MUNENE. I. W.

2015

MSC.

FACTORS AFFECTING IMPLEMENTATION OF MANAGEMENT INFORMATION SYSTEM IN SELECTED FINANCIAL COOPERATIVES IN NAIROBI, KENYA

IRENE WANJIKU MUNENE

MASTER OF SCIENCE

(ICT Policy and regulation)

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

2015

Factors affecting implementation of management information system in selected financial cooperatives in Nairobi, Kenya

Irene Wanjiku Munene

A thesis submitted in partial fulfillment for the degree of Master of Science in Information Communication Technology Policy and Regulations in the Jomo Kenyatta University of Agriculture and Technology.

2015

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature: _____ Date: _____

Irene Wanjiku Munene

This thesis has been submitted for examination with my approval as University Supervisors.

Signature: _____ Date: _____

Prof. G.S. Namusonge,

JKUAT, Kenya

Signature: _____Date: _____

Dr. Mike Iravo

JKUAT, Kenya

DEDICATION

To my dear mum, Mary Munene.

ACKNOWLEDGEMENT

My sincere gratitude goes to my supervisors Prof. G.S. Namusonge and Dr. Mike Iravo who by their encouragement, professional guidance, intellectual support, time and enduring patience enable me to compile this thesis.

I also appreciate all the help provided by the staff in the department of entrepreneurship, technology, leadership and management of the Jomo Kenyattta University of Agriculture and Technology (JKUAT).

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS

ACCA	-	Association of Certified Corporate Accountants
ATM	-	Automated Teller Machine
CCNA	-	Cisco Certified Network Associate
CPA	-	Certified Public Accountants
CRM	-	Customer Relationship Management
EPM	-	Enterprise Performance Management
ERP	-	Enterprise Resource Planning
FMIS	-	Financial Management Information Systems
FMS	-	Financial Management Systems
FOSA	-	Front Office Systems Administration
GL	-	Generation Language
HR	-	Human Resource
ICT	-	Information Communication Technology
IFMIS	-	Integrated financial management Information Systems
IT	-	Information Technology
ITM	-	Information Technology Management
IS	-	Information Systems
LAN	-	Local Area Networks
MCITP	-	Microsoft Certified Information Technology Professional
MCSD	-	Microsoft Certified Systems Designers
MCSE	-	Microsoft Certified Systems Engineers
MCTS	-	Microsoft Certified Technology Specialist
MIS	-	Management Information System
NGOs	-	Non-governmental Organizations
PDAs	-	Personal Digital Assistants
PEOU	-	Perceived ease of use

PFMR	-	Public Financial Management Reforms
PR	-	Public Relations
PU	-	Perceived Usefulness
SACCOs	-	Savings and Credit Cooperatives
SCM	-	Supply Chain Management
SPSS	-	Statistical Package for Social Science
SQL	-	Structured Query Language
TAM	-	Technology Acceptance Model
TRA	-	Theory of Reasoned Action
UK	-	United Kingdom
USA	-	United States of America
UTAUT	-	Unified Theory of Acceptance and use of Technology

DEFINITION OF TERMS

Applications: This term has been used to refer to programs developed to assist computer users in completing specific tasks (Cheng, 2010).

Computer: This term refers to a machine that manipulates data based on a list of instructions (Cheng, 2010).

Client-Server: This term refers to a network system in which one or more dedicated computers provide services (Easttom, 2011).

Data: This term is used in the study to refer to the raw materials from which the information is generated (Barki et al.2005, Ewusi-Mensah, 2005).

Financial Management Systems (FMS): This term is used to refer to the system that supports the financial functions required to track financial events, provide financial information significant to the management of the services, and required for the preparation of financial statements and the financial portions of mixed systems that support financial management. (Muendo, 2013)

Hardware: This term refers to the physical part of a computer (Cheng, 2010).

Information: This term is used to refer to data that have put into a meaningful and useful context that make it to have value for specific persons and meets their particular information needs (Barki et al.2005, Ewusi-Mensah, 2005).

Infrastructure: This term is used to refer to the physical hardware used to interconnect computers and users. Infrastructure includes the transmission media, including telephone lines, cables television lines, and satellites and antennas, and also the routers, aggregators, repeaters, and other devices that control transmission paths, software used to send, receive and manage the signals that are transmitted. (Caldwell, 2009)

Information System (IS): This term is used to mean a set of people, procedures and resources that collects, transforms and disseminates information in an organization (Bakos & Brynjolfsson 2005).

Information Technology Management (ITM): This term is used to refer to the process whereby all resources related to information technology are managed according to an organization's priories and needs. This includes tangible resources like networking hardware, computers and people, as well as intangible resources like software and data. (Caldwell, 2009)

Management information system (MIS): This term has been used to refer to those systems used by managers and administrators in disseminating and acquiring information with regard to organizations operations (Bakos & Brynjolfsson 2005).

Oracle: Is an object-relational database management system (Cheng, 2010).

Program: The term used to refer to instructions that tell the computer what to obtain information, how to process information and perform calculations, and what output to produce (Cheng, 2010).

Server: This term is used to refer to a dedicated machine that provides access to resources which are located on it as requested by the users (Easttom, 2011).

Cooperation: The term is used to refer to an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations though a jointly-owned and democratically-controlled enterprise (Ouma, 2012)

Software: The term is used to refer to a collection of programs (Cheng, 2010).

System: The term system in this study is used to mean a group of interrelated components that work collectively to carry out input, processing, output, storage and control of actions in order to convert data into information products that can be used to support forecasting, planning, control, coordination, decision making and operational activities in an organization (Barki et al.2005, Ewusi-Mensah, 2005).

ABSTRACT

Management Information System (MIS), Information System (IS) and Information Technology Management (ITM) overtime have been used in different forms. Information Technology management (ITM) concerns the operation and organization of information technology, while Management Information System (MIS) provides information which is needed to manage organizations efficiently and effectively; and involves people, technology and information. The main objective of this study was to examine the factors affecting implementation of MIS in selected financial cooperatives in Nairobi. Specifically, the study sought to find out the effect of training, cost, infrastructure and regulations on the implementation of MIS. The study explored the strategies that could be adopted to enhance effective implementation of MIS in these organizations. The study employed survey study as its research design since it involving five (5) organizations from a total population of 52. The sample consisted of one hundred and four (104) support staff and five (5) senior staff members from the selected organizations. The sampling design was mainly simple random sampling procedure which was used to select the support staff, however, senior managers were selected using purposive sampling technique. Structured questionnaire was the main research instrument used to collect data from the support staff, as well as an interview method that was used to collect data from a few senior managers from respective organizations. The collected data was analyzed quantitatively by descriptive and inferential statistics. The analyzed data revealed that factors: training, cost, infrastructure and regulations affected the implementation of MIS in selected financial cooperatives in Nairobi. Study recommends favorable regulations for effective implementation of Management Information System in organizations such as provision of internet bundles and lowering of prices. Further research should be on ineffectiveness of MIS implementations, extend of legal provisions during its implementation and challenges that affect it and the organization output that go with it.

CHAPTER ONE

INTRODUCTION

1.1 Background

The terms Management Information System (MIS), Information System (IS) and Information Technology Management (ITM) are often confused. ITM concerns the operation and organization of information technology resources independent of their purpose. A management information system (MIS) provides information which is needed to manage organizations efficiently and effectively. It involves three primary resources: people, technology, and information (Kenneth, 2009). Management information systems are distinct from other information systems in that they are used to analyze operational activities in the organization. Academically, the term is commonly used to refer to the group of information management methods tied to the automation or support of human decision making (O'Brien, 2009).

Initially, in businesses and other organizations around the world, internal reporting was produced manually and only periodically, as a by-product of the accounting system and with some additional statistic(s), and gave limited and delayed information on management performance. Data was organized manually according to the requirements and necessity of the organization. As computational technology developed, information began to be distinguished from data and systems were developed to produce and organize abstractions, summaries, relationships and generalizations based on the data (Laudon & Laudon, 2010). This marked the beginning of management information systems in organizations.

In the last decade, Kenya has seen a lot of development in the application of ICT. However, the number of organizations, especially the growing ones are still using old management systems in management Bwisa (2009).

Management Information Systems arose to describe the applications that were

used to provide managers with information about sales, inventories, and other data that would help in managing the organizations. Today, MIS is used broadly in a number of contexts and includes but may not be limited to decision support systems, resource and people management applications, enterprise resource planning (ERP), enterprise performance management (EPM), supply chain management (SCM), customer relationship management (CRM), project management and database retrieval applications (Harsh, 2009).

Global information systems development can be closely attributed to the process of globalization in which the IT industry is becoming more and more globally interconnected. A number of scholars have argued that the existing local, socio-cultural context is a critical factor in mediating the globalization process in a specific context and, in turn, has an impact on the complexity of globalization (Avgereu, 2007). Financial management systems are applications that perform financial management functions and include both manual and automated systems for program and administrative financial management. These applications are used to collect, record, classify, analyze, and report data for financial decision making. These applications process, control, and account for financial transactions and resources are used for auditing, formulating and executing budgets (OCIO, 2005). A good example is whereby various organizations use these applications to generate financial management and accounting information to support agency and Departmental missions.

In Kenya, Financial Management Systems (FMS) are used to provide receivable management solutions to financial service institutions both in the government and private sector. Moreover, the ministry of finance has come up with a Public Financial Management Reforms Programme (PFMR). This program aims to strengthen public financial management systems in a bid to enhance transparency, accountability and responsiveness to public expenditure policy priorities. The ultimate vision of the Programme is not only to improve provision of essential public services but also to ensure economic growth, poverty reduction and good governance to the people of Kenya.

The public Financial Management Bill 2012 is an act of Parliament to provide for the effective management of public finances by the national and county governments; the oversight responsibility of Parliament and county assemblies; the different responsibilities of government entities and other bodies, and for connected purposes recommends that the national treasury shall design and prescribe an efficient financial management system for the national and county governments to ensure transparent financial management and standard financial reporting as contemplated by Article 226 of the Constitution.

Management Information System role is to connect, accumulate, process, and then provide information to all parties in the budget system on a continuous basis. All participants in the system, therefore, need to be able to access the system, and to derive the specific information they require to carry out their different functions.

The University of Nairobi conducted a study on the relationship between financial management information system and financial performance of small and medium enterprises in Nairobi County, Kenya. The interest in the study was inspired by the existing knowledge in addition to the current literature, creating further a gap in emerging economies and their unique needs. Mixed and inconclusive findings suggesting that a more in depth analysis is required, therefore the study sought to answer the question; what is the relationship between management information system and firms' financial performance of small and medium enterprises in Nairobi County in Kenya. From the findings the study concluded that there is the relationship between management information system and financial performance of small and medium enterprises in Nairobi County. The study recommended that the SMEs should put in place proper financial systems to enhance financial performance and generation of usable output by employees (UoN, 2010).

1.2 Statement of the Problem

Implementation of MIS in financial organizations is one of the tools needed to eliminate the logging of jobs and enhance the smooth running of the Sacco's

operations. In Kenya Borura (2010) in his study recommended that training should take place very close to the time of actual installation. The study however did not triangulate to get the view of senior managers, However Financial cooperatives could offer more insights into the challenges that affect the implementation of MIS.

In other countries results have been varied. Giunipero et al (2005) studied on the barriers of effective MIS implementation in a case of listed companies in Terahn and found that with implementation of MIS, manufactures and companies can expect improved performance in lead times, quality levels, labor productivity, employee relations, inventory levels and manufacturing costs. For small organization like financial cooperatives, it means the situation may be different, thus the need for the current study. Small organizations, especially those dealing with finances may be vulnerable due to lack of adequate knowledge in the system use. The implementation of MIS without well trained workforce may therefore pose a great challenge in the transactions.

Organizations, as they implement MIS are also guided by certain regulations that are meant to protect the privacy and security of private financial information that financial institutions collect, hold, and process Dhillon (2007). However, there is no attention that has particularly been made on the factors facing the implementation of MIS in Financial cooperatives, hence there is need to examine the factors affecting the implementation of MIS in the Financial Cooperatives in Nairobi.

1.3 Objectives of the study

1.3.1 General objectives

The general objective of this study was to examine factors affecting the implementation of MIS in financial cooperatives in Nairobi Kenya.

1.3.2 Specific Objectives

This study was guided by the following specific objectives:

i. To find out the effect of training in Information Communication Technology on the implementation of Management Information System in Financial Cooperatives in Nairobi Kenya.
ii. To establish the effect of cost on the implementation of Management Information System in Financial Cooperatives in Nairobi Kenya.
iii. To find out the effect of technology infrastructure on the implementation of Management Information System in Financial Cooperatives in Nairobi Kenya.
iv. To find out how regulatory environment affect the implementation of Management Information System in Financial Cooperatives in Nairobi Kenya.

1.4 Hypotheses

This study was guided by the following research hypothesis;

H0	There is no significant relationship between performance and how effectively an organization applies Management Information Systems
H1	There is a significant relationship between performance and how effectively an organization applies MIS
H0	The implementation of Management Information System in the selected Financial Cooperatives in Nairobi has no effect on ICT training
H1	The implementation of Management Information System in the selected Financial Cooperatives in Nairobi has effect on ICT training
H0	The implementation of Management Information System in selected Financial Cooperatives in Nairobi has no effects on cost
H1	The implementation of Management Information System in selected Financial Cooperatives in Nairobi has effect on cost

1.5 Justification of the Study

The study was expected to be of significance to a number of stakeholders: These include the management of financial organizations, policy makers, and system developers. The study was also expected to contribute to global knowledge on the challenges facing the implementation of MIS in financial movements. Information

system applications remain a fundamental component in the administration and management of many organizations. And that for a sound deliberation of instructions, and efficient running of administrative work, then the application of an effective Information System was imminent. System developers: The findings of this study on the training needs, cost involved in buying, installing, and maintaining information systems, regulatory mechanisms, policy implementation and infrastructure issues that may hinder effective implementation of MIS are areas that shed more light to system developers in designing tailor made applications for financial institutions.

1.6 Scope of the Study

The study focused on the factors that are affecting the implementation of MIS at the various selected Small Scale Financial Cooperatives in Nairobi. The factors that were dealt with will be; training of personnel, cost of the Information System, infrastructure, and the regulatory environment. The management staff and office employees was the key informants since they were directly involved with the day today running of the organization.

1.7 Limitations of the Study

Limitations were those conditions which were beyond the control of a researcher that placed restriction on the conclusion of the study and their application to the situations (Best & Kahn, 2005).Questionnaires were the main tool used for data collection and some people were not willing to reveal all the required information. Due to time and financial constraints, not all questionnaires were returned. Some respondents who were mainly administrators and managers of the various organizations failed to answer the asked questions on the factors affecting the implementation of MIS at their respective organizations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature on the implementation of Management Information System in organizations. The sources of literature include mainly journal articles, web articles, and published studies. The chapter is divided into the following: An overview of co-operative development in Kenya, how training factor affects the implementation of MIS in organizations, the cost factor in implementing Management Information System, the issue of infrastructure development in Management Information System implementation and the regulatory environment impact on Management Information System Implementation.

