience, we know that users become much more interested in data integrity after seeing the data they reported in a printout. Caldwell (1993). The system procedures will allow for regular feedback of data to the source levels, for review and correction. In a developing country, a considerable amount of time must be allowed for implementation. Data that are taken for granted in a highly developed country often do not exist in a developing country. For example, in a recent MIS development effort in Egypt, there did not exist a correct, complete list of settlements. Since settlement-level statistics were desired (e.g., percentage of settlements without piped water), it was necessary to construct a settlement list before the data collection effort could begin. Caldwell (1993)

Universities all over the world generate voluminous amounts of data daily because of the nature of their administrative and research activities. To make effective use of such data, many higher learning institutions have utilized management information systems (MIS) (Gordon and Walko,(1999). The top decision-making body responsible for higher education in Nigeria the National Universities Commission of Nigeria (NUC) believed that developing an MIS for their country's universities would go a long way in effectively managing information for all the stakeholders in the university systems; namely, teachers, students, administrators, staff, etc. (NUC, 1989). The MIS project was expected to create an administrative computing environment that handled records, data, and financial information relating to all aspects of the academic environment.

Archibald (2008) in his paper Management information system for project and for organizations said that Organization of all types:-business, industrial, institutional, governmental - are structured and shaped to meet the needs of the primary purpose of each individual organization. This structure invariably results in some form of hierarchy or bureaucracy, segregating and dividing the various functions such as marketing, manufacturing, engineering, and so on.

The financial, logistics, business acquisition and resources management information systems which we have today are designed to serve the structural, hierarchical organization which has a certain permanency associated with it. Financial budgets and reports are provided for organizational sections, departments and divisions, for example. Production control systems serve the manufacturing division and have nothing to do directly with engineering. Information is provided to each functional manager concerning his limited segment of the total operation as orders are obtained and fed into production, and as the raw materials are purchased, processed and shipped to the customers

Tabije (2007) Management Information Systems (MIS) is a general name for the academic discipline covering the application of information technology to support the major functions and activities of either a private sector business or public sector institution.

In business, information systems support the process of collection, manipulation, storage, distribution and utilization of an organization's information resources, business processes and operations. As an area of study it is also referred to as information technology management. The study of information systems is usually a commerce and business administration discipline, and frequently involves software engineering, but also distinguishes itself by concentrating on the integration of computer systems with the aims of the organization. The area of study should not be confused with computer science which is more theoretical in nature and deals mainly with software creation, and not with computer engineering, which focuses more on the design of computer hardware. IT service management is a practitioner-focused discipline centering on the same general domain, Tabije (2007). Management Information Systems are not just statistics and data analysis, but also assessment of human capabilities. They have to be used as an (MBO) Management by Objectives tool. They

help to establish relevant and measurable objectives; monitor results and performances (reach ratios) and send alerts to managers at each level of the organization, on all deviations between results and pre-established objectives and budgets.

Laudon, (2002). In the beginning, business computers were used for the practical business of computing the payroll and keeping track of accounts payable and receivable. As applications were developed that provided managers with information about sales, inventories, and other data that would help in managing the enterprise, the term "MIS" arose to describe these kinds of applications. Today, the term is used broadly in a number of contexts and includes (but is not limited to): decision support systems, resource and people management applications, project management, and database retrieval applications.

According to Chen and Cheng (2008) noted that the Management information system (MIS) is charged with improving the performance of organizations and people through the employ of information technology. MIS is a multifaceted discipline which combines technologies, personnel, processes and organizational mechanisms. Obviously, the success of MIS is measured in terms of individual and organizational performance.

Moreover, MIS has been adopted in this management information system towards improving the management information systems in small and medium organizations where the tertiary level academic institutions fall. It is hoped that this adoption would reduce the cost of managing the systems and helps the tertiary level academic institutions assisting their managers in analyzing problems, making decisions, and creating new ways to work. Brooke Hart (1970) she said with the advent of computer programs for business applications, it became apparent that the communication gap that existed between computer programmers and business people had to be solved. Business people wanted programmers to come up with the ultimate solution for their problems and programmers had a hard time explaining to management what was possible and what was not technically possible. The solution was to design a course of study which merged information technology, business and computer programming. This field was called, Management Information Systems (MIS). The idea was to create a workforce who could bridge the communication and technical gaps between management and computer programmers. The

first courses were taught in as business courses in select colleges in America. The courses started off as electives in the area of business. As the 1970s closed, colleges and business schools would create full four-year programs designed for studies in the field of information systems. The idea of developing an Information System for the Mombasa colleges came to light when the management of the college started experiencing some major difficulties in record-keeping, searching for records, querying, sorting of data, performing calculations and manipulations of data, insufficient spaces for filing cabinets, irregularities in collection and keeping records of tuition fees, difficulties in keeping records of present and past students, compilation and storage of grades and assessments.

The Board of Trustees met and decided to find a lasting solution to these problems by proposing the designing of a unique Information Systems. From 1980 to the present, there has been an explosion of technology in the field of information systems. The integration of the personal computer (PC) into the workplace and homes has made information readily available to all people. The creation of wide area networks, the Internet and distributed processing have changed the way people obtain information. The concept of Management Information Systems has expanded to include data mining (databases of archived information), data retrieval sciences (critical business data stored on microchips) and technology used in everyday devices such as cell phones, wireless devices that require the passage of important data as well as integrated software for common functions. The world is living in the Age of Information. Computers have assisted countries into transforming themselves from the industrial revolution into the information age by merging concepts through various management information system applications.

1.2 Statement of the Problem

Most tertiary institutions continue to face serious challenges in project implementation due to the lack of interdisciplinary knowledge required for an integrated approach to the complex information activities involved in every aspect of work and doing business. For instance the key personnel need an integrated system that should touch on mobile technology so that they can be connected to the system within and outside the organization premises. This will allow them to receive and be able to send email and attend to urgent business requirement at any place.

The cost of MIS Project implementation is very high therefore firms and institutions are investing a lot of funds in these MIS projects; these projects need to be well implemented because the failure rates are so high. This can be brought about by poor supervision of the project resources ranging from time resources, material resources, cash and labour.

Implementation of MIS project that does not address the real needs and concerns of the people. Some project does not address the needs of the people who are expected to benefit from those projects but instead they may address the requirement of the consultants firms that are contracted to do them. This is a major problem facing most of the academic institutions and organization. Most of MIS project are prone to high failure rate. This is because of poor project planning and full support of the management. Due to this the organization incur a lot of loss for the investment they had committed to the project

While a number of studies have been carried out about MIS implementation in Mombasa, none of them has addresses issues on MIS implementation in tertiary level academic institutions.

Magutu, Lelei and Nanjira (2010) in their article “benefits and challenges of EDI Implementation and application of Kilindini waterfront project in Mombasa Kenya” they argued of EDI which is MIS tool that boost business operations by enabling faster and accurate business operations. Their study didn’t mention anything to do with MIS implementation in tertiary level academic institutions.

Therefore this study addressed those key issues involved in MIS implementation in tertiary level institutions in Mombasa touching on inadequate funds for MIS implementation, Top level management involvement in the implementation, need for qualified MIS personnel and the

technology involved for successful MIS project implementation in tertiary level institutions in Mombasa.

1.3 Purpose of Study

The purpose of this study was to determine the factors influencing the implementation of management information system projects in tertiary level institutions in Mombasa.

1.4 Objectives of the study

This study has four objectives:-

- i. To establish the extent to which Top level management support influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa county
- ii. To determine the extent to which availability of project funds influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa county
- iii. To explore the influence of technology on the implementation of management information system projects in tertiary level academic institutions in Mombasa county
- iv. To examine the influence of available qualified personnel on the implementation of management information system projects in tertiary level academic institutions in Mombasa county

1.4.1. Research Hypothesis

The study was based on the following null hypothesis:-

- i. H_0 There is no significant relationship between Top management support and Implementation of management information system in tertiary level academic institutions
- ii. H_1 There is a significant relationship between Top management support and Implementation of management information system in tertiary level academic institutions
- iii. H_0 There is no significant relationship between availability of project funds and Implementation of management information system in tertiary level academic institutions

- iv. H_1 There is a significant relationship between availability of project funds and Implementation of management information system in tertiary level academic institutions
- v. H_0 There is no significant relationship between technological influence and Implementation of management information system in tertiary level academic institutions
- vi. H_1 There is a significant relationship between technological influence and Implementation of management information system in tertiary level academic institutions

1.5 Research questions

The study is aimed at addressing the following questions.

- i. To what extent does top level management support influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa county?
- ii. What extent does availability of project funds influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa County?
- iii. How does technology influence implementation of management information system projects in tertiary level academic institutions in Mombasa county?
- iv. To what extent does availability of qualified personnel influence implementation of management information system projects in tertiary level academic institutions in Mombasa county?

1.6 Basic Assumptions of the Study

The assumptions of this study are:

- i. Respondents were willing to provide accurate information and will be looked in the study.
- ii. The sample was representing the entire population and that the data collection instruments will exhibit validity and reliability.

1.7 Significance of Study

The findings and recommendation of the study if implemented / adopted were of major benefits to various stakeholders in the following ways:

This study acts as useful reference point to scholars, academician and researchers for better understanding and further research on how MIS is contributing to organization success.

The study enables other institutions and companies that are not yet using MIS in their operations to benchmark themselves with those which are using the MIS and therefore appreciate the use of MIS.

1.8 Limitations of the Study

The major limitation of the study is that the respondents were uncomfortable in giving out a lot of information about their organization and how they carry out their operations in the university for fear of their job safety and the fear of the unknown. In order to overcome this, the researcher made sure that he/she informs the respondents that he/she is carrying out a study and the reason for doing the study so that the respondents can be aware and be prepared to give information.

The other limitation was that the respondent could give biased information and this false information might affect the whole study. The researcher had to be friendly to the respondents so that the respondents could be confident in him/her when disclosing their information.

There may be financial constrain for example; there was a number of travelling to go and collect data, telephone calls expenses, printing of questionnaires which some of them are not returned and others spoiled. The researcher had to make sure he/she had adequate finance necessary for carrying out the research fully to avoid short coming in the process of writing the proposal.

1.9 Delimitation of Study

The study was confined fully to the tertiary institutions in Mombasa municipality. The study was done to determine the factors that are influencing the implementation of MIS projects in the tertiary level institutions. The study focused on the MIS that is in place for the university and how it improved the operations and competitive advantages.

1.10 Definitions of Significant Terms

Management Information Systems: is a general term for the computer systems in an enterprise that provide information about its business operations. It's also used to refer to the people who manage these systems. Typically, in a large corporation, "MIS" or the "MIS department" refers to a central or centrally-coordinated system of computer expertise and management, often including mainframe systems but also including by extension the corporation's entire network of computer resources.

A project generally involve large, expensive, unique, or high risk undertakings which have to be completed by a certain date, for a certain amount of money, within some expected level of performance.

At a minimum, all projects need to have well defined objectives and sufficient resources to carry out all the required tasks.