2.1.1 Cooperatives

Cooperatives are organizations based on the values of self-help, self-responsibility democracy, equality, equity and solidarity. A co-operative is a means of organizing activity, not the activity itself. It is a democratic organization owned and controlled by the people it serves who voluntarily join together for a common and mutual benefit. The strength of a co-operative lies in the members not in the profit the cooperative makes. The international cooperative Alliance defines a cooperative as an autonomous association of people who have gathered in a voluntary way in order to satisfy their needs as well as economic, social and cultural aspirations by means of a joint and democratically managed venture (Ouma, 2012). In Kenya, different types of cooperatives exist; agricultural marketing cooperatives, consumer cooperatives, housing cooperatives, saving and credit cooperatives, artisanal and handicrafts cooperatives, service cooperatives, multipurpose cooperatives among others. For this study, economic motive means financial objectives relating to savings and credit cooperatives.

Savings and credit cooperatives society as a cooperatives whose objective is to encourage its members to save, thereby creating or accumulating capital, which

can then be lent to the members at a reasonable rate of interest. The loans are given for provident purposes, besides being given also for productive purposes, that is, loans for economic development, say a loan to buy a tractor, a cow, a plot or a house (Sacco, 2012). For this study the survey concentrated on the saccos in Nairobi as indicated in appendix II.

2.2 Theoretical Framework

There are various theories and models that are associated with the acceptance and take-up of ICT innovations. These models/ theories on ICT acceptance and implementation have been developed in association with commercial products and business organizations. This section reviews some of the theories that are associated with the adoption and implementation of ICT adoption in organizations. Some of these theories reviewed include Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT).

2.2.1 Technological Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis to explain technology-usage behavior. The theoretical basis of the model was (Fishbein & Ajzen's, 2007). Theory of Reasoned Action (TRA). Both of these theories have strong behavioral elements; assume that when someone forms an intention to act, they will do so without limitation. However, in real life situation, there will be many constraints that limit freedom to act (Bagozzi & Warshaw, 2006).

Further, the Technology Acceptance Model (TAM) is a theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, namely: a) Perceived usefulness (PU) and Perceived ease-of-use (PEOU). TAM suggests users formulate a positive attitude toward the technology when they perceive the technology to be useful and easy to use (Davis, 2006). Several researchers have replicated Davis's original study (Davis, 2006) to provide empirical evidence on the relationships that exist between

usefulness, ease of use and system use (Adams, Nelson & Todd 2008, Hendrickson, Massey & Cronan 2005, Subramanian, 2005). The sum of these studies has confirmed the validity of the Davis' findings on the relationship that exists.

There is no doubt that TAM has emerged as one of the most influential models in this stream of research. The model represents an important theoretical contribution toward understanding use of technology and its acceptance. However, this model, with its original emphasis on the design of system characteristics fails to account for social influence in the adoption and utilization of new technologies (Mazhar, 2006) information systems.

2.2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

This model was formulated by (Venkatesh & Bala, 2008). The model aims to explain user intentions to use an information system and subsequent usage behavior. The theory holds that four key constructs, namely performance expectancy, effort expectancy, social influence, and facilitating conditions are direct determinants of usage intention and behaviour. Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on usage intention and behavior.

This model has been found applicable. For instance, Koivimäki, Ristola, and Kesti, (2008) applied the model to study the perceptions of 24 individuals in northern Finland toward mobile services and technology and found that time spent using the devices did not affect its users perceptions, but familiarity with the devices and user skills did have an impact.

UTAUT was introduced in order to fill the missing gaps in TAM. The model is a well-meaning and thoughtful presentation, but that it presents a model with so many constructs that easily render it chaotic (Bagozzi, 2007). To this end, Bagozzi suggested a more direct model that can succinctly explain decision making when adopting or implementing any technology in the organization/institution.

2.3 Conceptual Framework

The conceptual framework of this study shows the interaction between the dependent and independent variables. This study conceptualizes that the implementation of MIS being a dependent variable depends upon various factors. These factors as conceptualized in this study include training, cost, infrastructure and the regulatory environment.

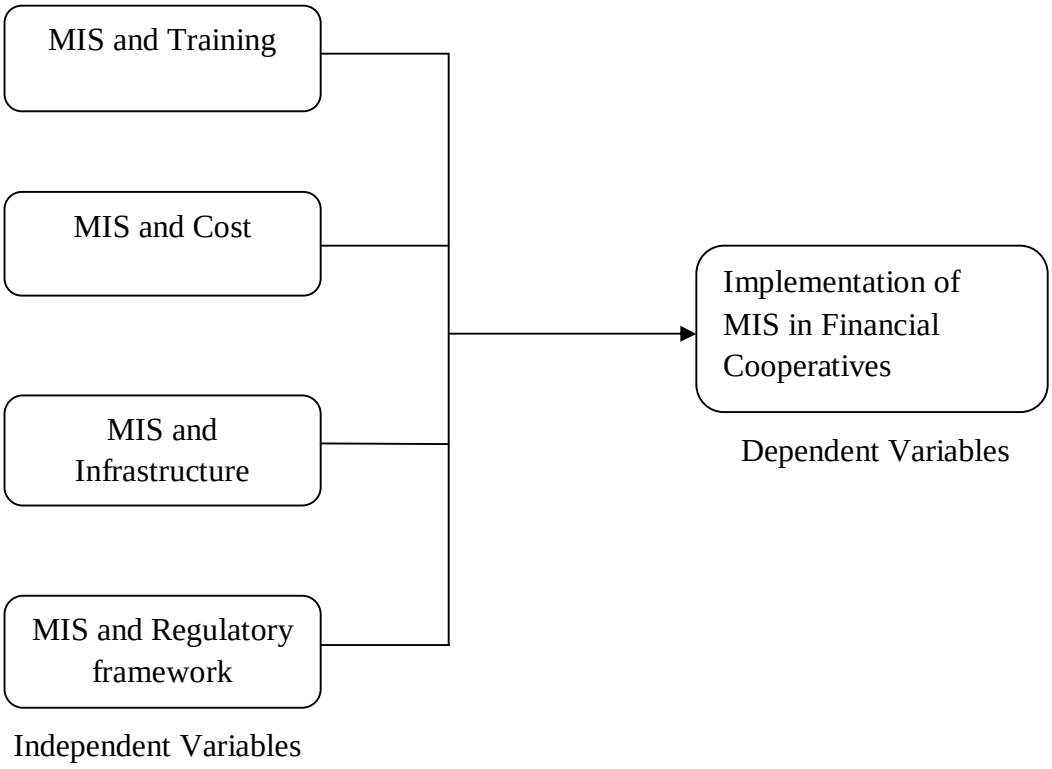


Figure 2. 1: Conceptual Framework

2.4 Review literature on Variables

2.4.1 Effect of training on implementation of MIS

The study by Barki & Ewusi in regard to MIS implementation, postulated that lack of expertise, including lack of development expertise, lack of application on specific knowledge and lack of user experience on IS, contributes to MIS project risk (Barki et al.2005; Ewusi-Mensah, 2005) This indicates that for managers to

work efficiently in implementing the Management information system in their organizations, then they must have a hand and experience in IT systems. Other scholars (Block, 2005; Keil et. al., 2007) conducted a study in hindrances to effective implementation of MIS in organizations in USA. The study showed that lack of user commitment, ineffective communications with users, conflicts among user departments and lack of IS training by some personnel are all an hindrance to effective implementation of MIS system in organizations.

A study by the University of Nairobi on the factors affecting effective implementation of integrated financial management information systems (IFMIS) in government ministries in Kenya established that effective use of the system is affected largely by sabotage and resistance. The study also established that management support is lacking and top management does not inspire the user. The capacity and technical knowhow was found to be low due to lack of training and the hurried implementation of the system. The study recommended that the Government employs a change agent to oversee the implementation of the IFMIS system and those users of the system to undergo on the job training in order to improve their skills and capabilities to use the system (UoN, 2013).

The implementation of Management Information systems often entails the use of client–server technology and this may cause further complications. Caldwell (2009) conducted a study on effective implementation of MIS in organization in the UK. The study found that it is often critical to acquire external expertise, including vendor support, in order to facilitate successful implementation of MIS. In addition, the costs of training and support are often underestimated and these costs may be many times greater than originally anticipated. Client–Server implementations often bring 'surprises' with respect to cost because of the costs of decentralized servers, systems integration software, technical support and software updates and version control (Caldwell, 2009). From the study, it is evident that the issue of training cannot be ignored in the effective implementation of MIS in organizations.

The findings of another study by Menza (2007) also showed the need of training for effective implementation of MIS in any organization. The study found that if the end user of an ICT system did not receive prior training, then there is bound to be resistance in terms of usage of the system. His postulation in his finding is that the use of report generators and user training in reporting applications are critical to MIS project implementation success. According to the study, insufficient end-user training can generate resistance to using the system, largely because people are ill-prepared for using it effectively.

Training has been found in some other studies to be critical in effective implementation of MIS. Sumner (2009) conducted a case study on the experiences of seven companies implementing MIS in Europe. The study used an in-depth structured interview with the senior project managers responsible for planning and implementing MIS systems within their respective organizations. The study showed that many firms had learned that investment in training and re-skilling the IT workforce was paramount to MIS effective implementation. Further, the study found that growing internal IT staff members with needed technical skills, particularly in application-specific modules, was a strategy followed by many organizations in Europe.

Borura (2010) carried out a study on MIS implementation in Kenyan parastatals. The study relied heavily on primary data which was collected by use of structured questionnaire. The questionnaires were distributed through 'drop and pick' method and in some cases by email. The study adopted a survey research design. The survey design was preferred because the researcher intended to collect cross sectional data on the practice and challenges of information systems implementation in Kenyan state parastatals. In addition, it allowed large amounts of data to be collected from a substantial population in an efficient manner. Although survey design was time consuming, the method was useful as it allowed comparisons to be made easy from the results. The study found that were issues related to lack of adequate training among the staff who used MIS system. The study recommended that training should take place very close to the time of actual

installation. According to the study, it is a waste of time to train people on new system more than a week or two before the new system is implemented because most people simply forget what they learned in the training session. The study however did not triangulate to get the view of senior managers. Financial cooperatives could offer more insights into the challenges that affect the implementation of MIS.

2.4.2 Cost Factor in MIS Implementation

Information Systems implementation is often a high cost and high risk proposition involving social and technical uncertainty. Over the past two decades, many organizations have implemented systems for capturing digital content as records and managing digital records throughout their life cycle. The success of the implementation various types of MIS differ from one organization to another (Benaroch & Appari, 2010).

A study by Ravichandarani (2006) conducted a study that involved individual users of IS in 20 different organizations in Miami. The study showed that contributing to ineffective MIS implementations included among others, cost overruns, missed deadlines, inaccurate features, and out-and-out failure. From the findings, it is evident that cost factor impacted on the implementation of MIS in organizations. Many organizations especially the small ones cannot risk putting on expensive or high costly gargets of which they are not sure of their benefit.

Contrary to other people's opinions, some scholars have argued that a successfully implemented MIS, however costly it seems, leads to decreased transaction costs and also greater efficiency. This is evident from a study by Bakos and Brynjolfsson (2005). The study argued that MIS technology is generally implemented to reduce coordination costs, increase productivity, or in response to the demands of a powerful trading partner. In cooperating an internet for instance makes communications between departments, individuals, or organizations more cheaply comparing to one having to move around or writing letters to convey a message. Computer usage makes work easier and faster in comparison to the old

methods of writing and storage of information which are always tedious, clumsy, costly and more time consuming. Clemon and Row, (2005) established that many supplier organizations that implement IS technology do so only at the insistence of a dominant customer and receives little or no benefit themselves. For these firms, implementation is costly but required to preserve an existing business relationship, with the dominant business partner threatening to withhold business if implementation does not occur within a specified time-frame. Dacovou et al. (2007) describe these firms as coerced adopters since there are no ongoing benefits that are associated with the new system (other than continued business). These adopters have a strong incentive to make a low-cost, one-off investment in IS technology. In other words, these firms will select a low cost solution, and once purchased, minimize the ongoing cost by not maintaining the technology. The low cost of this solution suggests that management involvement will be minimal (other than approving the package selected), and that the technology will not be integrated with other systems.

Mwaniki (2013) carried out an assessment of the effectiveness of integrated financial management system in public sector financial reporting in Kenya. The findings showed that organization capacity and organizational change influenced the implementation of IFMIS in the public sector. The study concluded that binding constraint when introducing IFMIS"s e.g. technical constraints were prevalent in the organization. Change management lacked an effective organizational structure thus delaying the effectiveness and use of IFMIS in the organization. The study therefore recommends that IFMIS projects reforms should be easy to use by the manager. Secondly they should address an external reporting requirement by the manager and confined to the manager's area of concern. It is also recommended that the public institutions should develop an IFMIS that caters not just those of the central agencies, but also line agencies. Lastly but not least, the management should ensure that implementation of IFMIS takes into consideration the norms, meanings and power of an organization to avoid resistance and issues such as sabotage

King and Burgess (2007) carried out a study entitled understanding failures and successes of MIS. The study was carried in UK. According to the study, MIS programs in organizations had been criticized on the ground of excessive time, cost and disruption of implementation and the sometimes limited benefits once the systems become operational. The study further postulated that for small organizations, putting on sophisticated and costly IS systems will lead to unnecessary incurrence of loss. That the sophisticated MIS equipments were not so much beneficial to the small organizations in terms of efficiency and cost reduction hence the reluctance of some of the management in implementing the same.

Some other studies however have shown varied results. Giunipero et al (2005) in study on the barriers of effective MIS implementation in a case of listed companies in Terahn found that with implementation of MIS, manufactures and companies can expect improved performance in lead times, quality levels, labor productivity, employee relations, inventory levels and manufacturing costs. A study by White, Pearson, and Wilson,(2006) went on to suggest that MIS implementation in companies has led to several benefits which include lower production cost, higher and faster throughputs, better product quality, reduced inventory costs, and efficient management in the organizations. The studies however targeted big manufacturing companies where there are high transactions levels which need effective MIS. For small organization like financial cooperatives, the situation may be different, thus the need for the current study.

2.4.3 The effect of ICT Infrastructure and MIS Implementation

Al-Mashari and Jarrar, carried out a study on the issue infrastructure in the implementation of MIS in organizations in Dubai. The study employed a random sampling technique. Some twenty (20) companies were selected based on the critical success factors on MIS implementation. The study found that adequate IT infrastructure, hardware and networking are crucial for an MIS system's success. It is clear that MIS implementation involves a complex transition from legacy information systems and business processes to an integrated IT infra-structure and

common business process throughout the organization. Hardware selection is driven by the firm's choice of an MIS software package. The software vendor generally certifies which hardware (and hardware configurations) must be used to run the MIS. This factor has been considered critical by the practitioners in effective implementation of MIS in organization. Implementation of MIS in Small organization without sound IT infrastructure may thus pose a huge challenge.

Muendo (2013) focused on the factors affecting financial management systems of local authorities in Kenya. The specific purpose of her study was to investigate the effect of budget preparation process on financial management systems in local authorities, to establish the effect of local authority funding on the financial management systems in local authorities, to identify the effect of management practices on the financial management systems in local authorities, and to establish the effect of employee capacity on the financial systems in local authorities. It was found that budget preparation, local authorities funding, management practices and employee capacity had a great effect on the management of finances in local authorities in Kenya.

Another important factor in MIS development is the Information Systems infrastructure. There is a misconception that it is costly to develop or buy a knowledge management system. This might be one of the reasons why many top managers were reluctant to develop a knowledge management program in the research carried in Malasyan companies by Choy (2006). Organizations must understand that there is no silver bullet in knowledge management systems that is what worked in one company may not work for another. Further, organizations can make use of the technologies they currently have, rather than buying the entire system which might not fit the company, as elucidated by Tiwana (2011). A team comprises of IT personnel and other related personnel can be formed to look at what are the requirements of the company, and then look at what are the technologies available that can be combined into the system. It is worth remembering that an information system is just an enabler to knowledge management. As mentioned by King (2007), successful deployment of knowledge

management requires an organization to think in terms of applications and how people use applications. It is not the technology itself that induces knowledge sharing, but rather a separate motivation to share knowledge (Hendriks, 2009).

Management Information systems processes recommend best practice for requirements analysis, planning, design, deployment and ongoing operations management and technical support of an ICT infrastructure. The infrastructure management processes such as ICT design and planning, ICT deployment, ICT operations and also ICT technical support are key components for effective implementation of MIS (Warga, 2006). For small organizations, there is need to look into the kind of infrastructure they have, and whether these are adequate for the effective implementation of MIS.

2.4.4 The Regulatory Environment and MIS Implementation

Organizations have a legal and moral duty to comply with the existing laws and regulations. Organizations need to understand what laws and regulations actually apply in their area of services, followed by the need to understand how they apply and what needs to be done to comply and ensure compliance on an ongoing basis. This takes time and resources, together with strong management, if it is to be done in an appropriate way (Baxter, 2005). There are various provisions posed by various governments concerning IS, ICT or MIS technology implementation. For instance The Computer Misuse Act 1990 is an Act of the UK Parliament making computer crime like cracking or hacking a criminal offence. The Act has become a model upon which several other countries including Kenya have drawn inspiration when subsequently drafting their own information security laws (Aceituno, 2005). This means that organizations in such countries are obliged to take maximum care and ensure the well being of the gargets. Small organizations, especially those dealing with finances may be vulnerable due to lack of adequate knowledge in the system use. The implementation of MIS without well a well trained workforce may therefore pose a great challenge in the transactions.

A 2010 study by the University of Nairobi sought to assess the implementation of integrated financial management systems & service delivery among local authorities in Trans Nzoia County, Kenya. From the findings of the study it was evident that LA's in Trans Nzoia County have adopted the use of IFMS in their daily operations with mixed results. This is attributed to a wide range of factors such as lack of adequate training, lack of investment in ICT tools required and shortage of the same. From the findings it was evident that more can be achieved with full implementation of the system at the LA's (UoN, 2010).

Organizations, as they implement MIS are also guide by certain regulations that are meant to protect the privacy and security of private financial information that financial institutions collect, hold, and process (Dhillon, 2007). This actually means that not all information however necessary it may seem may be transmitted through electronic gargets. Thus, other means of disseminating sensitive issues in this case would be sought; hence rendering the system not very efficient. There are regulations that require publicly traded companies to assess the effectiveness of their internal controls for financial reporting in annual reports they submit at the end of each fiscal year. Chief information officers are responsible for the security, accuracy and the reliability of the systems that manage and report the financial data (Isaca, 2006). This means that the organizations have to be strict on the type /and accuracy of information, contained or transmitted through their systems. Small organization may lack capacity of validating the reports released through their systems. There is therefore need to examine the extent to such organizations adhere to the legal provisions during the implementation of MIS.

2.4.5 Measurement of Implementation of MIS

Training has been found in some other studies to be critical in effective implementation of MIS. Sumner (2009) conducted a case study on the experiences of seven companies implementing MIS in Europe. The study used an in-depth structured interview with the senior project managers responsible for planning and implementing MIS systems within their respective organizations. The study showed that many firms had learned that investment in training and re-skilling the

IT workforce was paramount to MIS effective implementation. Further, the study found that growing internal IT staff members with needed technical skills, particularly in application-specific modules, was a strategy followed by many organizations in Europe.

Contrary to other people's opinions, some scholars have argued that a successfully implemented MIS, however costly it seems, leads to decreased transaction costs and also greater efficiency. This is evident from a study by (Bakos & Brynjolfsson, 2005). The study argued that MIS technology is generally implemented to reduce coordination costs, increase productivity, or in response to the demands of a powerful trading partner. In cooperating an internet for instance makes communications between departments, individuals, or organizations more cheaply comparing to one having to move around or writing letters to convey a message. Computer usage makes work easier and faster in comparison to the old methods of writing and storage of information which are always tedious, clumsy, and costly and more time consuming.

2.5 Critique

In the study by Sumner (2009) concerning MIS implementation on a number of firms in Europe, the many firms had learned that investment in training and re-skilling the IT workforce was paramount to MIS effective implementation. The study also found that internal IT staff members who had certain technical skills were more targeted. The study targeted only the most senior management of the firms who might not have given a true reflection of situation at hand. Senior management of organizations might be bound actually to set a positive PR of their firms, while ignoring the negative sides. Therefore triangulation that is targeting both senior and junior employees could have offered more insights. Further, the study targeted big companies unlike the ones in this study's scope which are mainly small financial co-operations.

Block, (2005) and Keil et. al., (2007) conducted a study on hindrances to effective implementation of MIS in health organizations in USA. The study showed that lack of user commitment, ineffective communications with users, conflicts among user departments and lack of IS training by some personnel are all an hindrance to effective implementation of MIS system in organizations. Although this study may be very much relevant in the current study, was carried out with reference to health organizations. Data accrued from such a place and environment may differ because of the mode of operations and placement of such organizations. Hence a true reflection of the same must be sought from the local scenario. Among the factors a study by Ravichandarani (2006) found contributing to ineffective of MIS implementations were among others, cost overruns, missed deadlines, inaccurate features, and out-and-out failure. This study though relevant in the current study was carried out in Miami and involved big companies. The study was not based on primary data. Use of primary data could have provided more tangible information on the issue of MIS implementation.

A study by Jarral *et. Al,* (2011) regarding MIS implementation established that, MIS implementation involves a complex transition from legacy information systems and business processes to an integrated IT infra-structure and common business process throughout the organization. The study involved developed corporate firms in developed countries. There is need to carry out the same study in smaller, growing firms specifically financial ones to establish how MIS implementation is affected by lack of adequate infrastructure. Review of literature has shown that certain legal environment may hinder effective implementation of MIS organizations. Although ICT related regulation are meant to support the functioning of organizations, it may be may pose some challenge to small organizations.

2.6 Summary

Review of literature showed that there are a dozens of studies that have been conducted in the field of the factors affecting MIS implementation in

organizations. From the literature reviewed, these factors (training, cost, infrastructure and regulatory environment) were found to be directly or indirectly influencing MIS implementations in organizations. Virtually all the reviewed studies were based on large corporate firms in the USA, UK, Europe and Canada. Only very few research concerning the same have been done in Africa. Only one study had been carried in Kenya but with reference to government parastatals. Some used only questionnaires method and lacked triangulation. In general, the reviewed studies are wide in scope, having considered various organizations from international perspective. This study therefore looks at this aspect broadly (the factors influencing MIS implementation) at a local perspective that is survey of Financial Cooperatives in Nairobi. The small scale financial institutions, which are still developing and having tremendous number of activities and operations, are presumed to have considerable number of challenges in MIS implementation.

From figure 2.1, it is clear that effective implementation of MIS is determined by various factors namely, training of personnel, infrastructure, cost and the regulatory environment.

Training of personnel: Since much of the information systems involve the application of ICT knowledge, personnel who have no or poor training in that line would not be very effective in implementing the same. Thus instead of them applying ICT knowledge in acquiring or transmitting information to the various organs in the organization, they would prefer using other old mechanisms which they would be comfortable with. Hence training and re-skilling managers and other administrators in ICT facilities are paramount for an effective MIS application.

Cost factor: Other people or organizations especially smaller ones would not afford the cost of acquiring, installing and maintaining ICT equipment's. Others would prefer low cost equipment's which might be less efficient in information transmission and acquisition. If the cost of acquiring and maintaining the facilities would go down, then it would boost MIS implementation in organizations especially smaller ones.

Infrastructure: These pertains physical and system infrastructure. Without such, it would be difficult for organizations to effectively implement MIS.

Regulatory environment: The organization's management or government policy in regard to the use of certain MIS systems in certain areas can also hinder the effective implementation of MIS. For instance, the Kenya communication commission requires records of all communication of individuals in their systems. Thus, this study conceptualizes that certain legal provisions may hinder effective implementation of MIS in small financial institutions.

2.7 Research Gaps

Information Systems have become part of the function of many financial organizations today. Like many businesses, a number of organizations rely heavily on IT infrastructure in their management. However, MIS is still a relatively young technology especially to small scale organizations. Besides the notable exception of operational information system, little empirical research exists on the application of MIS in the management of these organizations. There is generally lack of concern for the improvement (Argyr's, 2005).

Mugambi (2011) studied factors influencing implementation of Integrated Financial Management Information System software using the Kenya Institute of Education as a case study. He found that effective training of technical staff and end users was effective although user manuals were not provided. However the training was not holistic. There was minimal resistance to change as staff had been sensitized on the need for the new system. A core team had been identified to

oversee implementation of IFMIS and senior management was fully committed to see the system succeed. However planning for the IFMIS implementation was not effective. There were no plans and evidence of their approvals by senior management. The project did not have a project manager and implementation was done by the supplier/contractor. All indications were that the project was delayed. Kwena (2013) addressed the characteristic challenges that users of the IFMIS face by investigating factors that influence use of IFMIS in government ministries. The study established that use of the IFMIS is affected largely by sabotage and resistance. The study also established that management support is lacking and top management does not inspire the user. The capacity and technical knowhow was found to be low due to lack of training and the hurried implementation of the system. The study recommended that the government employs a change agent to oversee the implementation of the IFMIS and that the users of the system to undergo on the job training, in order to improve their skills and capabilities to use the system.

The study did not provide for the establishment of the project cost. The availability of funding by treasury, a standard chart of accounts, the legal and regulatory framework, and ICT infrastructure were catalytic in the implementation of the System at the Institute. No attempt was made at establishing whether the implemented system had achieved the aims for which it was initiated. Based on the results, it is possible to conclude that the implementation of IFMIS was successful although room exists to improve the process further. Recommendations for improvement include going in for an off-the -shelf solution because they are cheap, undertaking re-engineering of processes to realign them to suit IFMIS package, and offering of comprehensive training before introducing the new system. The study further recommends that a study be carried out to establish whether IFIMIS has been able to achieve for governments or their agencies the much hoped for financial management reforms.

A study by Jarral *et. Al*, (2011) regarding MIS implementation established that, MIS implementation involves a complex transition from legacy information systems and business processes to an integrated IT infra-structure and common business process throughout the organization. The study involved developed corporate firms in developed countries. There is need to carry out the same study in smaller, growing firms specifically financial ones to establish how MIS implementation is affected by lack of adequate infrastructure.

Review of literature has shown that certain legal environment may hinder effective implementation of MIS organizations. Although ICT related regulation are meant to support the functioning of organizations, it may be may pose some challenge to small organizations.

Review of literature showed that there are a dozens of studies that have been conducted in the field of the factors affecting MIS implementation in organizations (Kenneth, 2009, Laudon, 2010, Hsu, 2005, Beaumaste, 2005 & Rodrigues, 2010). From the literature reviewed, these factors (training, cost, infrastructure and regulatory environment) were found to be directly or indirectly influencing MIS implementations in organizations. Most of the studies some used only questionnaires method and lacked triangulation. In general, the reviewed studies are wide in scope, having considered various organizations from international perspective.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design and methodology used in this study and also provides general framework for this research. The chapter presents details of the research design, target population (institutions), sample and sampling procedure, description of the research instruments, data collection procedure, data analysis techniques and ethical considerations made by the researcher in conducting the study.

3.2 Research Design

A study design is the plan of action the researcher adopts for answering the research questions. Ogula (2005) further explains that research design is a structure and strategy of investigation to obtain answers to research questions and control variance. Research design sets up the frame work for study and is the blueprint of the researcher (Kerlinger, 2005). This study adopted a survey research design. A survey research design was used since the study collected data from different organizations within Nairobi. This design that was descriptive survey in nature assisted the researcher in collecting data from respondents based in different organizations as well as in estimating population parameters. The design was also appropriate in collecting data from a big sample. The sample consisted of internal staff of the sampled financial cooperatives in Nairobi and the senior managers.

3.3 Target Population

A population is any group of institutions, people or objects that have common characteristics. According to Gall *et. al,* (2010), a target population provides a solid foundation and first step upon which to build population validity of the study.

Barton (2011) further observes that any scientific research targets a given population through which questionnaires or interview guides are distributed so as to get the desired or the required data for analysis. In this case, the target population for this study consisted of all the financial cooperatives in Nairobi area (n=52), the support staff members (n=1040) and senior staff members (n=52). In total, the target population was one thousand and ninety two (N=1092). This population was expected to provide information that assisted in answering the research problems.

3.4 Sample Size and Sampling Technique

A sample is a smaller group or sub-group obtained from the accessible population (Mugenda & Mugenda, 2003). This subgroup is carefully selected to be representative of the whole population with the relevant characteristics. Each member or case in the sample is referred to as subject, respondent or interviewees. Sampling is a procedure, process or technique of choosing a sub-group from a population to participate in the study Ogula (2005). It is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected.

Table 3. 1: A Sample Size

Cadres of Staff	**Population Estimate**	**Sample Size (10)**
Support Staff Members	104	104
Senior Staff Members	52	5
ICT Experts	25	15
Total	**1117**	**124**

(Source; Field Survey, 2014)

This study used simple random sampling procedure to obtain the sample of respondents from the selected organizations. In total, the sample of this study included 5 financial cooperatives, five senior managers in these organizations and one hundred and four (104) support staff members in the organization.