Implementation: Implementation is defined as execution of plan or policy under study implementation stands for putting the MIS in operations.

Efficiency: Means the comparison of what is actually produced or performed with what can be achieved with the same consumption of resources. In this study it has been used to compare the actives with the expected objectives of the reform, for instance the collection efficiency.

An integrated management system: Is a management system that integrates all of an organization's systems and processes in to one complete framework, enabling an organization to work as a single unit with unified objectives

Database Management System 'DBMS': Is a database program. Technically speaking, it is a software system that uses a standard method of cataloging, retrieving, and running queries on data. The DBMS manages incoming data, organizes it, and provides ways for the data to be modified or extracted by users or other programs

ARPANet (for the Advanced Research Projects Agency Network).

Efficiency - Means the comparison of what is actually produced or performed with what can be achieved with the same consumption of resources. In this study it has been used to compare the activities with the expected objectives of the MIS, for instance the database efficiency.

Infrastructure – This is the basic physical structure needed for operation in the institutions and can be the facilities required for the economy to function. In this study the infrastructure range from hardware to software

Installation-refers to the physical placement of a system into an organization, while implementation is defined as a series of activities throughout the development of a MIS.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this section it explains how top level management support, availability of project fund, technical aspect and availability of qualified personnel influence implementation of MIS projects in tertiary level academic institutions in Mombasa Kenya.

2.2 Project Implementation

Kuruppuarachchi, Mandal, Smith, (2002) in their article “IT project implementation strategies for effective changes” argued that the studies on project implementation are not so noticeable in IT literature. However, indications on approaches or methods to implementation are available and those methods are discussed here.

Computer based IT projects are usually developed over the phases such as initiation, planning, design, implementation and termination. Two or more phases are sometimes merged to benefit the project. For example, in developing a computer system it is often beneficial to merge design and implementation phases in a series of iterations (Bailey, 1998) as the final product evolves.

This is referred to as “iterative evolutionary method” for developing computer systems. The iterative evolutionary method enables the system developers and their customers to communicate effectively with each other to evolve the system towards some defined objective. This method is useful from IT projects’ implementation point of view and due to the following characteristics: It is difficult to visualize from project specification or design how the IT system will work or will impact on the organization.

It may be necessary to change the way people do things, or even their views of what they really need, with the introduction of IT systems.

It is more likely that IT projects fail because of poor communications between technical experts and customers rather than the results of technical problems.

For successful implementation of projects three basic requirements should be met: a clear business objective, understanding of the nature of change and understanding of the project risk. Bailey (1998) studied in depth the type of change characteristics (tangible, conceptual and

personal) that could be expected once a project has been implemented. Tangible characteristics are associated with the production of some physical thing that has a practical purpose. Conceptual characteristics are associated with the production of an object or effect that creates an emotional response or intellectual idea. Whereas, personal characteristics are associated with the change in people's attitudes, the way in which they behave or the things they do.

Bailey (1998) also attempted to link planning approaches to change characteristics. He observed three approaches to planning for project management and they are linear, exploratory and personal. Linear planning is associated with the planning and management of a project through the identification of a detailed set of related tasks and deliverables. Exploratory planning is associated with the use of an iterative approach to evolve a product toward a defined end goal. Personal planning is associated with the setting of targets and time scales for managing organizational and personal change.

It is necessary to characterize a project according to the change characteristics listed above. Linear, exploratory and personal planning styles are appropriate respectively for tangible changes, conceptual changes, and personal changes. Tangible parts of a project will contain detailed task plans while conceptual parts will use iterative development in small increments. Personal plans will be "outline in nature" with a strong emphasis on personal communication.

Cleland (1991), Skelton and Thamhain (1993) explained the basis of concurrent engineering approaches, simultaneous involvement of several functions with joint responsibilities for the development, as a time-based management innovation directed for shortening the product or service delivery time. Prasaei and Sullivan (1993) stated two basic approaches for implementing concurrent engineering, team-based and computer-based approaches. Team-based approach, the application of concurrent engineering to product design teams, improves the development of products and processes as a result of team approach and also facilitates technology transfer because relevant parties are involved in the development process. The team-based approach has been enhanced by the computer-based approach. Application of computers enables design justification or optimization over a product life cycle. However, it is necessary to acquire, represent, integrate and coordinate the requisite concurrent engineering knowledge and to use computer aided designs.

Basic steps in concurrent design processes are quite similar (Cleland, 1991) even in different industries. These steps usually progress through four stages in the life cycle – concept development, engineering prototypes, pilot runs and production units. These stages as well as team-based and computer-based approaches are quite visible in IT projects.

Many researchers examined project implementation success factors Slevin and Pinto, (1986); Tan, 1996; Jiang et al., 1996; Scott, 1996). Popular project management texts also deal with project management success factors extensively. The list of success factors presented by Slevin and Pinto (1986) is comprehensive: even the Project Management Institute's Project Management Handbook (Pinto, 1998) presents the same critical success factors. The factors are:
Project mission: initial clarity of goals and general direction.

Top management support: willingness of top management to provide the necessary resources and authority/power for project success.

Project schedule/plan: a detailed specification of the individual action steps required for project implementation.

Client consultation: communication, consultation, and active listening to all impacted parties.

Personnel: recruitment, selection and training of the necessary personnel for the project team.

Technical tasks: availability of the required technology and technical steps to accomplish the specific technical action steps.

Client acceptance: the act of selling the final project to its ultimate intended users.

Monitoring and feedback: timely provision of comprehensive control information at each stage in the implementation process.

Communication: the provision of an appropriate network and necessary data to all key actors in the project implementation.

Trouble shooting: ability to handle unexpected crises and deviations from plans.

Tan (1996) has examined a set of success factors, which are similar to the above. Her list includes factors such as technical characteristics, user involvement, communications, management support, project team characteristics, difference between technology provider and receiver, incentives, infrastructure support and obstacles, to identify their effects on external technology transfer projects. Jiang et al. (1996) reported that there are great similarities in the ranking of the system implementation success factors offered by Slevin and Pinto (1986) and information system professionals.

Scott (1996) examined the role of project managers in the IT industry and stated that IT projects need the strategic alignment of business and technology in organizations to take full advantage of the power of technology. The business objectives of a project provide the starting point for defining the scope of the project. Scott (1996) emphasized that project management practices and methodologies need the flexibility to meet changing technology and business demand. Martinez (1994) stated that the initial two stages of a project are critical for large-scale project success. The two stages are “project scope definition and planning” and “culture and value assessment”. These two stages should address the essential functions critical to the project success, strategic decision making, business vision, executive support, communications, operational expertise, competent team members, quality assurance, project administration, system integration, change management, project control, work environment, user involvement, knowledge transfer etc. It is necessary to define the scope of the project as completely as possible so that all team members understand and agree to what is being undertaken.

2.3 Top Management Support

Pinto and Slevin (1987) in their journal “Critical Success Factors in Effective Project Implementation” argued that the project manager would be well served by more information about those ' specific factors critical to project success. The project manager requires the necessary tools to help him or her focus attention on important areas and set differential priorities across different project elements. If it can be demonstrated that a set of factors under the project manager's control can have a significant impact on project implementation success, the project manager will be better able to effectively deal with the many demands created by his job,

channeling his energy more efficiently in attempting to successfully implement the project under development

As noted by Schultz and Slevin (1987), management support for projects, or indeed for any implementation, has long been considered of great importance in distinguishing between their ultimate success or failure. Beck (1987) sees project management as not only dependent on top management for authority, direction, and support, but as ultimately the conduit for implementing top management's plans, or goals, for the organization. Further, Manley (1989) shows that the degree of management support for a project will lead to significant variations in the clients' degree of ultimate acceptance or resistance to that project or product. For the purposes of our classification, the factor Top Management Support refers to both the nature and amount of support the project manager can expect from management both for himself as leader and for the project. Management's support of the project may involve aspects such as allocation of sufficient resources (financial, manpower, time, etc.) as well as the project manager's confidence in their support in the event of crises.

According to Hwang and Hongjiang (2007) in their journal "The Effect of Implementation Factors on Data Warehousing Success argued that top management support and user involvement/participation" measure the operational aspect of the project. Many researchers have stressed the importance of having a business driver for a data warehouse Baker & Baker, (1999) Sammon & Finnegan, (2000). Top management support is critical to all major IS initiatives and has been noted for its importance in data warehouse development as well Watson & Haley, (1997) Wixom & Watson, (2001). User involvement/participation is important to IS projects in general and data warehousing in particular. Hwang & Thorn, (1999).

According to Roman (2010) in his article 'Factors for ERP Implementation Success' argued that Alignment of and support from leadership was the third most-mentioned strength that institutions indicated would be helpful when implementing their ERP system. Leadership buy-in and ongoing support are critical components in any successful change effort.

Leaders should take responsibility for determining, clarifying, and communicating a consistent message of support for the initiative as well as reinforcing the need. In addition, especially with large-scale changes or projects like an ERP implementation, leadership must recognize the volume of work involved in implementing the change and the impact upon the various functions of the organization. Roman (2010).

According to Hussein, Abdulkarim and Selamat (2003) in the article “the impact of organization factors on information system success”, they argued that Top management support is conceptualized as the involvement and participation of the executive or top-level management of the organization in IT/IS activities Jarvenpaa & Ives, (1991).

Based on the important role of the top-level managers to organizations, it is not surprising that top management support has been one of the most widely discussed organizational factors in several IT/IS success studies. For example, top management support has been investigated in several studies linking its influence on IT/IS use Jarvenpaa & Ives, (1991).

In another study, King & Teo, (1996) found top management support facilitated the successful deployment of strategic IS applications, while lack of top management support was found to inhibit the strategic use of IT/IS. Grover (1993) found that support factors have the most predictive ability in CIOS adoption. Both studies tend to strengthen Jarvenpaa & Ives (1991), who studied executive support in relation to progressive use of IT.

Igbaria et. al,(1996) found the importance of organizational support on most of the factors investigated perceived usefulness, perceived complexity, social pressure, perceived fun and system usage. Accordingly, Igbaria et. al, (1997) tested a structural equation model on personal computing factors in small firms and found management support has positive direct effects on perceived usefulness and perceived ease of use. Ang et. al (2001) examined 47 Malaysian public sector agencies on IT usage to support total quality management (TQM). Among the organizational factors explored, the authors found top management support for IT applications as the highest predictor of IT usage. Hence, the above studies indicated substantial belief that top management support has significant influence on IS success. Thus, we develop hypothesis as follows. Top management support is positively associated with the IS success dimensions.

2.4. Project funding

According to Hwang and Hongjiang (2007) in their journal "The Effect of Implementation Factors on Data Warehousing Success" adequate funding, measure the economic aspect of the project. The economic factor, also known as cost-benefit measures the bottom line. This type of analysis is usually performed for transaction processing system projects that can easily quantify benefits. Data warehouses are mostly created for decision support or strategic applications that do not have apparent measurable benefits. Consequently, the economic factor was not a priority in early projects. However, as the technology matures and experience is gained, more and more companies are conducting some type of cost-benefit analysis (Lewis, 2001; Sinn, 2003; Watson et al., 2004, Whiting, 1999).

According to Doll (1985) in his journal "Top Management Involvement in Successful MIS Development" he argued that Funding commitments are a key mechanism for top management. Effective MIS development efforts require multi-year financial commitments to acquire hardware, software, and professional staff. The more successful firms were more likely to have long-term commitments from top management for the stable funding of MIS development activities.

Top management of the successful firms made these commitments in a much different way than their counterparts. In the successful firms, long-term funding commitments from top management were contingent upon written overall development plans and mutually agreed upon criteria for application selection. Among the fourteen successful firms with long-term funding commitments from top management, all had mutual agreement on development priorities and 71.4% had written overall development plans. In the firms with unsuccessful overall MIS development, top management tended to make long-term funding commitments without having either a written plan or mutually agreed upon development priorities. It appears that top management may have abdicated their responsibilities in some of the firms with unsuccessful development efforts. These results suggest that MIS development efforts are more likely to be successful when top management insists on written overall plans and mutually agreed upon development priorities before making long-term funding commitments. According to musau

(2011) the deputy director ITCS Mombasa polytechnic university college said that a great percentage of ITCS's funds, resources, and personnel go into maintaining and developing the applications and services and the infrastructure on which they run. ITCS has also responsibility of supporting the end users of this technology, the faculty, students and staff of the University. This support is made up of facilities such as a training centre, and on call personnel

2.5. Technical Aspect

According to Pinto and Slevin (1987) it is important that the implementation be well managed by people who understand the project. In addition, there must exist adequate technology to support the project. Technical Tasks refers to the necessity of not only having the necessary personnel for the implementation team, but ensuring that they possess the necessary technical skills and have adequate technology to perform their tasks. Alter (2002), writing on implementation risk analysis, identifies two of the eight risk factors as being caused by technical incompatibility: the user's unfamiliarity with the systems or technology, and cost ineffectiveness.

According to Peansupap and walker (2005) In the journal "factor enabling information communication Technology Diffusion and actual implementation construction organizations argued that Technology characteristics influence MIS implementation processes and are an important element influencing MIS adoption. According to Rogers (1983; 1995), innovation attributes supporting diffusion are: relative advantage, compatibility, trial and experiment, observability, and an innovation being perceived to be superior to the item or process being replaced. Tornatzky and Klein (1982) found that innovation characteristics have a relationship with innovation adoption implementation. By using a meta-analysis of articles, their results indicated that three innovation characteristics -compatibility, relative advantage, and complexity - had been frequently found to be factors influencing technology adoption and implementation. Relative advantage attributes also have an influence on users perception of technology Igarria *et al.* (1996) and Lederer *et al.* (2000).

In addition, Ramamurthy (1994) found that compatibility has a positive influence on organizational MIS adoption and implementation. For example, MIS that was designed to replicate manual or paperwork is easy for users to accept because they feel familiar with the

work patterns. Therefore, the higher the compatibility with users' existing work, the more likely it is that the users become familiar with a system. However, ICT use is not limited to duplicating manual and paper work systems but involves work process re-designing or re-engineering. Thus, to improve organizational productivity, most current IT/ICT systems require complex change management projects. Other technology attributes are speed, reliability and accessibility. Speed makes users feel that they are gaining a real benefit and improving their productivity by using MIS technology compared with previously used systems. Thompson, Higgins & Howell (1991) argue, resource allocation is a key factor in IT/ICT use. If users feel that applications lack speed and reliability or if users are not provided with necessary access to use an ICT application (due to resource limitations such as money for high speed links, current technology or compatible equipment/software) then they may not be willing to use them.

According to Hwang and Hongjiang (2007) in their journal "The Effect of Implementation Factors on Data Warehousing Success" "proper development technology," "adequate IS staff and consultants," and "project management/teamwork" measures the availability of technical resources and expertise for the project. Many companies choose to utilize consultants or third party vendors for their data warehousing projects due to technical considerations. One of the success factors cited by Cooper et al. (2000) in the implementation of a data warehouse at a major bank was the replacement of the in-house development team with outside consultants. Many companies have also brought in outside consultants to bring a stalled project back on track Connor, (2003).

Almost all authors emphasize the technical aspects of data warehousing projects, including cleansed data, meta data, standard methodology, and project management as very factors in project implementation specifically for large technology projects, institutional stakeholders indicated that having internal technical capabilities, strong technical support, and institutional commitment to technology are important for project success. Having these capabilities can facilitate the implementation process and the effective transfer of knowledge and necessary skills. This factor is also extremely important for other types of projects or change initiatives. Experience and skills in the applicable areas are needed to implement a project or initiative with an increased likelihood of success. If these skills are not available, hiring a third-party to provide

those skills can be advantageous. Roman (2010)

In the last five years or so, the application of interactive computer networks in education has been extended to teacher education Bull et al, (1989) and Taylor (1990).

2.5.1 Networking Technology

Some of the networks link currently enrolled students with supervisors, co-operating teachers and university faculties of education staff, and some link university staff with teachers in schools. One of the first teacher support computer networks was the Beginning Teacher Computer Network at Harvard University which provides induction support for novice teachers in their first year of teaching in disparate geographical locations. Another network is TENET (Texas Educational Network) which enables teachers to link up with colleagues in other parts of Texas to collaborate on teaching materials and share teaching ideas. Yet another network is one set up by South Bank Polytechnic in London and City College in New York for initial and in-service teacher education. It is used as a supplement to courses held in both colleges Meadows, (1992).

The experience of, and research on, teacher education networks have unanimously pointed out that by making it possible for teachers to share tears and joys in teaching with fellow teachers in other schools and with university staff, irrespective of time and geographical locations, these networks enhance collegiality and professional growth in the teaching community (see, for example, Merseth, (1991 & 1992). Some networks are more effective in providing moral support while others are more effective in providing support in formal teaching processes (see, for example, Merseth 1992; Mangan 1992; Odell 1986). This paper reports the findings of research conducted on a university-based teacher education network called TeleNex (Teachers of English Language Education Nexus) set up at the University of Hong Kong. It points out that for a network of this nature to be effective, factors such as the computer proficiency of the users, their background and their psychological reactions to using the computer as a means of communication need to be taken into consideration in the implementation process. It starts with a brief description of the objectives and design of TeleNex, followed by a detailed discussion of the social factors that are at work in its implementation. The discussion will be supported by data

which consist of questionnaires, interviews of active and non-active participants, formal and informal meetings with participants, and messages sent in by participants in the messaging system.

A recent survey (Wireless Networking in Higher Education, 2002) of 392 EDUCAUSE member institutions found that wireless Internet in higher education in the U.S. and Canada “has moved from an interesting curiosity to an appealing technology alternative for potential users”

In the Campus Computing Survey Project Green, (2002), more than 630 chief information or chief technology officers at two-year and four-year public and private colleges and universities participated. The survey data revealed that wireless networks were an increasingly important issue across all sectors of higher education. About two-thirds (67.9 %) of the institutions participating in the 2002 survey reported that they had functioning wireless LANs, compared to half (50.6 %) in 2001, and 29.6 % in 2000.

Wireless technology is quickly gaining a foothold on many campuses as a means to achieve mobility and “anywhere, anytime” access. Boerner (2002) listed some characteristics of wireless networking on campus: mobility, installation speed and simplicity, installation flexibility, reduced cost of ownership, and scalability. Wireless Internet is affecting not just the classroom environment and technology access, but also the actual activities of learning and teaching.

According to the EDUCAUSE study, wireless Internet “represents a user-centered shift, providing students and faculty with greater access than ever before” (Wireless Networking in Higher Education, 2002, other campus administrators, however, say that although students love wireless Internet, the teaching has not changed. Not all instructors value the student-centered approach to learning.

Bhave (2002), for example, predicted that wireless Internet would be a challenge for teachers’ authority and raise issues of control. He said that when wireless technologies permeate classrooms in schools and colleges:

They will raise issues of stewardship and control for the teacher. How can a teacher assert the necessary and traditional control over classroom proceedings to remain effective? How can a teacher retain focus and discipline in the classroom when students multitask with ease?

Although wireless access to the campus network is becoming commonplace, institutions are still at the beginning stage of adoption in education. "There is plenty of potential in this technology for teaching and administration—everything from classroom management to providing network service for temporary locations" Grush, (2002). The potential impact of this new technology on learning and teaching is significant enough to gain our attention as researcher

Data are usually generated at the field level through transaction-processing systems, but once the data are captured, any echelon along the organizational hierarchy may use them, provided that information requirements have been well defined, appropriate programmes have been implemented, and a means has been arranged for the sharing of the data. This would imply that the same data can be used by different sets of programmes; hence we distinguish between the database (a set of data) and the applications (a set of programmes). In a decision support system (DSS), this set of programmes is the model base Keen & Morton, (1978).

The term database may refer to any collection of data that might serve an organizational unit. A database on a given subject is a collection of data on that subject that observes three criteria: comprehensiveness (completeness), non redundancy, and appropriate structure. Comprehensiveness means that all the data about the subject are actually present in the database. Non redundancy means that each individual piece of data exists only once in the database. Appropriate structure means that the data are stored in such a way as to minimize the cost of expected processing and storage. This is according to Awad & Gotterer, (1992). The idea of a large corporate database that can be flexibly shared by several applications or model bases has been realized by means of software packages specially devised to perform such tasks.

2.5.2 Internet Technology

The application of the Internet in the business world has become a major trend in practice and generated a hot stream of research in the recent literature. The Internet, as a collection of interconnected computer networks, provides free exchanging of information. Over 400 millions of computers on more than 400,000 networks worldwide today are communicating with each other Napier, Judd, Rivers, and Wagner, (2001). As such, the Internet has been becoming a powerful channel for business marketing and communication Palmer, (1999), and for new business opportunities as it is often called as "e-business" or "e-commerce" today Schneider & Perry, (2001). This new virtual marketplace allows small companies competing with business giants by just having a better web presentation of their products/services. Under the same wave, online customers can enjoy a wider choice of products or services, more competitive prices, and being able to buy their favorite items/services from the sellers located thousands miles away. It provides communication between consumers and companies and through electronic data interchange (EDI), buyers and sellers can exchange standard business transactions such as invoices or purchase orders with remarkably easy.

E-commerce has been defined as "the buying and selling of products and services by businesses and consumers over the Internet" (WWW.Commerce.net). The Internet and e-commerce give consumers an opportunity - through the easy on-line information gathering and convenient online shopping to be better prepared to purchase the right product (or service) at the right time Schulze, (1999). New entrepreneurs and traditional small to medium sized businesses are the pioneers exploring on the forefront of e-commerce. According to a published survey, more than 90% of new entrepreneurs and starting businesses are using the Internet - to either enhance their existing business operations or to explore new business opportunities McKendric, (1999).