3.4.1 Sampling Financial Cooperatives

There are fifty two (52) financial cooperatives enlisted as members in Nairobi Association of financial Cooperatives. The study used simple random sampling technique from the list to select 10% of the organizations. This translates to five (5) organizations. According to Mugenda and Mugenda (2003), at least 10% of the total population is held to be representative.

3.4.2 Sampling of Support Staff

It was thought that for a correct and true reflection of these research findings, triangulation was the best approach to go by. This was because the management was thought to be tied to give only the positive sides and progresses of their organizations. Therefore, internal employees especially those placed at the human resource level and IT departments were also targeted to give their views on the issues facing implementation process. Being taken that there are at one thousand and forty support staff members in all the financial cooperative institutions in Nairobi, simple random sampling technique was used to select at least 10% of the all the support staff members. This translates to one hundred and four (104) staff members out of one thousand and forty (1040) being selected.

3.4.3 Sampling Senior Management Staff

All the senior management staff of the selected organizations was purposively selected to participate in the study. This was because the management staffs were familiar with the implementation process of MIS in their respective organizations. Purposive sampling technique allowed a researcher to use cases that have the required information in respect to the objectives of the study (Mugenda & Mugenda, 2003).

3.4.4 Sampling ICT Experts

ICT Experts were also targeted to give their views on the issues facing implementation process. Being taken that there are at fifty two ICT experts in all the financial cooperative institutions in Nairobi, simple random sampling technique was used to select at least 10% of the all the ICT experts. This translates to fifteen ICT experts out of twenty five being selected.

3.5 Data Collection Methods

All the information that was used in the study was obtained from primary sources. This included designing a simple structured questionnaire with which the randomly selected respondents were required to fill for data collection. In cases where the respondent is available, a personal interview was conducted so that more information in greater depth was obtained. Simple and direct unstructured questions were asked to encourage open responses. The questionnaire was accompanied with a cover letter in which there was a description of the purpose of the study and a text that explains how the results will is of benefits to the individual and the organization as well.

3.5.1 Questionnaire for Support Staff

Questionnaires were used in this study to collect data from the support staff members. The questionnaires, were used for the following reasons: a) reached a large number of respondents within a short time, b) gave the respondents adequate time to respond to the items, c) offered a sense of security (confidentiality) to the respondents, and d) tended to be objective since no bias resulting from the personal characteristics (as in interview).

The questionnaires were sub-divided into a number of sub-sections based on the major research objectives except the first sub-section (section A) that was meant to capture the demographic characteristics of the participants like sex, age, working experience, and level of education. Other sections covered the following factors:

training factor, cost factor, infrastructure and legal environment factors effecting on implementation of MIS.

3.6 Pilot Test

The piloting was done to test whether: the aim of the study was achieved, if there was any ambiguity in any item, if the instrument elicited the type of data anticipated, and also to indicate whether the research objectives were appropriately addressed thus enhancing reliability and validity. The instruments were piloted with two (2) micro-financial institutions in Nairobi which was not part of the sample. Both management and support staff were targeted in the pilot test. The participants were encouraged to make comments and suggestions concerning the instructions in the questionnaires, clarity of the questions and relevancy of the questions to ensure the reliability of the instruments. The piloted instruments were adopted for the study. The researcher was able to check the clarity of questionnaires, eliminated any ambiguity and identified redundant questions which helped the researcher to make some adjustments of all the shortcomings and came up with the best solutions and eliminated them.

3.7 Data and Analysis and Presentation

Before the actual data analysis, the researcher edited and coded the raw data to free it from inconsistencies and incompleteness, misclassification and gaps in the information obtained from the respondents. The validated process determined the respondent rate of questionnaires. The data collected through the use of questionnaires from the support staff members was analyzed quantitatively. This approach of data analysis mainly involved the use of descriptive analysis. Further, testing hypothesis to establish the significance of strength of the association of the two dependent variables was done by use of chi-square. Indeed, the collected data was analyzed using multiple linear regression to determine the relationship between dependent variable and predictors (Infrastructure, Regulation, Training, and Cost of MIS). The data collected from the questionnaires was coded and

logged in the computer system using Statistical Package for Social Science (SPSS) and Micro soft excel. It was then later that descriptive analysis such as frequencies and percentages were used to present the already coded quantitative data in form of tables and graphs based on the major research questions.

In this case, the following model will be used to measure the relationship between the dependent variable and independent variables.

Research Model

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$$

Where

Y = Effective implementation of MIS

a= Constant

X_1= Management information systems training

X_2= Management information systems costs

X_3= Management information systems Regulation

X_4= Management information systems infrastructure

e= Random error term

Personnel Training(X_1): Since much of the information systems involve the application of ICT knowledge, personnel who have no or poor training in that line would not be very effective in implementing the same. Hence training and re-skilling managers and other administrators in ICT facilities are paramount for an effective MIS application. MIS training was measured by computing the mean of all the responses comprising (MIS training on upgrading skills, on job training and refresher courses) where No=0 and Yes=1.

Cost factor (X_2): Other people or organizations especially smaller ones would not afford the cost of acquiring, installing and maintaining ICT equipments. Others would prefer low cost equipments which might be less efficient in information transmission and acquisition. If the cost of acquiring and maintaining the facilities would go down, then it would boost MIS implementation in organizations

especially smaller ones. Cost variable was measured by computing the mean of the responses (1-Not Applicable; 2- Very Low; 3- Low; 4- High; 5 – Very High in linker scale) for all the aspect listed in the questionnaire.

Regulatory environment(X_3): The organization's management or government policy in regard to the use of certain MIS systems in certain areas can also hinder the effective implementation of MIS. For instance, the Kenya communication commission requires records of all communication of individuals in their systems. Thus, this study conceptualizes that certain legal provisions may hinder effective implementation of MIS in small financial institutions. Regulatory environment was measured by computing the mean of the responses (1-Not Applicable; 2- Very Low; 3- Low; 4- High; 5 – Very High in linker scale) on competence for all the components listed in the questionnaire.

Infrastructure(X_4): These pertains physical and system infrastructure. Without such, it would be difficult for organizations to effectively implement MIS. Infrastructure was measured by computing the mean of the number of ICT tools/ resources needed and available.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter analyses the data that was collected and offers the interpretation of the results from the findings collected from the sampled respondents. The purpose of this study was to examine the factors affecting the implementation of MIS in small scale financial cooperatives in Kenya.

4.2 Response Rate

A total of 124 questionnaires were distributed to the selected respondents in Nairobi County. A total of 120 questionnaires were duly filled and collected making a 96.8% response rate. This was an acceptable rate and could be attributed to the fact that the questionnaires were physically dropped to the respondents and collected at an agreed date. The response rate was as follows;

Table 4. 1: Response Rate

Cadres of Staff	Targeted Sample Size	Response Rate	% Response Rate
Support Staff Members	104	100	94.3
Senior Staff Members	5	5	100
ICT Experts	15	15	100
Total	**124**	**120**	**96.8**

n= 120

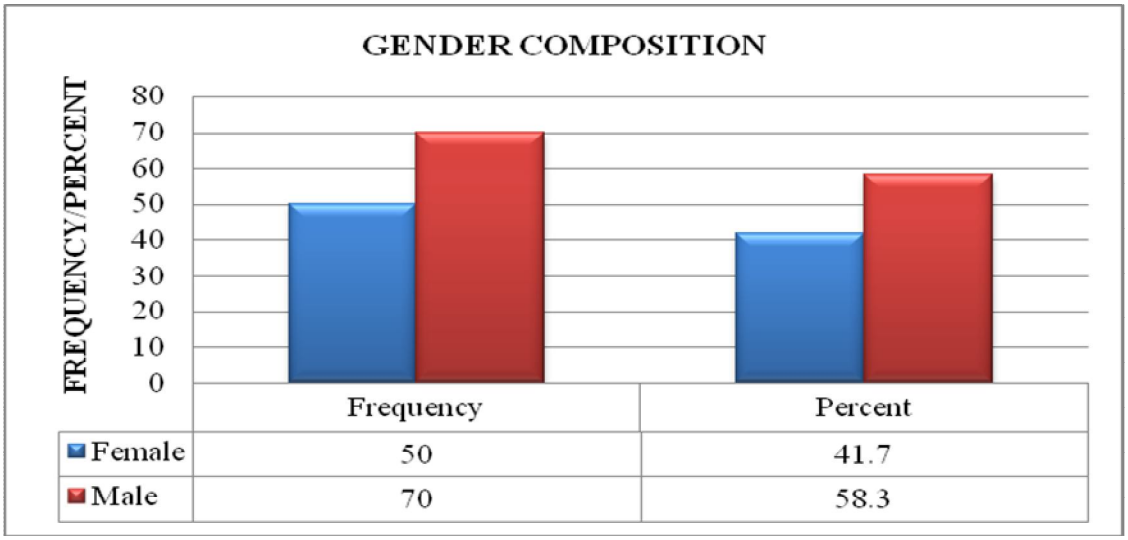
(Source; Field Survey, 2014)

4.3 General Information

This section provides results and discussions of the findings according to the respondents within Nairobi County.

4.3.1 Gender Composition

The sought to establish the gender of the respondents and the finding are as shown in figure 4.1.



(Source; Field Survey, 2014)

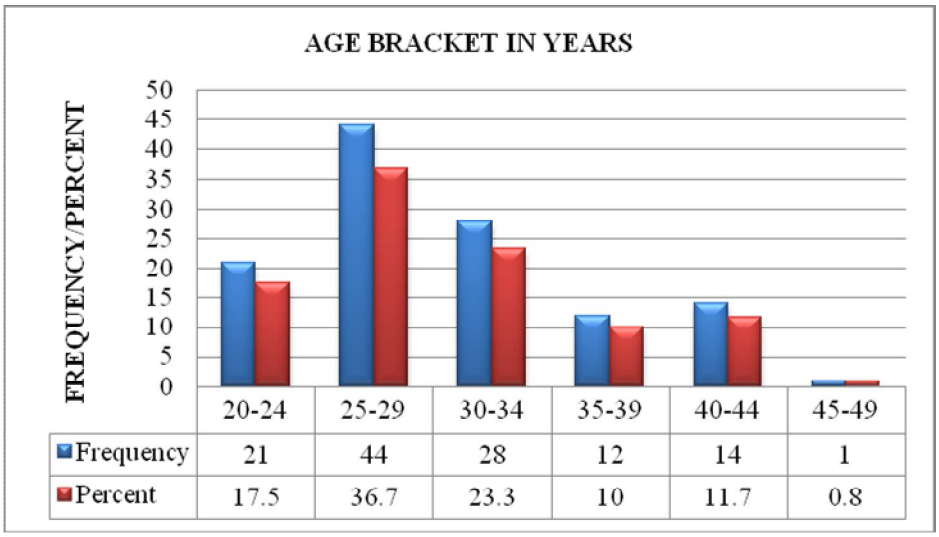
Figure 4. 1: Gender Composition

This analysis indicate that majority of the respondents, 58.3% were males while 41.7% were females. It was noted that more that 30% of the respondents were female staff in the financial cooperatives in Nairobi. This is in line with Kenya constitution requirement.

4.3.2 Age

The study sought to establish the age bracket of the respondents and the responses are provided in figure 4.2. According to the evidence collected, it was found that, 36.7% of the respondents aged between 25-29 years. This was followed by 23.3%

of the respondents who were aged between 30-34 years. More importantly, 77.5% of the total sample, comprise of youth who are below 35 years.



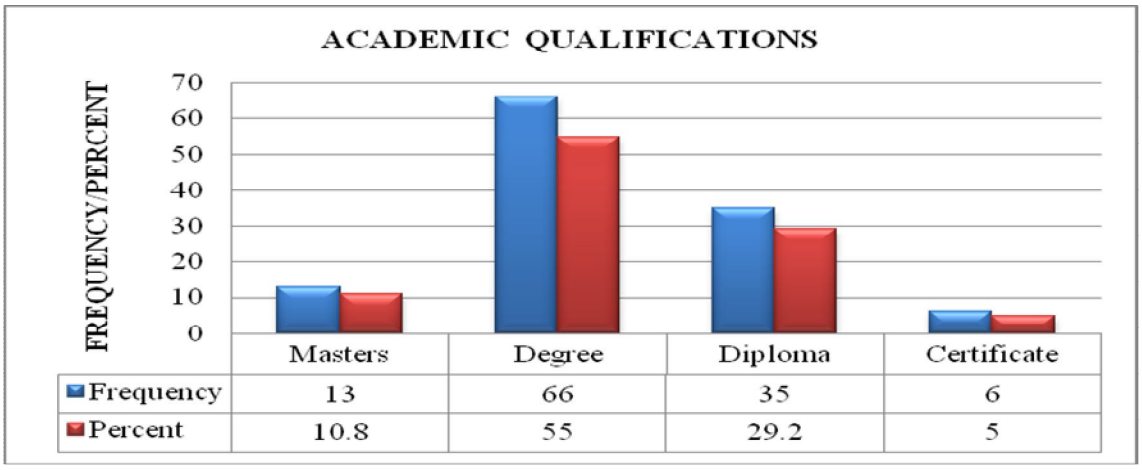
(Source; Field Survey, 2014)

Figure 4. 2: Age

This analysis suggest that, majority of the financial cooperatives have engaged young men and women in order to target the population whose majority are youth below 35 years. This could increase the market share and capital base of the financial cooperatives that are operating in stiff financial market. Finally, since most of the companies are embracing application of ICT, it was important for the financial cooperatives to involve ICT compliance generation for competitive advantage.

4.3.3 Highest Level of Academic Qualification

In business academic qualification is very important, thus the study sought to find out the highest level of academic qualifications of the respondents and results are as shown in the figure 4.3.



(Source; Field Survey, 2014)

Figure 4. 3: Academic Qualifications

Figure 4.3 indicated that, majority of the respondents, 55 had bachelor degree qualifications and only 10.8% had master qualifications. In general, 65.8% of the respondents had degree and masters qualifications. The rest of the respondents had diploma/certificate qualifications. Since the financial market is very competitive in Kenya, this could be the reason why majority of the staff were university graduates. In addition, the nature of financial cooperatives requires staff with ICT skills and ideas to meet the current market. This is while provided by university graduates as is the case in this study.