Numerous studies have been reported about the Internet applications in business including the application in the service operations, such as: the health care industry (e.g., webMD), banks and financial institutions (e.g., e-banking), and the hospitality & tourism industry (e.g., e-booking of hotel/motel rooms, airline tickets, etc.). Those Internet applications have attracted a great amount of attention from industrial practitioners and academic researchers, due to the fact that the information exchanging and sharing is a key part of those business operations, where the use of

Internet will provide an advantage in the related information flow. Given the competition from powerful traditional businesses, a successful e-business can only occur if this business can satisfy its consumers' needs better than those traditional business approaches and provide consumers with at least one of the following advantages: (a) lower price, (b) wider selection, (c) better choices, (d) superior services, and (e) more convenient. Vassos, (1996).

One key issue for the e-business application in service operations is about the possibility of online delivery of the services customers ordered - as not all types of services (or products) can be delivered online, such as haircut (or hot cooked meals). Specifically, the services requiring customer participation (or the items demanding immediate delivery) are difficult (if not impossible) to be purchased and delivered online. In this regard, the online booking of hotel/motel rooms, airline tickets, advanced car rental, or a total travel package has become one of a few good example services - which can be inquired, checked, and ordered easily while conveniently communicated and delivered online with the Internet.

In fact, the use of internet information delivery and on-line document printing has provided the backbone for the current stream of e-commerce – as it can overcome many traditional business obstacles and operational barriers by delivering access to global market and providing new leverage with old large powerful suppliers Westerlund, (2000). In the current performance criteria for service operations, fast service delivery and prompt and reliable service have been identified as two key competitive priorities for the future Web-based service delivery operations Verma and Young,(1997), while time-based competition through better customer service has been re-emerging as a major tool of delivering high-quality services to customers through a total operation cycle – including planning, design, processing, marketing, and distribution Sue Abdinnour-Helm, (2000).

2.6. Availability of Qualified Personnel

According to Pinto and Slevin (1987) Personnel issues, including recruitment, selection, and training. An important, but often overlooked, aspect of the implementation process concerns the nature of the personnel involved. In many situations, personnel for the project team are chosen with less-than-full regard for the skills necessary to actively contribute to implementation success. Some current writers on implementations are including the personnel variable in the equation for project team performance and project success. Hammond (1999) has developed a contingency model of the implementation process which includes "people" as a situational variable whose knowledge, skills, goals, and personalities must be considered in assessing the environment of the organization. Only after such a diagnosis takes place can the project management team begin to set objectives and design the implementation approach. For the model, Personnel, as a factor, is concerned with developing a project team with the requisite skills to perform their function. Further, it is important to determine whether project management has built sufficient commitment toward project success on the part of team members.

The challenges surrounding user involvement in DSS project implementation are problematic and complex. It is a process that involves all the individuals who make-up the organization, from senior level executives to clerical staff. The implementation literature provides consistent evidence of user involvement in DSS project implementation. A large body of DSS project implementation studies had investigated the relationship between user-related variables and project implementation success (e.g., Alavi and Joachimsthaler, 1992). The relationships between these factors and DSS project implementation are believed to be influenced by a number of contextual variables.

Alavi and Joachimsthaler (1992) further argued that user related variables include user experience, involvement, and training. User experience refers to prior exposure to DSS and to the user's work history (e.g., number of years). User involvement, according to Swanson (1974) refers to the "entanglement" of the user in DSS related activities. Thus, a user and a DSS, two purposeful systems are "involved" to the extent that activities of each facilitate the attainment of the ends of the other. In this context, involvement refers to user participation in DSS project

implementation. Training, in the context of DSS implementation, refers to the provision of hardware and software skills sufficient to enable effective interaction with the system under consideration. There are many factors contributing to DSS project implementation but unfortunately, the results of these prior studies were not just mixed and inconclusive. They have also been conducted in fields other than health. Given the dramatically different nature of DSS project implementation, these results, obtained from previous studies are likely to provide at best, a partial picture of the key factors influencing DSS project implementation in practice.

In reviewing the factors influencing user involvement from the vast range of DSS project implementation literature, it can be concluded that there are immense amounts of factors influencing both successful and failed DSS implementation projects. Given the array of these factors, it is significant to re-encapsulate a thorough understanding of the user who would contribute to the better handling of the project implementation, and thus increasing the chances of its success. The framework was proposed to encapsulate the factors influencing DSS project implementation based upon the perspective of the end users. The challenge with such guidelines is that it does not fully relate to the organization's particular situation, nor does it itemize the possible problems that may arise during the process.

According to Roman (2010) in his article 'Factors for ERP Implementation Success' argued that having knowledgeable, experienced, and dedicated staff is the second most-mentioned institutional strength to facilitate a successful ERP system implementation. These staff members are the people who are dedicated to the institution and care about its mission and service to students. They are also the ones who will be critically involved in the project and are most often affected directly by the institutional change.

Whatever type of change you may be initiating, a key strategy to take advantage of this strength involves recognizing these people and engaging them early on and continuously throughout the project. These staff members can help you position the need for change, lead and manage your project team tasks, and provide great vehicles for two-way communication.

According to Ginzberg (1978) in his journal "steps towards effective implementation of MS and MIS" argued that The management scientist is only one part of the implementation team.

Success requires the active effort of all parties, and we turn now to what the user can do. First, like the designer, the user must recognize that different projects imply different degrees of change, that the demands placed on him and his organization will vary from project to project. He must learn to understand both these differences and his own capacity for change. A user who is unwilling to consider new modes of problem solving is wasting his time if he asks for a sophisticated, model-based, on-line decision support system. He must take the time to think through both the demands for change (implied by the system) and his organization's capacity to change. If there is a mismatch between demands and capacity, the project should be abandoned, or at least carefully redefined. Another simple step the user can take is to carefully articulate his goals and objectives for the project. Trivial as this may seem, it is an important step. Only by clarifying his objectives can the user either guide the project towards those objectives or determine whether the project has a realistic chance of achieving such objectives.

A key aspect of these suggestions is that the user must realize he has a tremendous responsibility for the progress of an implementation effort. Hiring a management scientist in no way lessens this responsibility. The user must be willing to make the project a joint effort if he wants it to succeed. He must recognize that his time and commitment are required. If he is not willing to give this time and commitment, the project should be dropped. Finally, the user has a responsibility to manage his relationship with the management scientist. Three interrelated prescriptions seem warranted. First, the user must demand that the designer have the skills necessary for the type of project being considered. This implies that the user must understand the different demands of different project types, and must have some basis for judging the designer's capabilities. Next, the user must demand that the designer behave as a change agent; that he not view his role as one of simply injecting technical expertise, but rather one of working with the client organization to help it improve its functioning. Finally, in order to assure that these first two demands are being met, the user should periodically test the match of his perceptions with those of the management scientist. This should force the project to stay "on course", and assure that the finished system is what the user expected.

2.7. Summary of the Literature

The effective implementation of Management Science (MS) models and Management Information Systems (MIS) requires commitment from the user as well as the designer. The Management Scientist must address a problem which is real and important to the user and then stay involved until the users understand and accept the system in their environment. Conversely, the user is responsible for delineating the project goals and objectives as limited by his organization's capacity to accept changes or new ideas and procedures and evaluating the progress made by the management scientist. Improper or ineffective implementation will result if only the user or only the designer is involved. The most effective implementation will result from a total commitment of both the user and designer.

2.8 Conceptual Framework

The conceptual framework provides diagrammatized relationship between the independent variables and the dependent variables of the study. Below is the conceptual framework of the study of factors influencing the successful implementation of MIS project in tertiary level academic institutions

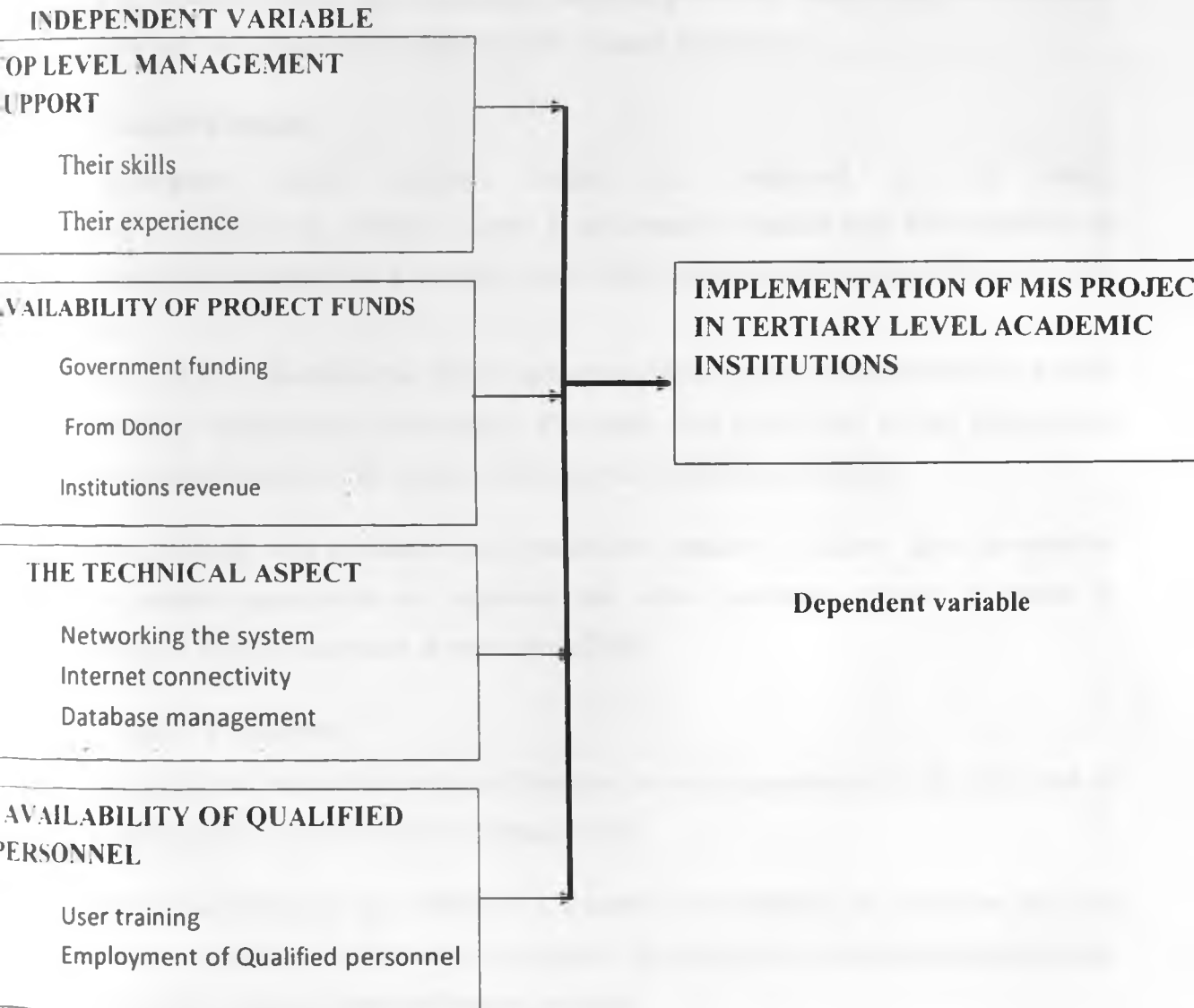


Figure1 CONCEPTUAL FRAMEWORK ON FACTORS INFLUENCING MIS PROJECT IMPLEMENTATION IN TERTIARY LEVEL INSTITUTION IN MOMBASA

SOURCE (AUTHOR, 2012)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methods that were applied in carrying out the research study. It presents the research design, target population sampling procedure, sample size, data collection instruments and data analysis procedures that will be used in the study.