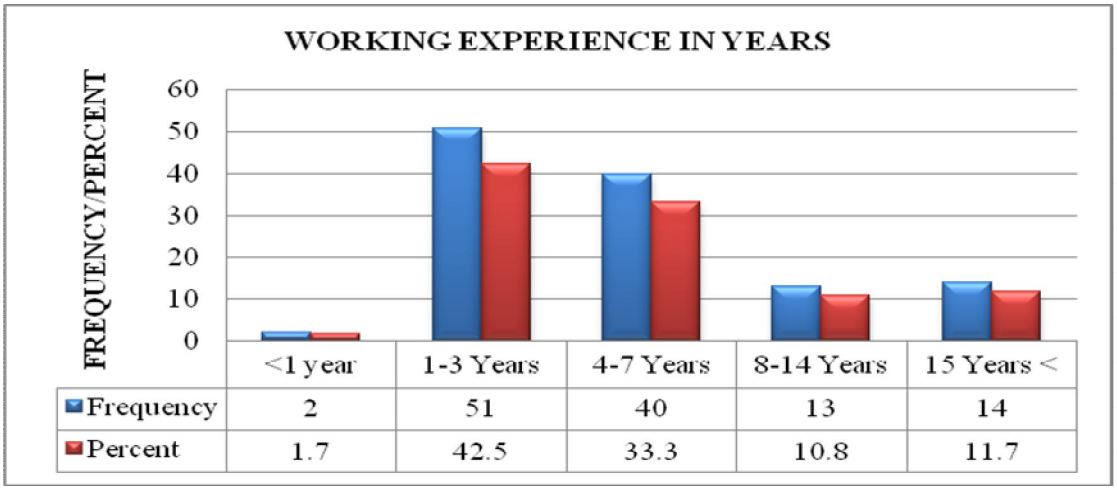
4.3.4 Highest Level of Professional Qualification

The study found that, apart from the academic qualification 94(78.3%) staff had various professional qualifications such as CPA, CCNA, ACCA among others. It was found that, 34(28.3%) and 17(14.2%) of the respondents had CPA and CCNA professional qualifications. Other respondents with various professional qualifications are shown in appendix II.

4.3.5 Working Experience in Years

The respondents were requested to indicate their working experience in years and the findings were grouped as shown in the following categories in figure 4.4. The study found that, 51(42.5%) of the respondents had a working experience of 1-3

years whereas 40(33.3%) had 4-7 years. Indeed, 28(22.5%) of the respondents had more than 7 years working experience.



	<1 year	1-3 Years	4-7 Years	8-14 Years	15 Years <
Frequency	2	51	40	13	14
Percent	1.7	42.5	33.3	10.8	11.7

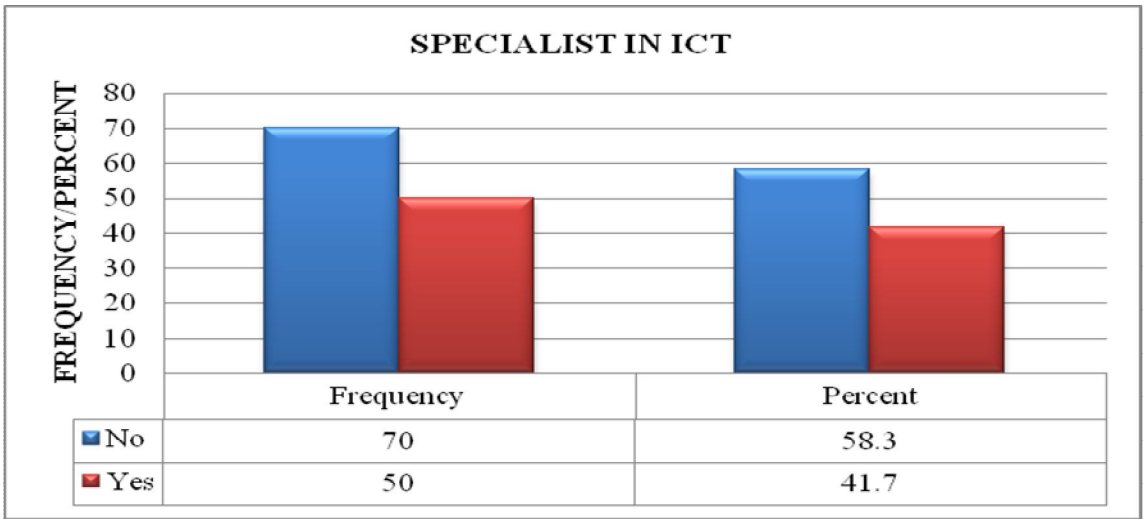
(Source; Field Survey, 2014)

Figure 4. 4: Working Experience in Years

This result implies that majority of financial cooperatives were operated by staff with less than 8 years working experience. However, it was noted that, majority of the managers and senior staff had a working experience of more than 7 years. This suggests that experience will be passed on to the youthful staff for future growth of financial cooperatives in Kenya. Since majority of the respondents were youth and university graduate, could be the reason why they have few years of working experience. The study found that majority of the financial cooperatives was not well established, thus inadequate capital to engage many experienced staff.

4.3.6 Specialized in ICT

The study found that majority of the respondents 70(58.3%) did not specialized in ICT in the education. However, 50(41.7%) of the respondents, specialized in ICT as shown in figure 4.5.



(Source; Field Survey, 2014)

Figure 4. 5: Respondents Specialist in ICT

This analysis suggests that there exist a good number of staff with ICT skills to operate and support management information systems. However, majority of respondents who are not ICT specialist need to be equipped with ICT skills for ease operations of management information systems.

4.3.7 Number of days the Respondents received the On-job Training on ICT

The research sought to determine whether the respondents have ever received any on-job training on ICT and if yes for how many days it was provided. The study revealed that, 93(77.5%) of the respondents had received on-job training for a period ranging from 1 to1460 days. Majority of the respondents, 20(17%) have received on-job training for a period of 7 days. Only, 6 and 2 respondents had received on-job training for a period of one day and 1460 days respectively. See appendix III.

4.3.8 Number of times the Respondents attended Refresher Course on ICT

The study sought to determine whether the respondents have ever attended a refresher course on ICT financed by their institution and if yes, how many times respondents attended. The study revealed that, 61(50.8%) of the respondents had attended refresher course for a range of 1 to 4 times. The study found that,

23(19.2%) of the respondents have attended refresher course, 2 times. In general, 35.8% of the respondents have attended refresher course for more than 1 time.

Table 4. 2: Number of times the Respondents attended Refresher Course on ICT

Frequency	Yes	(%)
1	18	18(15.0%)
2	23	23(19.2%)
3	10	10(8.30%)
4	10	10(8.30%)
Total	**61**	**61(50.8%)**

(Source; Field Survey, 2014)

This analysis suggests that, 49.2% of the respondents require refresher course on ICT skills. This will improve operations in management information systems. In the further research, the study found that, 50.8% of the respondents who attended refresh course were trained in the following MIS areas; Importance of MIS, data entry, data recovery, Integrity, data backup and confidentiality, microwave radio and wireless security, Integration, audit trail, fraud detection, business application software, System security, installation and diagnostics, use of ICT in finance, Microsoft office and database management. Other MIS areas includes; Using ASMAS operating systems, Sacco solution software, internet, System administration, mobile banking, ERP system and ATM operations as well as cards system management and truce mobile application, hardware and system maintenance. See appendix IV.

However, 66.7% of the respondents suggest other MIS areas to be trained on. This includes; financial analyst, Programming and system analysis, Performance pearls and Branch GL import, networking and trouble shooting, system audit and cloud computing, Adobe page maker, credit management of data/loan/defaulters via CRB, Quick books and software maintenance. See appendix V.

4.4 Training Factor and MIS Implementation

The study sought to find out whether training on Information Communication Technology affects the implementation of management Information Systems in an organization.

4.4.1Training on Updating Skills

The study sought to find out the effects on updating skills of information communication technology affects the implementation of management information system and the results are provided in table 4.3.

Table 4. 3: Training on Updating Skills

Level	No	Yes	Total
0-20%	7.1%	0	2.5%
21-40%	14.3%	15.4%	15.0%
41-60%	57.1%	56.4%	56.7%
61-80%	21.4%	20.5%	20.8%
81-100%	0	7.7%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**
Percent of cases	**42(35%)**	**78(65%)**	**120(100%)**

(Source; Field Survey, 2014)

Table 4.3 shows that majority of the respondents, 78(65%) have updated their skills on ICT where 42(35%) have not. The analysis shows that, out of those respondents who have updated their skills, 7.7% had achieved over 80% implementation status and no implementation status was below 20%. However, the study found that, despite lack of training on updating skills, the respondents have managed to achieve 61-80% with some achieving below 21%. This implies that ICT skills were essential during employment of staff for the implementation of management information systems. Nevertheless, there was very little difference in

terms of MIS implementation status even after updating skills according to the respondents.

In order to establish the significant of training (updating skills) on implementation status, a chi-square test was performed and the results are as shown in table 4.4.

Table 4. 4: Chi-Square Tests

Statistical Tool	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.838	4	0.065

(Source; Field Survey, 2014)

This result implies that ICT training in the financial Cooperatives in Nairobi has no effect on implementation of management information system at 5% significance level. The chi-square results shows that p-value = 0.065 > 0.05. This indicates that an error 6.5% will be made against 5% allowable error. In this case, the researcher fails to reject the null hypothesis and conclude that ICT training has no effects on MIS implementation at 5% significance level according to the given data.

4.4.2 On-Job Training

The study sought to find out the effects of on-job training on the implementation of management information system and the results are provided in table 4.5.

Table 4. 5: On-job Training

Level	**No**	**Yes**	**Total**
0-20%	15.0%	0	2.5%
21-40%	10.0%	16.0%	15.0%
41-60%	40.0%	60.0%	56.7%
61-80%	35.0%	18.0%	20.8%
81-100%	0	6.0%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**

Level	No	Yes	Total
0-20%	15.0%	0	2.5%
21-40%	10.0%	16.0%	15.0%
41-60%	40.0%	60.0%	56.7%
61-80%	35.0%	18.0%	20.8%
81-100%	0	6.0%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**
Percent of cases	**100(83.3%)**	**20(13.7%)**	**120(100%)**

(Source; Field Survey, 2014)

The study found that, 100 or 83.3% of the respondents have undertaken on-job training while 20(13.7%) had not. Out of the 100 respondents who have undertaken on-job training, 6% have recorded over 80% implementation status and majority of the respondents 60% stated an implementation status of 41-60%. Indeed, on-job training was essential for the effective implementation of MIS in an organization.

In order to establish the significant of training (on-job training) on implementation status, a chi-square test was performed and the results are as shown in table 4.6.

Table 4. 6: Chi-Square Tests

Statistical Tool	Value	Df	Asymp. Sig.(2-sided)
Pearson Chi-Square	20.088	4	0.000

(Source; Field Survey, 2014)

This result implies that ICT training (on-job training) has effect on effective implementation of management information system at 5% significance Level. The chi-square results shows that P-value = 0.0 < 0.05 thus no error made in the case. Therefore, the study rejects the null hypothesis and concludes that on-job training has significant effects on MIS implementation at 5% significance level according to the given information.

4.4.3 Skills

It was important to find out the effect of refresher courses on effective implementation of management information systems and the findings are stipulated in table 4.7.

Table 4. 7: Skills

Level	No	Yes	Total
0-20%	5.8%	0	2.5%
21-40%	21.2%	10.3%	15.0%
41-60%	51.9%	60.3%	56.7%
61-80%	17.3%	23.5%	20.8%
81-100%	3.8%	5.9%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**
Percent of cases	**68(56.7%)**	**52(43.3%)**	**120(100%)**

(Source; Field Survey, 2014)

The study found that, 68(56.7%) of the respondents have undertaken refresher courses whereas 52(43.3%) have not. The result shows that, undertaking refresher courses had no effect on effective implementation of management information systems. More importantly, the chi-square test result in table 4.8 indicates that an error of 11.6% will be made against 5% allowable error.

Table 4. 8: Chi-Square Tests

Statistical Tool	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.396	4	.116

(Source; Field Survey, 2014)

In this case, the study fails to reject the null hypothesis and concludes that refresher courses have no effects on MIS implementation at 5% significance level according to the information given.

In general, the study found that, 92 or 76.7% of the respondents said that training has improved the implementation of management information system and the reasons given are as shown in the table below.

Table 4. 9: Training has improved the implementation of MIS

Reason	No	Yes	Total
Most of us are able to interact with the system	0	19	19
Objective not achieved due to lack of vigilance	2	0	2
Has brought exposure and competence to both ICT staff and non ICT staff	0	5	5
Fast and efficient in updating MPAs and members ledger	0	9	9
Not attended any plan's on stage	1	0	1
We are more educated to handle things and equipped	0	8	8
After on-job training am able to use application software thus delivery to customers faster	0	9	9
Better understanding and higher utilization of MIS	0	11	11
Efficient in usage	0	6	6
Skills and knowledge gain	0	14	14
Users can serve members/clients easily	0	7	7
The providers have been able to identify problem areas for rectification	0	2	2
Total	**3**	**92**	**93**

(Source; Field Survey, 2014)

About, 15.8% of the respondents said that training has improved implementation of MIS since most of them are able to interact with the system. The respondents gave other varying reasons on the same as shown in the same table. This includes; MIS brought exposure and competence to both ICT and non ICT staff, Fast and efficient in updating MPAs and members ledger, better understanding and higher utilization of MIS, Efficient in use, skills and knowledge gain and ease of serving members/clients, among others. However, 2 respondents said that training has not improved MIS since objectives were not achieved due to lack of vigilance.

4.5 Cost Factor in MIS Implementation

In this section the research sought to establish the effect of cost on the implementation of Management Information System and the finding are provided in table 4.10.

Table 4. 10: Cost and Implementation of Management Information Systems

Level	Very low	Low	High	Very high	Total
0-20%	0	0	3	0	3
21-40%	2	10	6	0	18
41-60%	2	18	48	0	68
61-80%	0	6	16	3	25
81-100%	0	2	2	2	6
Total	**4**	**36**	**75**	**5**	**120**

(Source; Field Survey, 2014)

This analysis indicates that, there exist an association between cost factor and effective implementation of MIS. For instance, it was found that, 4 out of 120 respondents cited high cost, affects effective implementation of MIS thus achieving between 0-40percent. Indeed, 5 out of 120 respondents said that cost factor was not applicable, thus implementation status was above 61%. This implies that, high cost of ICT systems and installation affects implementation of MIS in a

significant way. The research further tested the significance of the association between cost factor and MIS implementation. A chi-square test was conducted and the analyses are as shown in the table 4.11.

Table 4. 11: Chi-Square test

Statistical Tool	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.157	12	.001

(Source; Field Survey, 2014)

A chi-square test between the cost factor and MIS implementation was significant at 5% significant level. The results indicate that an error of 0.1% will be made against 5% allowable error. Thus the results are highly statistically significant at 5% significance level. In this case, the study rejects the null hypothesis and concludes that cost factor has effects on effective implementation of Management Information System at 5% significance level according to the given information.