3.2 Research Design

The descriptive survey research design was employed in the study. According to Cooper et al, (2006) a survey is an attempt to collect data from members of population in order to determine the current status of that population with respect to one or more variables.

The study was done to determine the factors influencing MIS Project implementation in tertiary level academic institutions in Mombasa. The study was carried out at the management information system centers of all tertiary level academic institutions in Mombasa.

This study utilized both qualitative and quantitative research to collect data. Quantitative research produces quantifiable and numerical data while qualitative research is limited to produce data in form of statements or words (Kool, 2004)

3.3 Target Population

The population is all units of the study and therefore the target population for this study was all tertiary level academic institutions in Mombasa County.

According to the Kenyaplex.com (2008-2012), a website for Education and resources, there are 109 tertiary level academic institutions in Mombasa. This comprises of universities, polytechnics and technical trainings and other professional colleges.

Therefore since this study was a survey and the targeted population was 109 institutions the researcher collected data only from the head of Management information system in each institution. This was because the head of management information system had a great wealth of

knowledge of information about the implementation of the management information system in their respective institutions. Also the choice of administering questionnaires to only heads of management information system was that the researcher only wanted relevant information about the situation of on management information system project implementation but not individual opinions.

3.4 Data Collection methods and instruments

The study applied both quantitative techniques to collect data using quantitative methods, semi structure questionnaires and interview schedules was applied for respondents in top level management like directors and managers and questionnaires were used for respondents in other lower levels

Both primary and secondary data were used. Kool (2004) argued that the primary data is the data collected at the first time mainly for the purpose of study and secondary data which is data obtained from relevant documented. Information from previous researchers were collected, interview schedule were designed to guide the interview process.

Questionnaires that were used were semi – structured so that the respondents can be guaranteed their freedom to answer questions with ease. Enumeration was done before distribution of questionnaires this was used to map the potential respondents. The respondents were given ten days to fill the questionnaire after which the researcher visited them and collected the filled questionnaires.

Interviews were conducted and the researcher first booked an appointment with the respondents. The researcher himself administered the interviews. The respondents were expected to give their ideas on the past experience and current experience on the research study.

Observation as one of the reliable form of data collection technique was used. The researcher visited the all tertiary academic institutions to see for himself the implementation process of the MIS and how it is being used in the day to day operations.

The researcher was assisted by the expert from in-house and outsourced MIS implementation team. Observation checklist shall be prepared before visitation.

3.5 Data Collection procedures

The researcher visited all the 109 tertiary level academic institutions in Mombasa. The researcher explained to the officers of all these institutions the purpose of carrying out this study and what it's required in order to carry out the study. The researcher was required to have an introductory letter from the relevant university and in this case the University of Nairobi. This is the letter of authorization for the researcher to conduct the study and it was indicated clearly that the research is for academic purpose. The researcher then administered the questionnaires to the respondents. Questionnaires were collected after they were filled.

3.6.1 Reliability of data collection instruments

Reliability is a measure of the degree to which a research instruments yields consisted results or data after repeated trials. A pilot test was carried out on twenty (20) respondents from the 109 target institutions. This was to ensure the reliability of the research instruments. This was done in order to establish whether the questionnaires and interviews schedule can measure what is intended to measure where they fully represent the content their appropriateness to the sample population and also checks the comprehensives of intended information. This also allowed for pre – testing for possible corrections and adjustments before the actual respondents are engaged

3.6.2 Validity of research Instruments

Mugenda and Mugenda (2003). Argued that Validity is the accuracy and meaningfulness of inferences which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. In order to ensure validity of researcher instruments, a pilot study was conducted for the twenty (20) targeted respondents from the 109 institutions, the pilot sought to establish whether the instruments measured what they intended to measure. Then the feedback from the pilot was looked at for adjustments if there arise one.

3.7 Data analysis and presentation techniques

Various techniques and methods were used in data analysis and presentation. They include descriptive and qualitative techniques. In descriptive analysis it includes measures of control

tenderly for instance mean, mode and media statistical analysis frequency distribution. Apart from the use of descriptive statistics sets of data were described using techniques such as graphs, tables and pie charts. The use of SPSS system and ms – excel was used for analysis. Cross tabulations was used to examine frequencies of observations belonging to specific categories on more than one variable Graphs were well labeled on both the vertical and horizontal axes. The graph will be having a title.

3.8 Operational definitions of variables

The researcher showed the relationship among independent variables, dependent variable.

The table 3.1 below summarizes the key variables that will guide the study.

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Table 3.1 operational definitions of variables

RESEARCH OBJECTIVE	TYPE OF VARIABLE	INDICATOR	MEASURE	LEVEL OF SCALE	RESEARCH DESIGN	
To determine the factors influencing the implementation of management information system projects in tertiary level academic institutions in Mombasa	INDEPENDENT	TOP LEVEL MANAGEMENT SUPPORT	Their skills and experience.	Level of MIS acceptance by top managers.	Nominal	Survey
			Their corporation with other staff.	Number of team buildings ever done.	Ordinal	
			Staff development.	Existence of job description for all staff.	Nominal	
		AVAILABILITY OF PROJECT FUND	State of fund utilization.	Method of acquiring project fund	Nominal	survey
			Fund acquisition.	Extent of fund utilization.	Nominal	
			TECHNICAL ASPECT	Networking the system.	How Internet is developed.	
		Internet facility.		Use of website.	Nominal	
		Website facility.		How backup is done.	Nominal	
		State of software and hardware available.		State of networking.		
		Database management.		State of software/hardware		
		Information security				

		AVAILABILITY OF QUALIFIED PERSONNEL.	State of their qualification Employment procedure	Number of trainings done Type of training Number of people who attend the training	Nominal Nominal Nominal	survey
DEPENDENT		SUCCESSFUL IMPLEMENTATION OF MIS PROJECTS		Attainment of project need. A completed working system	Nominal	survey

CHAPTER FOUR

DATA ANALYSES, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the survey data presentation, analyses and interpretation of the findings based on the respondents. The findings are represented based on the objectives of the study as presented in section 1.4; these are presented in the form of tables and others graphs showing frequencies and percentages. The results are then discussed in relation to the existing literature on findings of the related studies

4.2 Profile of the Respondents- institutions.

The researcher targeted 109 institutions where only one questionnaire was given to each institution, out of 109 institutions, 29 institutions have not implemented management information system and had no idea to fill in the questionnaires. Another 10 institution denied that researcher an opportunity to administer the questionnaires. Therefore out of 109 questionnaires 39 were not filled only 70 were filled.

Therefore the response rate was $70 \div 109 \times 100 = 64\%$

Therefore these institutions were either public or private where majority of them were private making a frequency of 57 out 70 whereas the remaining 13 were public institutions. The findings revealed very few institutions in Mombasa have a service charter with only a response rate of 9 out of 70 whereas 61 institutions stated that they do not have a service charter.

The institutions were in four categories; universities, polytechnics, training institutions and professional institutions. Majority of these institutions were in the category of professional colleges followed by technical training institutions, then universities and polytechnic were the least in Mombasa. The study also sought to determine the institutions student population size and the findings revealed that majority of institution have students population ranging from 1-100 with a frequency of 19 out of 70, , this was followed by institutions that have student population ranging from 101-200 with a frequency of 18 out of 70. Other institutions had student population ranging from 301-400 with a frequency of 12 out of 70. Only 11 institutions had student population of over 500 and finally 10 institutions had student population 201-300.

Table 4.1. To determine if the institutions have a charter

	Frequency	Percentage
Yes	9	12.9
No	61	87.1
Total	70	100

The study sought to determine the number of institutions that have a service charter and from the finding only 9 responses were yes with a percent of 12.9% and 61 said No with a 87.1%. This shows that majority of these institutions have not attained the standard requirement of being awarded the service charter

Table 4.2. To determine whether public or private institutions

	Frequency	Percentage
Public	13	18.6
Private	57	81.4
Total	70	100

In the above table the researcher wanted to know how many institutions are public and how many were private. From the finding majority of institutions are private with the frequency of 57 and a 81.4%. The responses for public institutions were 13 with 18.6% response rate, therefore most of institutions are privately owned

Table 4.3. To determine the nature of business the institutions does

		Frequency	Valid Percent	Cumulative Percent
Valid	University	10	14.3	14.3
	Polytechnic	5	7.1	21.4
	Technical training	15	21.4	42.9
	Professional college	40	57.1	100.0
	Total	70	100.0	

From the analyses above majority of the institutions are in the category specified as professional college with a frequency of 40 out of 70, and these are the small colleges that have not well been established that are teaching professional courses like the CPAs. The analyses shows that out of 70 institutions studied 10 were universities, 15 technical training institutions and 5 polytechnics.

Table 4.4. To determine the size of institution i.e. number of employees

		Frequency	Valid Percent	Cumulative Percent
Valid	1-100	27	38.6	38.6
	101-200	22	31.4	70.0
	201-300	13	18.6	88.6
	over500	8	11.4	100.0
	Total	70	100.0	

The analysis shows that the institutions with the highest number of employees in Mombasa range from 1-100 with a frequency of 27 out of 70. This is followed by other institutions having employees number of 101-200 employees with a frequency of 22 out 70. 13 response rate were in the category of population ranging between 201-300 and finally the category of over 500 employees population had a response frequency of 8 out of 70

Table 4.5. To determine the size of institution i.e. number of students

		Frequency	Valid Percent	Cumulative Percent
Valid	1-100	19	27.1	27.1
	101-200	18	25.7	52.9
	201-300	10	14.3	67.1
	301-400	12	17.1	84.3
	over 500	11	15.7	100.0
	Total	70	100.0	

Table 4.5 above shows that majority of the institutions in Mombasa have student population ranging from 1-100 with a frequency of 19 out of 70, this was followed by institutions that have student population ranging from 101-200 with a frequency of 18 out of 70. Other institutions had student population ranging from 301-400 with a frequency of 12 out of 70. Only 11 institutions had student population of over 500 and finally 10 institutions had student population 201-300.

4.3. Extent to which Top level management support influence successful implementation of management information system projects the institutions

The study sought to find out the extent to which top level managers support the management information system project implementation whereby from the findings shows that majority of the response stated that the extent response by top managers were moderate. 20 of the response stated that the extent of top manager's support was to a very great extent and great extent respectively.

In the effort to find out why there was slow implementation of the system in the intuitions, the study found out that all the variables (top management resistance, inadequacy of funds, unavailability of qualified personnel and poor technology usage) great contributed to the slow implementations of management information system.

The study went ahead to find out what was to be done to boost the implementations of the management information system in the institutions whereby the response indicated that the variables were paramount the boosting the implementation of management information systems. The study found out that majority of the respondents stated that management effort towards implementation of management information system was highly satisfactory, a few others said management effort was partially satisfactory while very few response stated that the effort was satisfactory

The conclusion is that the finding indicates clearly that top managers supported the management information system implementations to their respective institutions. The findings revealed that the four variables (top management resistance, inadequacy of funds, unavailability of qualified personnel and poor technology usage) contributed to slow management information system implementation in the institutions.

From the findings it is also concluded that the entire variable as they are discussed in chapter two boost the implementation of management information system because they were all a requirement for successful implementation of management information system projects in the institutions

Table 4.6. The extent to which top level management support influence implementation of management information system in institutions

		Extent of MIS project implementation	influence of top management support on the implementation of MIS	extent the availability of fund influence implementation of MIS	the extent of management effort in implementation of MIS
Extent of MIS project implementation	Pearson Correlation	1	-.036	-.115	-.043
	Sig. (2-tailed)		.765	.343	.726

	N	70	70	70	70
influence of top management support on the implementation of MIS	Pearson Correlation	-.036	1	.007	.002
	Sig. (2-tailed)	.765		.956	.988
	N	70	70	70	70
extent the availability of fund influence implementation of MIS	Pearson Correlation	-.115	.007	1	.144
	Sig. (2-tailed)	.343	.956		.235
	N	70	70	70	70
the extent of management effort in implementation of MIS	Pearson Correlation	-.043	.002	.144	1
	Sig. (2-tailed)	.726	.988	.235	
	N	70	70	70	70

* Correlation is significant at the 0.05 level (2-tailed).

In determining the influence of top management support on implementation of management information system in the institutions, Pearson correlation from the table 4.6 above shows that there is a positive correlation of 0.007 between the availability of funds and the top management support on implementation of management information system. The result also shows that there is a strong positive correlation of 0.144 between the availability of funds and the efforts of managers on implementation of management information system, therefore the correlation is significant. The result from the table 4.6 also shows a strong negative correlation of -0.036 between the influence of top management support on the implementation of MIS and extent of MIS project implementation

4.4. Extent to which availability of project funds influence successful implementation of management information system projects

The study also sought to find out the extent to which availability of project funds influence successful implementation of management information system projects. The research findings were that project fund really contributed to the success of the project implementation, in this study the greatest number of respondents stated that funds influences project implementation to a very high extent, followed with the response from those who said it influence to high extent. Few respondents stated the influence of funds towards project implementation is to a moderate extent. Majority of the institutions said that they acquired project fund from their own revenue. Most of public institutions got some government grants for implementation of these projects. Private institution were also getting funds from donors and fund raising.

From the findings, the response shows that the extent of fund utilization was moderately and highly utilized.

The finding shows that majority of the institution experienced difficulties in raising the project funds. A scale of five was used were majority of the responses stated that the difficult of raising project fund was to a moderate extent, this was followed by respondents who stated that raising the project funds was to a great extent. Few said that the difficult of raising project funds was to a very great extent, while others few said it was to a low extent.

The conclusion to the findings from all the respondents is that adequate funds were a great requirement for project implementation

Most institutions funded their projects from their own revenue. Government and donors also assisted in raising funds for the project implementations. From the findings the researcher concluded those project funds were well utilized since all the stakeholder are in support of the project and they own it.

The study also shows that the institutions experience difficulties in raising the project fund. Majority of institution greatly had difficult in raising the fund with a few having less problems.

Table 4.7. The extent of the influence of funds on implementation of MIS project in the institution

		extent of adequacy of MIS project implementation funds in institutions	extent of utilization of MIS project funds by top management	extend of the difficulties experienced in raising the MIS project implementation funds
the extent of adequacy of MIS project implementation funds in institutions	Pearson Correlation	1	-.096	.202
	Sig. (2-tailed)		.428	.094
	N	70	70	70
extent of utilization of MIS project funds by top management	Pearson Correlation	-.096	1	-.008
	Sig. (2-tailed)	.428		.949
	N	70	70	70
extend of the difficulties experienced in raising the MIS project implementation funds	Pearson Correlation	.202	-.008	1
	Sig. (2-tailed)	.094	.949	
	N	70	70	70

In determining the influence of funds on implementation of MIS project in the institutions, Pearson correlation from the table above shows that there is a strong negative correlation -0.096 between the adequacy of MIS project implementation funds and the utilization of project funds by managers. The result also shows that there is a strong positive correlation of 0.202 between the adequacy of MIS project implementation funds and the difficult of raising project funds by the institutions. The result from the table also shows a negative correlation of -0.008 between the difficulties in raising the MIS project implementation funds and utilization of MIS project fund by managers.

Table 4.8. Determining the Mean and STD deviation on the influence of funds on implementation of MIS project in the institution

Descriptive Statistics			
	Mean	Std. Deviation	N
What is the extent of adequacy of MIS project implementation funds in institutions	2.89	1.149	70
How do you rate the extent of utilization of MIS project funds by top management	2.51	1.164	70
what extend did the institution experience difficulties in raising the MIS project implementation funds	2.57	.910	70

The statistics in **table** above shows that in determining the influence of funds on implementation of MIS project in the institution, adequacy of funds was critical factor that needed to be prioritized with a mean of 2.89 from a scale of 1 to 5 and the Std. Deviation of 1.149. The statistics also shows that difficult in raising fund was the second factor that needed to be considered because it had a mean of 2.57 and a Std. Deviation of 0.910. The utilization of fund was the least with a mean of 2.51 and a STD Deviation of 1.164 meaning that the fund were actually used for the purpose it was untended for.

4.5. To explore the influence of technology on the implementation of management information system projects

The study also sought to find out the influence of the technology on implementation of management information system and the finding was that the majority of the response was very positive that technology indeed influences implementation of management information system in the institutions.

The findings also reveal that all the institutions experience system downtime. From the findings majority of the institution experience information system downtime at least once a month. Other response stated that the institution experience information system downtime weekly while a few said they experience it daily.

The finding also shows that all the institutions are using network facilities and internet facilities, the findings also states that internet was moderately reliable and other respondents said it was greatly reliable. The response of internet usage was that internet is moderately used while other response stated that it was greatly used.

The study further sought to find out about the security of the information, the responses stated that they usually do information backup whereby majority said the backups is done on daily bases with others said its done twice and thrice a day respectively.

The conclusion is that there is a lot of technical involvement in the implementation of management information system in the institution, and in this study majority of the response on technology influence of management information system implementation was very positive.

From the findings of the study the responses indicated that all the institution experience system downtime and majority stated that they experience system downtime once a month.

The internet and networking was necessary for communication and advertisement of the institution.

System backups were found to be necessary and it was mostly done once a day. The backed up information should be kept in a separate premises away from the institutions.

Table 4.9. The influence of technology on the implementation of management information system projects in tertiary level academic institutions

	influence of technology on implementation of MIS in institutions	Effect of change of technology on implementation of MIS in institutions	Extent of internet facility development	the extent of internet reliability of internet	the extent effectiveness of internet usage in the institution	of the system network in the institution	The extent the website is beneficial to the organization
N Valid	70	70	70	70	70	70	70
Mean	1.57	2.30	2.73	2.14	2.26	2.54	1.99
Std. Deviation	.734	.983	.977	.873	.958	1.003	1.000
Variance	.538	.967	.954	.762	.918	1.005	1.000

The statistics in table 4.10 above shows that in examining the influence of technology on the implementation of MIS projects in the institutions, development internet facility was critical factor that needed most to be considered with a mean of 2.73 from a scale of 1 to 5 and the Std. Deviation of 0.983. The effectiveness of the system network in the institution was the second factor that was to be considered with a mean of 2.54 and a Std Deviation of 1.003. The third factor to be considered was the Effect of change of technology on implementation of MIS in institutions with a means of 2.30 and the Other factor was the extent of internet usage in the institution attracting a mean of 2.026 and a std deviation of 0.958. The benefit accrued from the website to the organization was the next factor to be considered with a mean of 1.99 and a 1.000 std deviation

Table 4.10. Influence of technology on implementation of MIS in institutions

		Frequency	Valid Percent	Cumulative Percent
Valid	very positive	40	57.1	57.1
	positive	20	28.6	85.7
	moderately positive	10	14.3	100.0
	Total	70	100.0	

From table 4.11 above the analyses shows that a great number of respondents said technology influence in implementation of management information system in institutions is very positive with a frequency of 40 out 70 responses rate with percentage of 57.1 %, 20 response rate said technology influence in implementation of management information system in institutions is positive and 10 respondents said that the technology influence is moderately positive.

Table 4.11. Effect of change of technology in implementation of MIS in institutions

		Frequency	Valid Percent	Cumulative Percent
Valid	Very high extent	18	25.7	25.7
	High extent	21	30.0	55.7
	moderate extent	23	32.9	88.6
	low extent	8	11.4	100.0
	Total	70	100.0	

From the analyses the researcher used a scale of 1 to 5, whereby 23 Out of 70 respondents said that change of technology affect implementation of management information system to moderate extent, other 21 said that the effect of technology to MIS implementation in schools is of high extent, 10 said its very great extent and finally 8 replied that only 10 out of 70

Table 4.12. Extent is the internet facility developed

		Frequency	Valid Percent	Cumulative Percent
Valid	very high extent	9	12.9	12.9
	High extent	18	25.7	38.6
	moderate extent	26	37.1	75.7
	low extent	17	24.3	100.0
	Total	70	100.0	

The table 4.13 above shows that most of respondents replied that internet facility is developed to a moderate extent with a frequency of 26 out 70 and 37.1%, 18 respondents said internet facility is developed to a high extent while 17 respondents said that internet facility is developed to a low extent. The analyses also show that a few responses was in the category of great extent that had a frequency of 9.

Table 4.13. Determining the extent of reliability of your internet

		Frequency	Valid Percent	Cumulative Percent
Valid	very high extent	18	25.7	25.7
	high extent	28	40.0	65.7
	moderate extent	20	28.6	94.3
	low extent	4	5.7	100.0
	Total	70	100.0	

The researcher used a scale of 1 to 5 starting with low extent to a very high extent on reliability of the internet in the institution. The table 4.14 above shows that 28 frequency rate was in the category specified as high extent, 20 response rate shows that the reliability of the internet is in the category of moderate extent and 18 response rates were in the category of very high extent. Very few said the reliability is in the category of low extent. This conclusion is that internet facility is reliable in the running of institutions

Table 4.15. Determining the internet usage in the institutions

		Frequency	Valid Percent	Cumulative Percent
Valid	very highly extent	20	28.6	28.6
	highly extent	17	24.3	52.9
	moderately extent	28	40.0	92.9
	Low extent	5	7.1	100.0
	Total	70	100.0	

The analyses shows that a frequency 28 response rate said that internet is moderately used, 20 response rates said internet is very highly used and 17 response rate said internet is highly used. Therefore the conclusion here is the institutions are making use of internet in their operations.