4.6 The Regulatory Environment and MIS Implementation

The research sought to find out how regulatory environment affects the implementation of Management Information System in the Financial Cooperatives. The results below shows that the association between regulations and implementation of MIS.

Table 4. 12: Regulations and Implementation of Management Information Systems

Level	Not applicable	Very low	Low	High	Very high	
0-20%	0	0	0	3	0	3
21-40%	0	0	7	11	0	18
41-60%	0	4	14	32	13	63
61-80%	0	2	8	14	0	24
81-100%	2	0	2	2	0	6
Total	2	6	31	62	13	114

(Source; Field Survey, 2014)

Table 4.12 indicates that, in an organization where regulations are not applicable, implementation status of MIS was almost 100%. Most importantly, majority of the respondents, 62 out of 114 cited regulations as high where the implementation status

achieved was, 41-60% by 32 respondents. The rest of the respondents gave various percentages of implementation level of MIS. In conclusion moderate regulatory environment is essential for the implementation of MIS in an organization.

In order to establish the significant of regulations on implementation status, a chi-square test was performed and the results are as shown in table 4.13.

Table 4. 13: Chi-Square test

Statistical Tool	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.230	16	.000

(Source; Field Survey, 2014)

A chi-square test between the regulations and MIS implementation was significant at 5% significant level. The results indicate that no error will be made in such a case. Thus the results are highly statistically significant at 5% significance level. In this case, the study rejects the null hypothesis and concludes that regulations have effects on implementation of Management Information System in an organization at 5% significance level according to the given information.

4.6.1 The number trained on how to use MIS Regulations

It was important to establish whether the respondents were trained on how to use MIS regulations and in case how many times they were trained and the results are as shown in table 4.14. This results show that only 67(55.8%) of the respondent were trained. About, 22(18.3%) of the respondents were trained 4 times and 26(21.7%) were trained 2 times. This suggests that the need for the respondents to be trained on MIS regulations for the successful implementation of MIS in the financial cooperatives.

Table 4. 14: Number of times the Respondents were trained on how to use MIS Regulations

Frequency	Yes	Frequency (%)
1	8	8(6.4 %.)
2	26	26(21.7%)
3	11	11(9.4%)
4	22	22(18.3%)
Total	67	67(55.8%)

(Source; Field Survey, 2014)

Since about 53(44.2%) of the respondents were not trained on regulations, the study suggests a training to be organized by the management on MIS regulations. This will improve implementation of the MIS in the financial cooperatives. Indeed, the financial cooperatives will operate on favorable regulatory environment hence effective implementation of the MIS. *Appendix VI* shows the number of the respondents trained on various regulatory components.

4.6.2 MIS Regulations Components the Respondents would like to be trained on

The study found that, majority of the respondents, 25(20.83%) would like to be trained on relational data base systems. In additional, 15.83%, 14.17%, 10% and 9.17% of the respondents would like to be trained on audit trial report, data recovery, user logs and adequate security respectively. In the view of the researcher this regulatory components seemed essential in the implementation of MIS in the financial cooperatives. Others that were mention are tabulated in appendix VII.

4.6.3 MIS Regulations Components that are in use by Financial Cooperatives

This research revealed that, more than 70% of the respondents said that the following MIS regulations components were in use in the financial cooperatives. This includes; audit trail report, integration of the operations, data recovery,

relational data base management, adequate security, Capacity for future expansion, user logs and real time. Table 4.15 shows the percentage of the respondents that mentioned each of the MIS regulatory components mentioned above.

Table 4. 15: MIS Regulatory Components in use by the Financial Cooperatives

Components	Yes	No	Yes	No
Audit trail report	107	12	89.2	10.0
Integration of the operations	93	26	77.5	21.7
Data recovery	109	10	90.8	8.3
Relational data base management	88	31	73.3	25.8
Adequate security	103	16	85.8	13.3
Capacity for future expansion	87	32	72.5	26.7
User logs	104	15	86.7	12.5
Real time	86	33	71.7	27.5
Others (Data entry, SMS Alert and Messaging systems, money transfer)	6	109	5.1	94.9

(Source; Field Survey, 2014)

The effect of ICT Infrastructure and MIS Implementation

The research sought to find out the effects of ICT infrastructure on the implementation of Management Information System in the Financial Cooperatives in Nairobi. The result below shows that the association between ICT infrastructure and MIS implementation was significant.

Table 4. 16: Infrastructure and Implementation of MIS

Implementation	Inadequate	Adequate	Total
0-20%	3.6%	0	2.8%
21-40%	13.3%	15.4%	13.8%

41-60%	57.8%	61.5%	58.7%
61-80%	22.9%	7.7%	19.3%
81-100%	2.4%	15.4%	5.5%
Total	**100.0%**	**100.0%**	**100.0%**
Percent of cases	**109(90.8%)**	**11(9.2%)**	**120(100%)**

(Source; Field Survey, 2014)

The analysis shows that a total of 109(90.8%) of the respondents, responded on the question on number of functional ICT resources available. About 83 out of 109 respondents said that, technology and infrastructure were inadequate whereas 26 respondents cited adequate resources. Indeed, out of 26 respondents with adequate resources, 15.4% of respondents said that implementation of MIS was between 81-100%. More importantly, with adequate ICT resources, implementation of MIS was not less than 21% and vice versa.

The study found that, there exist a slight significant between ICT infrastructure and implementation of MIS. About, 57.8% of the respondents who mentioned inadequate infrastructure had opinion that implementation level of MIS was between 41-60%. Since the result indicates that, even with inadequate infrastructure, it was possible to achieve 100% implementation level. This was due to availability of qualified staff and effective management of available resources. Table 4.17 shows the results of chi-square test performed between infrastructure available and level of implementation of MIS.

Table 4. 17: Chi-Square test

Statistical Tool	Value	df	Asymp. Sig. (2-sided)

Pearson Chi-Square	9.480	4	.050

(Source; Field Survey, 2014)

This result implies that ICT infrastructure in an organization has slight effect on implementation of management information system at 5% significance level. The chi-square results shows that p-value = 0.05. This indicates that an error 5% will be made against 5% allowable error. In this case, the researcher rejects the null hypothesis and concludes that ICT infrastructure has slight effects on MIS implementation at 5% significance level. This results shows that, the association was marginally significant at 5% significance level.

According to the respondents, 69 or 57.5% said that infrastructure has improved or worsen the implementation of management information system and the reasons given are as shown in the table below. About, 13 or 10.8% of the respondents said that implementation of management information system has made work easier. Nevertheless, some of the respondents are of the opinion that implementation of management information system has affected earlier accustomed organization of the system and performance is poor.

As evident in table 4.18, majority of the respondents are of the opinion that, infrastructure has improved implementation of management information system in the sense that efficiency and neatness has been improved and reduced paper work, access of resources e.g. balances and funds, fewer people are involved hence accuracy as well as interaction with other staff has improved, reliable internet and mobile banking services and information and technology has been closer to end users through availability and reliable system.

Table 4. 18: Infrastructure has improved or worsens the Implementation of MIS

Reason	No	Yes	Total
We are able to communicate with our clients through mobile phone	0	8	8
It has worsened for it so poor	2	0	2
Information and technology has been closer to end users through availability and reliability	0	3	3
Fewer people involved hence accuracy	0	2	2
Makes work easier	0	13	13
Illiteracy	0	1	1
To interact with other staff	0	6	6
It affects earlier accustomed organization of the system	2	0	2
Availing the necessary resources to requesting users within the organization	0	1	1
All components required have been installed thus increasing efficiency	0	2	2
Faster internet	0	6	6
We have reliable internet and mobile banking	0	7	7
Access of data	0	2	2
Has improved efficiency of operations	0	8	8
It has improved since transactions are real time and some require connectivity with outside world	0	2	2
New hardware/software are easily compatible with the available system	0	2	2
Access of resources e.g. balances, funds	0	4	4
Efficiency and neatness has been improved and reduced paper work	0	2	2
Total	**4**	**69**	**73**

(Source; Field Survey, 2014)

Implementation Level of Management Information Systems

Respondents were asked to indicate the extent at which level of MIS implementation has been achieved in their organization and the findings are as shown in table 4.19. This would enlighten the researcher on the perceived level of MIS implementation.

Table 4. 19: Implementation Level of Management Information Systems

Level	Frequency	Percent	Cumulative Percent
0-20%	3	2.5	2.5
21-40%	18	15.0	17.5
41-60%	68	56.7	74.2
61-80%	25	20.8	95.0
81-100%	6	5.0	100.0
Total	120	100.0	

(Source; Field Survey, 2014)

The study found that, majority of the respondents, 56.7% indicated that MIS implementation level was between 41-60%. Indeed, 20.8% and 15% of the respondents said that implementation level was about 61-80% and 21-40% respectively. A few of 2.5% of the respondents mentioned implementation level as below 21%. In general, 25.8% of the respondents quoted implementation level of more than 60%. This implies that, there is need for enhancing MIS through training of personnel's, provision of ICT resources and reducing operation cost of MIS.

Implementation and Performance of Management Information Systems

Respondents were asked to indicate what is normally done by their MIS in the last one year. This would enlighten the researcher on whether the performance of MIS was good, average or below average in comparison with Implementation level of the system and the findings are as shown in table 4.20.

Table 4. 20: Implementation and Performance of MIS

Level	below average	average	Good	Total
0-20%	8.6%	0	0	2.5%
21-40%	11.4%	15.6%	17.0%	15.0%
41-60%	42.9%	65.6%	60.4%	56.7%
61-80%	20.0%	18.8%	22.6%	20.8%
81-100%	0	0	100.0%	5.0%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Percent of cases	**35(29.2%)**	**32(26.7%)**	**56(44.2%)**	**120(100%)**

(Source; Field Survey, 2014)

As illustrated in Table 4.20 above, 2.5% of the 120 respondents said that implementation level was between 0-20 percent leading to poor performance. Indeed, 60.4% of the respondents who had 41-60% implementation levels said that performance was good. Most importantly, in a case where 81-100% implementation level was achieved, the performance was described as 100% good. Other analyses are also tabulated in the same table.

Table 4. 21: Chi-square test

Statistical Tool	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.223	8	.002

(Source; Field Survey, 2014)

This result implies that the relationship between performances and how effectively an organization applies management information systems implementation in the selected financial cooperatives in Nairobi are significant at 5% significance level. The chi-square results shows that P-value = 0.002 < 0.05. This indicates that an error 0.2% will be made against 5% allowable error. In this case, the researcher rejects the null hypothesis and concludes there is significant relationship between performance and how effectively an organization applies management information systems at 5% significance level according to the given information.

4.7 Multiple regression analysis

This section provides results and discussions of the multiple regression analysis of the study.

Table 4. 22: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521	.272	.282	.720

(Source; Field Survey, 2014)

Predictors: (Constant), Infrastructure, Regulation, Training, Cost of MIS

Multiple regressions model is statistically insignificant since only 27.2% of the variation can be explained by the predictors listed below the model summary table above. That is coefficient of determination is 0.272. Adjusted R^2 has been adjusted to take into account the sample size and the number of independent variable. The rationale for this stating is that if the number of independent variable, k is large relative to the sample size n, the unadjusted R^2 value may be unrealistically high.

Table 4. 23: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.988	4	4.747	9.151	.000[a]
	Residual	50.838	98	.519		
	Total	69.825	102			

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.988	4	4.747	9.151	.000[a]
	Residual	50.838	98	.519		
	Total	69.825	102			

(Source; Field Survey, 2014)

a. Predictors: (Constant), Infrastructure, Regulation, Training, Cost of MIS

b. Dependent Variable: Implementation of MIS

Table 4.23 shows the results of analysis of variance (ANOVA). The results F = 9.151 > 2.46451 (F (4, 98), right-tail probability = 0.05) implies that most of the variation in the implementation of MIS (Y) is not explained by the regression equation and the model is not useful and vice versa. The rejection region allows us to determine whether (F-statistic) is large enough to justify rejecting the null hypotheses at 5% significance level.

Table 4. 24: Regression Analysis

Coefficients

Model		B	Std. Error	Beta	T	Sig
1	(Constant)	1.594	.		2.725	.008
	Training	.256	.162	.139	1.584	.116
	Cost	.628	.134	.425	4.685	.000
	Regulation	-.368	.092	-.360	-4.018	.000
	Infrastructure	.282	.172	.143	1.644	.103

(Source; Field Survey, 2014)

a. Dependent Variable: Implementation of MIS

The table above shows the result of multiple regression analysis. B denote regression coefficient in the model and **sig** denote significance level in the model. This result shows that there exist a relationship between cost of MIS and implementation of MIS.

The general regression model is given as;

$Y = 1.594 + 0.256X_1 + 0.628X_2 - 0.368X_3 + 0.282X_4$

The result indicates that the association is highly statistically significant at 5% significance level, that is P-value = 0.00 < 0.05. This implies that low cost of ICT systems and wages of ICT staff enhance implementation of MIS and vice versa. In other words, an increase in one unit of cost of MIS, the implementation of MIS will increase by a factor of 0.628. The rejection region allows us to determine whether (t-statistic) is large enough to justify rejecting the null hypotheses. Since t = 4.685 > 1.66 (t [101], right-tail probability = 0.05), the study reject the null hypotheses and conclude that cost of MIS influence the implementation of MIS at 5% significance level.

Likewise, there exist a relationship between regulations of MIS and implementation of MIS. The result indicates that the association is highly statistically significant at 5% significance level, that is P-value = 0.00 < 0.05. This implies that a slight decline in the regulations enhance implementation of MIS in the financial cooperatives in Nairobi. In other words, an increase in one unit of management information regulations, the implementation of MIS will decrease by a factor of 0.368. Since t = 4.018 > 1.667 (t[101], right-tail probability = 0.05), the study reject the null hypotheses and conclude that management information regulations influence the implementation of MIS in the financial cooperatives in Nairobi at 5% significance level.

However, training and infrastructure has no significance association with implementation of MIS in the financial cooperatives in Nairobi at 5% significance level. Since t = 1.584< 1.66 and t = 1.644 < 1667 (t [101], 0.05), the study fails to reject the null hypotheses and conclude that training and infrastructure does not influence the implementation of MIS in the financial cooperatives in Nairobi at 5% significance level according to the given evidence. In the regression model, we note that training and infrastructure are not statistically significant; hence we reject the null hypotheses**.**

In conclusion, on cost factor and regulation can be used to predict the effectiveness of MIS implementation. The model was deemed insufficient to be relied upon in this study.

4.8 Discussion of key Findings

This analysis indicates that, there exist an association between cost factor and effective implementation of MIS. For instance, it was found that, 4 out of 120 respondents cited high cost, affects effective implementation of MIS thus achieving between 0-40percent. Indeed, 5 out of 120 respondents said that cost factor was not applicable, thus implementation status was above 61%. This implies that, high cost of ICT systems and installation affects implementation of MIS in a significant way.