Table 4.15. Determining the effectiveness of the system network in the institution

		Frequency	Valid Percent	Cumulative Percent
Valid	very high extent	13	18.6	18.6
	high extent	19	27.1	45.7
	moderately extent	25	35.7	81.4
	low extent	13	18.6	100.0
	Total	70	100.0	

The analyses in table 4.16 shows that a frequency 25 with 35.7% response rate said that system network is of moderate effective, 19 with 27.1% response rate said that system network is highly effective and 13 response rate said that system network is of very high e effective. Therefore the conclusion here is that majority of institutions have networked their system and it is effective.

Table 4.16. The performance of MIS in the operation of the institution

		Frequency	Valid Percent	Cumulative Percent
Valid	Very high extent	17	24.3	24.3
	high extent	22	31.4	55.7
	moderately extent	21	30.0	85.7
	Low extent	10	14.3	100.0
	Total	70	100.0	

From the analyses on the rate of performance of management information system in table 4.17 above, majority of response was the extent of MIS performance in the institution is high with 31.4% and frequency of 22, this was followed by 30% and a frequency of 21 indicating that the performance of MIS in the operation of institutions is in a scale of moderate extent. 17 said that is in the category of very high extent and 10 said low extent The conclusion is that there is good performance in the institutions due to implementation of management information system.

Table 4.17. The benefit of the website to the institution operations.

		Frequency	Valid Percent	Cumulative Percent
Valid	very high extent	29	41.4	41.4
	high extent	19	27.1	68.6
	moderate extent	16	22.9	91.4
	low extent	6	8.6	100.0
	Total	70	100.0	

Analyses from Table 4.18 above is based on a scale of 1 to 5 where by a category described as very great extent suggests 41.4% and 29 out 70 frequency rate said that website is beneficial' to institutions operations, the next category that attracted the second highest response was the category described as high extent with frequency of 19.The other category of response and a frequency of 16 was category described as moderate with a frequency of 16 and the last one had 6 frequency rate

4.4. To examine the influence of available qualified personnel on the implementation of management information system projects

The findings of this study reveal that a large number of respondents said that employees of these institutions are moderately qualified. Other respondents said that employees are highly qualified and very few said that employees are low qualified. This is explained in table 4.26 below.

The working relation was found to be a team work and top managers and their subordinate relate very well in work. The findings from the study also show that it is to a great extent that staffs in these institutions saw the important of the implementation of these projects.

The respondents replied that staff training is done and majority said it's done yearly while a few staid they do staff training after two years. Very few said they don't do it at all. It was also found that over 50% employees in the institution use the system, others responded said that between 31-49% use the system and other respondents said that its between 11-30% of the employees use the system

The conclusion from the finding is that majority of employees are moderately qualified to use that system and the effort is there to knowing how to use the system.

The good relationship brought team work in the institution and these contributed to successful implementation of management information system.

It was also concluded that staff were seeing the benefits of the implementing these projects

The response reveals that employees are making the use of the system with other institutions starting to appreciate the use of the system and this was brought about by the continued effort of training the staffs

Table 4.18. Examining the influence of availability of qualified personnel on the implementation of MIS in the institutions

Descriptive Statistics				
	N	Maximum	Mean	Std. Deviation
the extent of qualification of the employees who work on the system	70	4	2.66	1.089
the extent of working cooperation between Top management and other junior staff	70	4	2.04	.859
the extent of staff training	70	4	2.86	2.248
the extent of staff understanding about the important of implementation of MIS projects in their institution	70	4	2.57	.910
Valid N (listwise)	70			

The statistics in table 4.18 above shows that in examining the influence of availability of qualified personnel on the implementation of MIS in the institutions, staff training was critical factor that needed most to be considered with a mean of 2.86 from a scale of 1 to 5 and the Std. Deviation of 2.48. The qualification of the employees was the second factor that was to be considered with a mean of 2.66 and a Std Deviation of 1.089. The third factor to be considered was the staff understanding about the benefit of MIS projects in their institution with a means of 2.57 and the last factor was the working corporation between top management and the junior staff attracting a mean of 2.04 and a STD deviation of 0.910.

Assessment using Chi Square Tests

A widely accepted test of Goodness of Fit was identified by Hatcher (1994), and the following characteristics proposed by this researcher were used to test the fit of the model:

- i. The p value for the model chi-square test should be greater than .05; the closer to 1.00, the better.
- ii. The chi-square/degrees of freedom ratio should be less than 2.

Table 4.19. Relationship between management support and MIS implementation in the institutions * Determining if MIS is implemented in the institution

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	16.681 ^a	1	.069		
Continuity Correction ^b	11.860	1	.031		
Likelihood Ratio	13.794	1	.045		
Fisher's Exact Test				.041	.201
Linear-by-Linear Association	16.440	1	.143		
N of Valid Cases ^b	69				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

b. Computed only for a 2x2 table

The p value for the model chi-square test should be greater than .05; the closer to 1.00, the better, therefore in comparing the relationship between the management support and the implementation of MIS in the institutions, the analyses from the table 4.19 above shows that P values is 0.069 which is greater than the 0.05 confidence level and therefore there was a relationship between the management support and the implementation of MIS in the institutions. Therefore researcher accepts the alternative hypothesis H1 and rejects the hypothesis null hypothesis H0

Table 4.20. Determining relationship between Availability of funds and MIS implementation in the institutions * Determining if MIS is implemented in the institution

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.858 ^a	1	.173		
Continuity Correction ^b	.645	1	.422		
Likelihood Ratio	3.010	1	.083		
Fisher's Exact Test				.306	.225
Linear-by-Linear Association	1.831	1	.176		
N of Valid Cases ^b	69				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.22.

b. Computed only for a 2x2 table

The chi-square tests in the table 4.20 above was testing the relationship between the availability of funds and MIS implementation in the institutions, the analyses shows that the P value is 0.173 which is greater than the 0.05 confidence level and therefore there was a relationship between the influence of funds and the MIS implementation in the institutions. Therefore the conclusion here is the funds were critical factor that needed to be considered in the implementation of management information system in the institutions. Therefore researcher accepts the alternative hypothesis H1 and rejects the null hypothesis H0

Table 4.21. Determining relationship between Influence of technology and MIS implementation in the institutions * Determining if MIS is implemented in the institution

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	28.308 ^a	1	.186		
Continuity Correction ^b	20.754	1	.456		
Likelihood Ratio	18.181	1	.094		
Fisher's Exact Test				.361	.234
Linear-by-Linear Association	27.897	1	.181		
N of Valid Cases ^b	69				

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .52.

b. Computed only for a 2x2 table

The chi-square tests in the table 4.21 above was testing the relationship between influence of technology and MIS implementation in the institutions, the analyses shows that the P value is 0.186 which is greater than the 0.05 confidence level and therefore there was a relationship between the influence technology and the MIS implementation in the institutions. Therefore the conclusion here is that technology was also a critical factor that needed to be considered in the implementation of management information system in the institutions. Therefore researcher accepts the alternative hypothesis H1 and rejects the null hypothesis H0.

CHAPTER FIVE

SUMMARY OF FINDING, DISCUSSIONS, CONCLUSION AND RECOMMENTATIONS.

5.1 Introduction

In this chapter the researcher presents and discusses briefly the summary of the findings of the study and further gives recommendations and makes suggestions of the future relevant research, a brief conclusion is given as well in this chapter.

5.2 Summary of the findings

The study had set to assess the factors that influence implementation of management information system in tertiary level academic institutions.

The analysis in table 4.6 shows that there was a strong correlation between manager's support and the implementation of management information system in the institutions.

From the chi-square test in table 4.19 shows that there was a relationship between manager's support and implementation of management information system.

In the second objective which was to determine the extent to which availability of project funds influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa. The result from the chi square in table 4.20 shows that there was a relationship between the influence of funds and the MIS implementation in the institutions. In this study finding shows that majority of the institutions get their project funds from their own revenue. Most of the public institutions also get some funds from the government to implement these management information systems, other public institution get fund from the government as well as the revenue they generate to implement these projects. The finding also shows that majority private institutions get are funded by donors and these can be individual or organization that have interest in the management information system implementation in the institutions.

The third objective in this study is to explore the influence of technology on the implementation of management information system projects in tertiary level academic institutions in Mombasa. The result from the chi square in table 4.21 that there was a relationship between the influence technology and the MIS implementation in the institutions. It was found out that every institution experiences system down time with some institutions saying that they experience it once in a month. The found out that majority of the institution do system backup daily while others do it twice a day

Majority of the institutions have internet facilities and the internet was found to be greatly reliable in these institutions. The finding in table shows that majority of the institutions studied have full access to internet facilities. The result of study found that the effectiveness of the network system was to very high extent. The study also sought to find out if the institutions have website and a very high percentage of response was said that they do have websites. The study sought to determine the extent to which this website was beneficial to the institution and majority said was of great benefit to them.

The fourth objective is to examine the influence of available qualified personnel on the implementation of management information system projects in tertiary level academic

The statistics in table 4.18 shows that in examining the influence of availability of qualified personnel on the implementation of MIS in the institutions, staff training was critical factor that needed most to be considered with highest mean. The qualification of the employees was the second factor that was to be considered and the third factor to be considered was the staff understanding about the benefit of MIS projects in their institution.

5.3. Discussion of the findings

It is generally the findings were the all the factors were that influences management information system implementation in the institutions were necessary and key to the implementation.

The study found that top manager plays a major role in the implementation of these projects.

Pinto and Slevin (1987) argues about the need of management support for success of management information system implementation, this was supported by the tested hypothesis in table which show that there was a relationship between managers support and implementation of management information system.

As noted by Schultz and Slevin (1987), in the literature review many managers are now in support of the implementation of management information system for management of organization records. The analysis in table 4.6 shows that there was a strong correlation between manager's support and the implementation of management information system in the institutions.

In the second objective which was to determine the extent to which availability of project funds influence successful implementation of management information system projects in tertiary level academic institutions in Mombasa. According to Musau (2011) the deputy director ITCS Mombasa polytechnic university college said that a great percentage of ITCS's funds, resources, and personnel go into maintaining and developing the applications and services and the infrastructure on which the MIS run.

According to Doll (1985) argued that Funding commitments are a key mechanism top management MIS implementation, the result from the chi square in table 4.20 shows that there was a relationship between the influence of funds and the MIS implementation in the institutions. In this study finding shows that majority of the institutions get their project funds from their own revenue. Most of the public institutions also get some funds from the government to implement these management information systems, other public institution get fund from the government as well as the revenue they generate to implement these projects. The finding also shows that majority private institutions get are funded by donors and these can be individual or organization that have interest in the management information system implementation in the institutions.