4.8.1 The effect of Training in ICT on the implementation of MIS

Training has been found in some other studies to be critical in effective implementation of MIS. Sumner (2009) conducted a case study on the experiences of seven companies implementing MIS in Europe. The study used an in-depth structured interview with the senior project managers responsible for planning and implementing MIS systems within their respective organizations. The study showed that many firms had learned that investment in training and re-skilling the IT workforce was paramount to MIS effective implementation. Further, the study found that growing internal IT staff members with needed technical skills, particularly in application-specific modules, was a strategy followed by many organizations in Europe.

4.8.2 The effect of cost on the implementation of MIS

A study by White, Pearson, and Wilson,(2006) went on to suggest that MIS implementation in companies has led to several benefits which include lower production cost, higher and faster throughputs, better product quality, reduced inventory costs, and efficient management in the organizations. The studies however targeted big manufacturing companies where there are high transactions levels which need effective MIS. For small organization like financial cooperatives, the situation may be different, thus the need for the current study.

4.8.3 The effect of technology infrastructure on the implementation of MIS

Management Information systems processes recommend best practice for requirements analysis, planning, design, deployment and ongoing operations management and technical support of an ICT infrastructure. The infrastructure management processes such as ICT design and planning, ICT deployment, ICT operations and also ICT technical support are key components for effective implementation of MIS (Warga, 2006). For small organizations, there is need to look into the kind of infrastructure they have, and whether these are adequate for the effective implementation of MIS.

4.8.4 The effect of regulatory environment on the implementation of MIS

There are regulations that require publicly traded companies to assess the effectiveness of their internal controls for financial reporting in annual reports they submit at the end of each fiscal year. Chief information officers are responsible for the security, accuracy and the reliability of the systems that manage and report the financial data (Isaca, 2006). This means that the organizations have to be strict on the type /and accuracy of information, contained or transmitted through their systems.

4.8.5 Other factors discovered on the implementation of MIS

A study by White, Pearson, and Wilson,(2006) went on to suggest that MIS implementation in companies has led to several benefits which include higher and faster throughputs, better product quality, reduced inventory costs, and efficient management in the organizations. The studies however targeted big manufacturing companies where there are high transactions levels which need effective MIS. For small organization like financial cooperatives, the situation may be different, thus the need for the current study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of major findings, conclusions and recommendations of the study. The study was guided by the following objectives: to find out the effects of which Information Communication Technology training affects the implementation of Management information System, to establish the effect of cost on the implementation of Management Information, to find out the effects of technology and infrastructure on the implementation of Management Information System and to find out how regulatory environment affects the implementation of Management Information System in the selected Financial Cooperatives in Nairobi.

5.2 Summary

In general the findings revealed that majority of the respondents indicated that MIS implementation low whereas some of the respondents quoted implementation level was high. This implies that, there is need to enhance MIS through training of personnel's, provision of ICT resources and reducing operation cost of MIS. It was found that, in the cases where implementation level was low, the performance of MIS was poor. Also it was observed that in the cases where implementation level was high, performance of MIS was quite good. The study found that performances and how effectively an organization applies management information systems implementation in an organization were significant. Finally, the study found that only cost factor and regulatory environment significant.

5.3 Conclusion

5.3.1 The effect of Training in ICT on the implementation of MIS

Training in general has improved implementation of MIS since most of the respondents are able to interact with the system. MIS has brought exposure and competence to both ICT and non ICT staff, Fast and efficient in updating MPAs and members ledger, better understanding and higher utilization of MIS and ease of serving members/clients.

5.3.2 The effect of cost on the implementation of MIS

Information Systems implementation is often a high cost and high risk proposition involving social and technical uncertainty. The success of the implementation of various types of MIS differs from one organization to another (Benaroch and Appari, 2010). In this case, the study found that implementation of MIS is expensive. This is because of high cost of ICT systems and installation of MIS.

5.3.3 The effects of technology infrastructure on implementation of MIS

Infrastructure has improved implementation of management information system in the sense that efficiency and neatness has been improved and reduced paper work, access of resources e.g. balances and funds, fewer people are involved hence accuracy as well as interaction with other staff has improved, reliable internet and mobile banking services and information and technology has been closer to end users through availability and reliable system.

5.3.4 The effect of regulatory environment on implementation of MIS

Tough regulations hinder effective implementation of management of information systems in an organization. This is because the organization has to be strict on the type and accuracy of information, contained or transmitted through their systems. The small organization lack capacity of validating the reports released through their systems.

5.4 Recommendations

The researcher wishes to make the following recommendations:

5.4.1 The effect of Training in ICT on the implementation of MIS.

The study recommends vigilance in the management information systems in order to minimize fraud and malpractices associated with MIS.

5.4.2 The effect of cost on the implementation of MIS

The study recommends that low cost of ICT systems and installation enhance effective implementation of MIS in an organization.

5.4.3 The effects of technology infrastructure on implementation of MIS

The study recommends provision of ICT systems by the management in order to improve the performance of MIS in an organization.

5.4.4 The effect of regulatory environment on implementation of MIS

The study recommends favorable regulations for effective implementation of MIS in an organization such as provision of internet bundles at lower price.

5.5 Area for further research

Improvement of factors affecting implementation of MIS gives financial cooperatives a sense of direction that helps in focusing on the desired goals. Hence more study can be done to explore more opportunities in the following area:

The study found that were issues related to lack of adequate training among the staff who used MIS system. A study should be carried to find out the effects of training in the implementation of MIS.

The study further postulated that for small organizations, putting on sophisticated and costly IS systems will lead to unnecessary incurrence of loss .A study may be carried out to investigate the effects of cost on implementation of MIS in an organization.

There is need to carry out a study in smaller, growing firms specifically financial ones to establish how MIS implementation is affected by lack of adequate infrastructure.

Small organizations may lack capacity of validating the reports released through their systems. Therefore a study may be carried out to examine the extent to which organizations adhere to the legal provisions during the implementation of MIS.

REFERENCES

Aceituno, V. (2005). On Information Security Paradigms. *ISSA Journal,* (*24),* 225-229.

Adams, D. A., Nelson, R. R. & Todd, P. A. (2008). Perceived usefulness, ease of use, and usage of information technology: A replication, *MIS Quarterly,* 16, 227–247.

Ajzen, I., Albarracín, D., & Hornik, R. (2007). Prediction and change of health behavior: *Applying the theory of reasoned action approach*. Mahwah, NJ: Lawrence Erlbaum.

Al-Mashari, M. (2005). Enterprise resource planning (ERP) systems: A research agenda, *Industrial Management & Data Systems,* 102(3), 165-170.

Argyris, C. (2005). Management Information Systems: The Challenge to Rationality and Emotionality. *Journal of Management Development*, 31(10), 1046-1057.

Avgereu, N. (2007). Implementing SAP R/3, 2nd *Manning Publications*, Greenwich.

Bagozzi, R.P. & Warshaw, P.R. (2006). Development and test of a theory of technological learning and usage, Human Relations, *Journal of Consumer Research,* 45(7), 660–686.

Bagozzi, R.P. (2007). The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift. *Journal of the Association for Information Systems,* 8, 244–254.

Bakos, J.Y. and Brynjolfsson, E. (2005). Information Technology, Incentives and the Optimal Number of Suppliers. *Journal of Management Information Systems,* 10(2), 37-53.

Barki, H., Rivard, S. & Talbot, J. (2005). Toward an assessment of software development risk. *Journal of Management Information Systems,* 10(2), 203–25.

Baxter, Marianna Kouparitsas, Michael (2005) Determinant of business cycle movement: a robust analysis. Author *A Journal of Monetary Economics,* 52(1), 113-157.

Beaumaster, S. (2005). Information Technology Implementation Issues: An Analysis.
Journal of the Royal statistical society, (16), 296-298.

Benaroch, M. and Appari, A. (2010). "Financial Pricing of Software Development Risks," IEEE Software, 65-73.*international journal of internet and enterprise Management*, 6(4), 297-314.

Best, J.W.,Kahn, J.V.(2005). *Research in Education*. New Jersey: Prentice Hall. New York Columbia University.

Block, R. (2005). *The Politics of Projects*: NJ. Englewood Cliff: Prentice-Hall.

Bwisa, H. (2009). An entrepreneurial approach to use of ICT for the growth of Africa's Cooperative Movement. *Journal of Business Research*, 57.

Byrd, T.A. and Turner, E. D. (2008), An exploratory analysis of the information technology Infrastructure flexibility construct. *Journal of management information system*, 17(1), 167-208.

Caldwell, B. (2009). Client Server: can it be saved? *Information Week*, 584, 36–44.

Cheng, H .H. (2010).*C for Engineers and Scientists*: New York: McGraw-Hill.

Choy, C.S., Yew, W.K.&Lin, B.(2006). Criteria for Measuring Knowledge Management Performance outcomes in organizations. *Industrial Management Data system*, 106(7), 917-936.

Dacovou, C.L. (2007). Inter organizational systems as an uncertainty education strategy: *resource dependence perspective.* 22nd Annual Conference of Administrative Sciences Association of Canada in Halifax.

Davis, F.D. (2006). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly* 13(3), 319–340.

Dhillon, G. (2007). *Principles of Information Systems Security: text and cases*, New York. John Wiley & Sons.

Duncan. N. B. (2009). Capturing flexibility of information technology infrastructure; A study of resource characteristics and their measure, *Journal of management Information System*, 12(2), 37-57.

Easttom, C. (2011*). Computer Security Fundamentals*. New York: Pearson Press.

Ewusi-Mensah, K. (2005). Critical issues in abandoned information systems development projects. *Business Process Management Journal*, 7(5), 374-386.

Fredrick, O. W. (2005). *Surviving Liberalization: The cooperative movement in Kenya.* Geneva*:* ILO.

Gall, M.D., Borg, W.R and Gall, J.P. (2010).*Educational research: an introduction. White plains*, New York: Longman.

Ginzberg, M. I. (2006). Early diagnosis of MIS implementation failure: Promising Results and Unanswered Questions. *Management Science* 27(4), 459–7.

Giunipero,L.,Denslow,D. and EL Tantawy, R. (2005). Purchasing/Supply chain Management Flexibility: Moving to an Entrepreneurial skill Set. *Industrial Marketing Management*, (34), 602- 613.

Gupta, A. (2007). Enterprise resource planning: the emerging organizational value systems, *Industrial Management & Data Systems*, 100(3), 114-118.

Harsh, K.V. and Beard, J.W.(2005). *The appropriate use of computer-based information technologies in organizations: An impression management framework.* Westport: Quorum Books,.

Hendrickson, A. R., Massey, P. D. & Cronan, T. P. (2005). On the test-retest reliability of perceived usefulness and perceived ease of use scales, *MIS Quarterly*, 17, 227–230.

Isaca (2006). CISA Review Manual 2006. *Information Systems Audit and Control Association.* Illinois, USA : Rolling Meadows

Jarrar, Y. (2011). ERP Implementation and Critical Success Factors, the Role and Impact of Business Process Management, *Proceedings of the 2000 IEE International Conference on Management of Innovation and Technology,* Singapore.: IEE

Keil, M. Cule, P.E, Lyytinen, K. and Schmidt, R.C. (2009). *A framework for identifying software project risks.* Communications of the ACM, 41(11). 76-83

Kerlinger, F. (2005). *Foundations of Behavioral Research.* New York, Rinehart and Winston.

Kings, H.V. and Beard, J.W. (2007). *The appropriate use of computer-based information technologies in organizations: Impression Management and Information Technology.*, Westport, CT: Quorum Books

Koivimäki, T., Ristola, A. & Kesti, M. (2008). *The perceptions towards mobile services: An empirical analysis of the role of use facilitators, Personal and Ubiquitous Computing,* 12(1), 67-75.

Kwena, I. F. (2013). *Factors influencing the use of integrated financial management and information systems in public sectors,* 13(14), 35-37.

Laudon, K.C. and Laudon, J.P. (2009). *Management Information Systems: Managing the Digital Firm*. NJ, Prentice Hall.

Lock, R. (2005). *The Politics of Projects Yourdon Press*. NJ Englewood Cliff, Prentice-Hall,

Mazhar, N. (2006). *Technology Acceptance Model.* Karachi University. http://EzineArticles.com.

Mentzas, G. (2007). Implementing an IS strategy: a team approach, Long Range Planning, 30(1). 84-95

Muendo, M. (2013). *Factors affecting management systems in county governments.* (a case study of south Eastern Region: http://ir-library.ku.ac.ke/ir/handle/123456789/6314.

Mugambi, C.K. (2011). *Factors Influencing Implementation of Integrated Financial management Information System Software*: a case study of Kenya Institute of Education.

Mugenda, O. M. and Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches.* Nairobi: Acts Press.

Mwikali, (2006). Information technology and organizational change: Causal structure in theory and research. *Management Science,* 34(5), 583-598.

Mwaniki A.W (2013). *An assessment of the effectiveness of integrated Financial Management System in Public Sector Financial reporting in Kenya:* a case study of Kenya Institute of Education.

Namusonge, G. S. (2005).*The role of Development Financial Institutions in the acquisition of Technological Capabilities by Small and Medium enterprises in Kenya,* 11.

O'Brien, J. (2009). *Management Information Systems – Managing Information Technology in the Internet worked Enterprise.* Boston: Irwin McGraw-Hill.

Ogula, P.A. (2010). *A Guide to Research Proposal and Report Writing*. Nairobi: CUEA Press.

Ouma, S (2010). *Development in Kenya through Cooperatives.* Nairobi: Shirikoni. Publisher.

Pant, S. and Hsu, C. (2005). *Strategic Information Systems Planning:* A Review, Information resources Management Association International Conference, May 21–24, Atlanta.

Ravichandran, T., and Rai (2006). A Total quality management in information systems development*:* Key constructs and relationships. *Journal of Management Information Systems,* 16 (3). 3-35

Sacca Star, (2012), *Cooperatives in Kenya.* Nairobi: Kussco Limited.

Senge, P. (2006). *The Fifth Discipline: The Art of Practice of the Learning Organization.* New York: Currency Doubleday.

Subramanian, G. H. (2005). A replication of perceived usefulness and perceived ease of use measurement. *Decision Sciences,* 25(5/6), 863–873.

(Subramanian G.H.(2005). A replication of perceived usefulness and perceived ease of use. Decision Sciences. *Journal,* 25(5-6), 863-874.

Tiwana, A., and Keil, M., (2007).Functionality Risk in Information Systems Development: An Empirical Investigation, *IEEE Transactions on Engineering Management,* 53, 412-425.

Venkatesh, V.; Bala, H. (2008), Technology Acceptance Model 3 and a Research Agenda on Interventions", *Decision Sciences* 39 (2), 273–315.

Warga, T (2006), *Challenge Facing Public Sector Internal Auditing,* www.theiia.org.

White R.E, Pearson, J N, Wilson, JR, 2006. JIT manufacturing a Survey of implementations in Small and large US. *Management* Science, 45(1), 1-15.

Winer, B.J. (2010).Statistical Principles in Experimental Design. New York: McGraw-Hill

APPENDICES

Appendix I: Questionnaire for Support Staff Members

Dear Respondent,

I am a student at Jomo Kenyatta University for Agriculture and Technology. I have attached herewith a questionnaire designed for the purpose of gathering information in an attempt to find out the factors affecting the implementation of management information system in selected financial cooperatives in Nairobi.

The information is to be used in partial fulfillment for the award of a Master in Information communication Technology Policy and Regulations. Be assured that the information provided herewith will be treated in strict confidence and individual names will not be quoted in the research report and you need not indicate your name on it.

You are therefore requested to be objective and specific when completing the questions. Please answer all questions and thanks you in advance for your cooperation.

Student Name: Irene Wanjiku Munene

Reg No: HD314-0448/09

University: Jomo Kenyatta University of Agriculture and Technology

Address: P.O. Box 62000, Nairobi

Institute of Human Resource Development

Section I: Background Information

1. Please indicate your Sex: [ ] Male [ ] Female

2. Age brackets in years: [ ] 35-39 [ ] 40-44 [ ] 45-49 [ ] 50-54 [ ] 55and above

3. Work experience in years_____

4. Designation_____

5. Highest level of academics qualification:

[ ] PhD [ ] Masters [ ] Degree [ ] Diploma [ ] Certificate [ ] Others

6. Highest level of profession qualification_____

(MCSE, MCSD, CCNA others specify)

7. Did you specialize in ICT in your education? [ ] Yes [ ] No

8. about on-job training and refresher courses;

a. Have ever received any on-job training on ICT? [ ] Yes [ ] No

b. If Yes, for how long? _____

c. Have you ever attended refresher courses on ICT financed by your institution?

[ ] Yes [ ] No

d. If the answer is Yes in (c), how many times?_____

e. If the answer Yes in (c), what areas of MIS were you trained on? _____

f. If the answer is Yes/No in (c), what other areas of MIS would you like to be trained on?_____

Section II

Objection1. Management Information Systems Training

1Have you undertaken any training on the following?

a. Upgrading of skills [ ] Yes [ ] No

b. On job-training [ ] Yes [ ] No

c. Refresher courses [ ] Yes [ ] No

Section III:

Objection2. Management Information Systems Costs

10. Rate the following cost aspects on their effects on application of MIS in your organization (Use a linkert scale of 1 to 5 where: 1-Not Applicable; 2- Very Low; 3- Low; 4- High; 5 – Very High)

Aspect		**Cost**				
		1	2	3	4	5
a)	Acquisition of initial ICT systems					
b)	Installation of initial ICT systems					
c)	Upgrading/modernizing of ICT systems					
d)	Maintenance of ICT systems					
e)	Salaries/Wages of ICT staff					
f)	Returning of ICT staff					

Section IV:

Objection3. Management Information Systems Regulation

11. Rate your competence in the following MIS components (Use a linkert scale of 1 to 5 where: 1-Not Applicable; 2- Very Low; 3- Low; 4- High; 5 – Very High)

Components		**Trained?**	**competence**				
			1	2	3	4	5
a	Audit trail report	[ ] Yes [ ] No					
b	Adequate security	[ ] Yes [ ] No					

c	Integration of the operation	[ ] Yes [ ] No					
d	Capacity for future expansion	[ ] Yes [ ] No					
e	Data recovery	[ ] Yes [ ] No					
f	User logs	[ ] Yes [ ] No					
g	Real Time	[ ] Yes [ ]No					
h	Relational Database Systems	[ ] Yes [ ]No					

12. Do you ever trained on how to use these components? [ ] Yes
[ ] No

a. If the answer is Yes in (a), how many times? _____

b. If the answer is Yes in (a), what were you trained on these components? _____

c. If the answer is Yes/No in (a), what would you like to be trained on these components?_____
____

13. Tick all the components that are in use in your MIS

[ ] Audit trail report [ ] Adequate security
[ ] Integration of the operations [ ] capacity for future expansion
[ ] Data recovery [ ] User logs
[ ] Relational database management [ ] Real time
[ ] Others specify

14. Tick what can be done by your Management Information Systems:

[ ] Print receipt [ ] Fixed deposit
[ ] Supervision of transaction [ ] Record group transaction
[ ] Generating reports [ ] Standing orders
[ ] Internal Communication [ ] Loan enquiry
[ ] Auditing services [ ] Loan Application
[ ] Opening accounts [ ] Divided Posting

[ ] Loan balances
[ ] Disbursement
[ ] Sanctioning
[ ] Appraisal
[ ] Internal Transfer
[ ] Data Export
[ ] Others specify

[ ] Maintaining General Ledger
[ ] Budget
[ ] Bank reconciliation
[ ] Dividend Calculation
[ ] Data Import
[ ] Balance enquiry

Section V:

Objective4. Management Information Systems Infrastructure

15. Indicate the number of functional ICT tools/resources available in your department.

	Name of ICT tools/Resources	**Number Needed**	**Number Available**
1	Laptops		
2	Desktop		
3	Servers		
4	Printers		
5	PDAs		
6	Mobile phones		
7	LAN		
8	Internet		
9	Institutional e-mail address		
10	Internet Connection [ ] Broadband [ ] Dial Up [ ] Cell phone [ ] Others Specify		
11	Others Specify		

Section VI: Management Information Systems Implementation

16. To what extent have the following factors affected the implementation of MIS

	Extent in Percentage					
Factors	**Tick**	**0-20%**	**21-40%**	**41-60%**	**61-80%**	**81-100%**
Cost						
Infrastructure						
Training						
Regulatory framework						
Organization politics						
Security						
Illiteracy						
Connectivity to internet data						

17. Do training improved the implementation of the Management Information System? Yes/No. Please explain._____

18. Do infrastructure improved or worsen the implementation of the management information system? Yes/No. Please explain.-

_____
_____
_____
_____

19. Do regulatory issues improve or worsen the implementation of management information system/ Yes/No. Please explain.

_____
_____
_____
_____

Thanks for your cooperation

Appendix II:

List of selected Financial Cooperatives

1. Mhasibu Sacco Limited
2. Kenya Police Sacco Society
3. Mwalimu Sacco Society
4. Radio Guard Sacco Limited
5. Nacico Sacco Limited
6. Rafiki Deposit Taking Microfinance
7. Waumini Sacco Society Limited
8. Ufundi Sacco Society Limited
9. Sheria Sacco Society Limited
10. Fundilima Co-operative Savings & Credit Society
11. NHIF Sacco Society Limited
12. AFYA Co-operative Savings and Credit Society
13. Uchumi Co-operative Savings & Credit Society
14. NASSEFU Co-operative and Credit Society Limited
15. Githere Co-operative Saving &Credit Society Limited
16. Unaitas Sacco Limited
17. Comoco Sacco Limited
18. Kenyatta Matibabu Sacco Limited
19. APS Baraka Sacco Society
20. Mhasibu Housing Company Limited
21. Brocahoto Sacco Limited
22. Metropolitan Teachers Sacco Society Limited
23. New Milimani Sacco
24. Asili Sacco
25. AMREF Sacco Limited
26. Chuna Sacco Limited
27. Stima Sacco Limited
28. Jamii Sacco Limited
29. Jacaranda Sacco Society
30. Chai Sacco Society
31. Harambee sacco Sotiety Limited
32. Magereza Sacco Society Limited
33. Fariji Sacco Society Limited
34. Kingdom Sacco Society
35. Bingwa Sacco Society
36. Githunguri Dairy and Community Sacco
37. Tai Sacco Society Limited
38. Elimu Sacco
39. Kenya Bankers Sacco Society Limited
40. Ukristo Na Ufanisi wa Anglicana Sacco Limited
41. Telepost Sacco Society Limited
42. Kencom Sacco Society Limited
43. Biblia Sacco Limited
44. Wanandege Sacco Society Limited
45. Ukulima Sacco Limited
46. Biashara Sacco Limited
47. Shujaa Sacco
48. Kenya Assemblies of God Sacco
49. Riverbank Credit & Society Limited
50. Fig Gikomba Savings and Credit Sacco
51. The Kenya Sacco
52. Wanaanga Sacco

Appendix III

Highest level of profession qualification					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	MCSE	2	1.7	2.1	2.1
	MCSD	2	1.7	2.1	4.3
	CCNA	17	14.2	18.1	22.3
	CPA	34	28.3	36.2	58.5
	ACCA	4	3.3	4.3	62.8
	FINANCIAL ANALYST	2	1.7	2.1	64.9
	KJSE	1	.8	1.1	66.0
	MCSE & CCNA	6	5.0	6.4	72.3
	MCITP-Enterprise Administrator	2	1.7	2.1	74.5
	MCTS	2	1.7	2.1	76.6
	DIPLOMA IT	2	1.7	2.1	78.7
	HR	4	3.3	4.3	83.0
	AKIB	2	1.7	2.1	85.1
	ACNC	2	1.7	2.1	87.2
	Diploma	4	3.3	4.3	91.5
	IMIS, A+	2	1.7	2.1	93.6
	ORACLE	2	1.7	2.1	95.7
	Masters	2	1.7	2.1	97.9
	A+	2	1.7	2.1	100.0
	Total	94	78.3	100.0	
Missing	System	26	21.7		
Total		120	100.0		

Appendix IV

If yes, for how many days * Have ever received any job-training on ICT Cross tabulation			
Count			
		Have ever received any job-training on ICT	
		Yes	Total
If yes, for how many days	1	6	6
	2	2	2
	3	4	4
	4	3	3
	5	11	11
	6	2	2
	7	20	20
	10	4	4
	14	10	10
	21	2	2
	30	10	10
	56	2	2
	60	4	4
	90	5	5
	180	4	4
	270	2	2
	1460	2	2
Total		93	93

Appendix V

		Have ever attended refresher courses on ICT financed by your institution		Total
		No	Yes	
If yes, what areas of MIS were you trained on?	Importance of MIS	0	5	5
	Data entry, Data recovery, Integrity, data backup and confidentiality	0	8	8
	Security, data recovery and confidentiality	0	8	8
	Microwave radio and wireless security	0	1	1
	Integration	0	2	2
	Audit trail, integration and fraud detection	0	4	4
	Backups & business application software	0	2	2
	System security, installation and diagnostics & relational database systems	0	8	8
	Use of ICT in finance, Microsoft office & database management	0	6	6
	Using ASMAS operating systems and Sacco solution software	0	4	4
	Integration and internet	0	3	3
	System administration, security and mobile banking, ERP system and ATM operations	0	4	4
	Cards system management & truce mobile application	0	2	2
	Hardware and system maintenance	0	4	2
Total		0	61	61

Appendix VI

If Yes/No in (c), what other areas of MIS would you like to be trained on * Have ever attended refresher courses on ICT financed by your institution Cross tabulation				
		Have ever attended refresher courses on ICT financed by your institution		
		No	Yes	Total
If Yes/No in (c), what other areas of MIS would you like to be trained on	Implementation of information systems	0	2	2
	Financial analyst	1	0	1
	Security	4	2	6
	Programming	0	2	2
	Programming & system analysis	2	2	4
	Data backup, data integrity & confidentiality	0	2	2
	Performance pearls and Branch GL import	0	2	2
	Programming, networking and trouble shooting	2	0	2
	System audit and cloud computing	0	2	2
	Data management	6	6	12
	How to prevent system failure	0	2	2
	Data recovery and security	0	2	2
	Data recovery	1	4	5
	Software development	0	2	2
	Real time	2	0	2
	Programming & troubleshooting	2	0	2
	Internet	0	3	3
	Adobe pagemaker	2	0	2
	Networking	0	2	2
	Trouble shooting	0	2	2
	Credit management of data/loan/defaulters via CRB	2	0	2
	Quick books	0	2	2
	CCNA	0	2	2
	Sacco software and networking	0	3	3
	Relational database query	2	0	2
	Maintenance and data recovery	2	0	2
	Bank reconciliation	0	4	4
	Software maintenance	0	2	2
	Updating of skills on job training	2	0	2
Total		30	50	80

Appendix VII

Number of respondents trained on various Regulatory components

	Frequency	Percent
Audit trail report	4	5.8
Adequate security	6	8.7
Integration of the operations	4	5.8
Data recovery	4	5.8
User logs	13	18.8
Real time	5	7.2
Relational Data Base Systems	9	13.0
Management	6	8.7
Data backups	4	5.8
FOSA	2	2.9
Disaster recovery plans	2	2.9
Assigning system rights	2	2.9
Building up system	2	2.9
IT infrastructure handling	2	2.9
MYSQL server	2	2.9
Business continuity plans	2	2.9
Total	69	100

Appendix VIII

MIS Regulations Components the Respondents would like to be trained on

MIS Regulation Components	Frequency	Percent
Audit trail report	19	15.83
Adequate security	11	9.17
Integration of the operations	8	6.67
Capacity for future expansion	8	6.67
Data recovery	17	14.17
User logs	12	10.00
Real time	7	5.83
Relational data base systems	25	20.83
All the components	6	5.00
How to manage them	2	1.67
Generating reports	3	2.50
Data backup	2	1.67

Appendix IX

Descriptive Statistics of Needed ICT Resources

	N	Minimum	Maximum	Mean	Std. Deviation
Laptops needed	106	0	30	5.90	6.697
Desktops needed	103	0	50	11.38	9.229
Servers needed	98	0	10	2.65	2.248
Printers needed	104	1	50	4.18	5.656
PDAs needed	47	0	16	4.51	4.872
Mobile phones needed	100	0	50	5.56	9.121
LAN needed	85	0	18	1.91	2.724
Internet needed	85	0	18	1.55	2.612
Institutional E-mail address	80	0	115	11.19	28.170
Broadband	48	1	15	2.29	3.094
Dial up	13	1	15	4.23	4.850
Cell phone needed	2	1	3	2.00	1.414

Appendix X

Descriptive Statistics of Available ICT Resources

	N	Minimum	Maximum	Mean	Std. Deviation
Laptops available	104	0	20	3.59	4.359
Desktops available	108	1	40	11.09	7.991
Servers available	105	1	9	2.27	1.836
Printers available	107	1	30	3.37	4.020
PDAs available	32	0	10	3.00	3.556
Mobile phones available	93	0	30	4.99	8.075
LAN available	93	1	18	2.04	2.734
Internet available	93	1	18	1.68	2.516
Institutional E-mail address	84	0	100	8.54	22.815
Broadband	44	1	10	1.68	1.962
Dial up available	8	1	10	4.25	3.655
Cell phone available	1	12	12	12.00	.