The third objective in this study is to explore the influence of technology on the implementation of management information system projects in tertiary level academic institutions in Mombasa. According to Peansupap and walker (2005) argued on the contribution of technology on the implementation of management information system in the institutions, this was reflected by the result from the chi square in table 4.21 that there was a relationship between the influence technology and the MIS implementation in the institutions. It was found out that every institution experiences system down time with some institutions saying that they experience it once in a month. The found out that majority of the institution do system backup daily while others do it twice a day

Majority of the institutions have internet facilities and the internet was found to be greatly reliable in these institutions. The finding in table shows that majority of the institutions studied have full access to internet facilities. Merseth, (1991 & 1992) talked of effectiveness of networking in doing business. The result of study found that the effectiveness of the network system was to very high extent and the performance of the management information system in relation to institutions operation was very good. The study also sought to find out if the institutions have website and a very high percentage of response was said that they do have websites. The study sought to determine the extent to which this website was beneficial to the institution and majority said was of great benefit to them.

The fourth objective is to examine the influence of available qualified personnel on the implementation of management information system projects in tertiary level academic institutions in Mombasa. According to Roman (2010) in his article 'Factors for ERP Implementation Success' argued that having knowledgeable, experienced, and dedicated staff is the second most-mentioned institutional strength to facilitate a successful ERP system implementation. The statistics in table 4.18 shows that in examining the influence of availability of qualified personnel on the implementation of MIS in the institutions, staff training was critical factor that needed most to be considered with highest mean. The qualification of the employees was the second factor that was to be considered and the third factor to be considered was the staff understanding about the benefit of MIS projects in their institution.

5.4. Conclusions

After an in depth of the analysis of the data, the study reveals that the implementation of management information system was crucial to every institution to help in its management of the records. Most of the institutions are still in the process of management information system implementation whereby they are facing a number of challenges;

The top level management in some institutions in Mombasa have not given full support to the implementation of the project. From the tested hypotheses in table 4.19, the management support is very important factor in the implementation of implementation of management information system in the institutions, the test in Table 4.6 states that there was a strong positive relationship

between the influence management support and the implementation of management information system in the institutions.

The analysis of the data in table 4.7 reveals that the availability of funds was also a very important factor to enable the implementation of management information system. Its shows that there was a strong positive correlation between the availability of funds implementation of management information system in the institutions. The response obtained shows that most institutions got funds from their own revenue while others were funded by the government

The technology involvement in the implementation of management information system is also a challenge because the rate of technological change is very high. Results from the hypotheses tested in table 4.21 found that there was a relationship between the influence technology and the MIS implementation in the institutions. Therefore the conclusion here is that technology was also a critical factor that needed to be considered in the implementation of management information system in the institutions. The analysis also shows that a great number in these institutions had a access to internet and the internet was very reliable. From the analyses there system backups are done daily by many institutions studied and there was reliable networking.

In examining the influence of availability of qualified personnel on the implementation of MIS in the institutions, staff training was critical factor that needed most to be considered this is shown in Table 4.18. Staff qualification was very paramount and the analysis from the table 4.18 shows a strong positive correlation between staff qualifications and the implementation of management information system in the institution. Analyses shows that staff training was done yearly .

5.5. Recommendations.

Given the findings of the study, it is suggested that the following recommendations be considered for adoption so as to assist in the challenges faced in the process of acquisition, designing, implementation and maintenance of management information systems in the institutions.

1. In-house management information system team should be highly qualified and should be regularly well trained to increase their competence in working with the system.
2. Up to date information technology tools should be adopted i.e. software's and hardware's because the management information system run under the framework of these technologies.
3. For example the institution should install the newest operating system and adopt the new software technologies like cloud computing and data save software's, network hardware gargets like repeater should be used to imply signal weakened due to attenuation
4. Top management and the staff should not be resistance to change and they should be ready for changes brought about by the technology in their systems. This is because technology is changing after every 18 month, Loudon (2002) and for management information system to be effective managers should be willing to adopt these new technologies in their systems.
5. Management information system project implementation is a huge investment and this calls for well management of funds made for implementation of these project.

5.6 Suggestion for further research

Having done intensive description of the factors influencing implementation of management information system in tertiary level academic institution in Mombasa, there are more areas of research in the field of information system technologies that need to be considered for further research study

1. The impact of management information system maintenance in tertiary level academic institutions
2. The challenges facing management information system projects implementation in tertiary level academic institutions
3. Factors contributing to the failure of management information system projects failure in tertiary level academic institutions
4. Assessment of the benefits brought about by management information system adoption in tertiary level academic institutions

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Appendices i

Letter of Transmittal

VICTOR K KITHOME
P.O BOX 93670
MOMBASA

THE CSIT DIRECTOR
MOMBASA POLYTECHNIC UNIVERSITY COLLEGE
P.O BOX
MOMBASA

REF: PERMISSION TO COLLECT DATA

I am a student at the University of Nairobi studying Masters of Arts in Project Planning and Management. In line with my studies, I am required to undertake a research project for defense as a requirement for award of the relevant Masters degree

I am thus conducting a research study to establish the factors that influence MIS project implementation in tertiary level academic institutions in Mombasa, your institution being one of them.

This letter is therefore purposely to kindly ask for your permission to seek information in line with the research subject.

Please take note that the information collected through this process will be used strongly for study purpose.

Thanking you in advance

.....
Victor K. Kithome

Appendix ii: DIRECTOR OF (MIS) SURVEY QUESTIONNAIRE

NB: The information gathered will be treated confidentially and will not be used for any other purpose other than for academic purposes.

SECTION A. Institution profile

1	Institution Name (optional)	
2	Location	
3	Mission and vision	
4	Is it public or private institution	
5	Does the institution have a charter	
6	What is the nature of business does the institution do	<input type="checkbox"/> University <input type="checkbox"/> polytechnic <input type="checkbox"/> Technical Training <input type="checkbox"/> professional colleges
7a	What is the size of the institution i.e. The number of employees	<input type="checkbox"/> 1-100 <input type="checkbox"/> 101-200 <input type="checkbox"/> 201-300 <input type="checkbox"/> 301-400 <input type="checkbox"/> Over 500

	What is the size of the institution i.e. The number of students	<input type="checkbox"/> 1-100 <input type="checkbox"/> 101-200 <input type="checkbox"/> 201-300 <input type="checkbox"/> 301-400 <input type="checkbox"/> Over 500
8	Years in Service	

SECTION B. Influence of managers support on implementation of MIS

1. To what extent does top level management support influence implementation of management information system in tertiary level academic institutions?

To a very greater extent
 to a great extent
 To a moderate extent
 To low extent
 to a very low extent

2. Why is there slow management information system project implementation in the institutions?

Top management resistance
 Inadequacy of funds
 Unavailable qualified personnel
 Poor technology usage
 All the above

3. What do you think can be done to boost management information system project implementation in the institutions?

- Top level management support
- Availability of project funds
- Technical aspects
- availability of qualified personnel
- All the above

4. To what extent does availability of funds influence successful implementation of the management information system in tertiary level academic institutions?

- | | |
|-------------------------------------------|--------------------------------------|
| <input type="checkbox"/> Very high extent | <input type="checkbox"/> High extent |
| <input type="checkbox"/> Moderate extent | <input type="checkbox"/> slow extent |
| <input type="checkbox"/> Very slow extent | |

5. According to you, how do you rate the Management effort in implementation of the implementation of management information system in tertiary level academic institutions?

- Not satisfactory
- Partly satisfactory
- Satisfactory
- High satisfactory
- Very high satisfactory

SECTION C. Influence of Availability of funds on implementation of MIS

6. What is the extent of the adequacy of management information system project implementation funds in this institution?

- Very high extent
- High extent
- Moderate extent
- Low extent
- Very low extent

7. How did the institution acquire of funds for implementation of management information system project?

- From the government
- From the donors
- From its revenue
- Fund raising
- Not aware

8. How do you rate the utilization of management information system project fund by the top management?

- Very well utilized
- Well utilized
- Moderately utilized
- Poorly utilized
- Very poorly utilized

9. To what extent did the institution experienced difficulties in raising the management information system project implementation funds?

- To a very great extent
- Great extent
- Moderately extent
- Low extent
- Very low extent

SECTION D. Influence of technology on implementation of MIS

10. How does technology influence implementation of management information system in tertiary level academic institutions?

- Very positive Positive moderately positive
- Negative very negatively

11. Do you experience information system down times?

- Yes No

12. How often do you experience information system down times?

- Daily
- Weekly
- Monthly
- don't know

13. In your own opinion, to what extent does change of technology affect in implementation of management information system in tertiary level academic institutions?

- To a very greater extent Greater extent moderate extent
- Low extent very low extent

14. To what extent is the internet facility developed?

- To a very greater extent Greater extent moderate extent
- Low extent very low extent

15. How do you rate the reliability of your internet?

To a very great reliability

Greater reliability

Moderately reliable

low reliable

very low reliable

16. Approximately what percentage of population within institution has access to internet facilities?

Less than 10%

11% - 30%

31% - 50%

51- 79%

Over 80%

17. In your own opinion how do you rate internet usage in this institution?

Very highly used

highly used

moderately used

Lowly used

very lowly used

18. To what extent is the effectiveness of the system network in this institution?

Very high extent

highly extent

moderately extent

Low extent

very low extent

19. How do you rate the performance of management information system in the operations of the institution?

Extremely very good

very good

moderately good

Poor

Very poor

20.

How often do you experience information

system down times?

- Daily
- Weekly
- Monthly
- Not predictable

19. After how long to you do system backups

- Once a day
- Twice a day
- Thrice a day
- Not aware

20. Does the institution have a website?

- Yes
- No

21. To what extend do you think the website is beneficial to the organization

- A very greater extent
- A greater extent
- Moderate extent
- low extent
- very low extent

SECTION E. Influence of Availability of qualified personnel on implementation of MIS

22. How do you rate the qualification of the employees who work on the system?

- Very highly qualified
- highly qualified
- moderately qualified
- Low qualified
- very low qualified

23. How is the working relationship in the in the institution?

- Team work
- Factional
- Individual
- Any other

24. How is the working relationship between the top level management personnel and the other junior staff?

- Hostile Suspicious Cordial Relations
- Good very good

25. How does management treat non management staff?

- Respectful Mindful Contemptuous
- Value Confidence Trust

25. How do you rate the extent of the staff understanding about the importance of implementing of management information system project in their institutions

- To a very great extent great extent moderate extent
- Low extent very low extent

26. How often do you have staff training on the use of the system?

- Quarterly
- Yearly
- After every 2 years
- After every 5 years
- Not training at all

27. In your own opinion, what percentages of the staff use the system?

Less than 10%

11% - 30%

31% - 49%

Over 50%

Not aware

THANK YOU SO MUCH FOR TAKING YOUR PRECIOUS TIME TO PARTICIPATE

UNIVERSITY OF NAIROBI
KIKUYU LIBRARY
P. O. Box 30197
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