FACTORS INFLUENCING UPTAKE OF PROJECT MANAGEMENT INFORMATION SYSTEMS IN HEALTH FOCUSED COMMUNITY BASED ORGANIZATIONS: A CASE OF KASARANI SUB-COUNTY, NAIROBI COUNTY, KENYA

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DECLARATION

This Research project report is my original work and has not been presented for award of a degree in any other university.

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Signature Date

Anita Mutanu Kyalo

L50/73329/2014

This research project report has been submitted for examination with my approval as university supervisor.

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DEDICATION

This study is dedicated to my mother, Esther Mutune for her moral and financial support, my brother Pascal Musyoka for being my biggest cheerleader, and the memory of my late grandparents Mr. and Mrs. Mutune for all their faith in me and their unwavering support throughout my studies.

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ABBREVIATIONS AND ACRONYMS

CBO- COMMUNITY BASED ORGANIZATION

IT- INFORMATION TECHNOLOGY

IS - INFORMATION SYSTEMS

MIS - MANAGEMENT INFORMATION SYSTEMS

PMIS - PROJECT MANAGEMENT INFORMATION SYSTEMS

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ABSTRACT

The objective of the study was to determine the factors that influence Management Information Systems adoption in health focused community based organizations in Kasarani Sub County in Nairobi. Management Information Systems use in Community Based Organizations for health-related programs is vital to foster and maintain health and relieving suffering. Health focused Community Based Organizations need Management Information Systems more critically because their activities affect health directly. The study objectives were: to establish how financial factors influence the uptake of project management information systems, to assess how technical factors influence the uptake of project management information systems, to establish how organizational leadership of Community Based Organizations influence uptake of project management information systems and to assess to what extent user knowledge influences the uptake of project management information systems in Community Based Organizations. The study focused on community health volunteers and Community Based Organization members. This study adopted the resource dependence theory, the social technical theory, the diffusion of innovation theory and the Unified Theory of acceptance and use of technology. It explains how the intentions of a user of technology influence the adoption of technology or lack of it thereof. Resource dependence theory explains how scarcity of resources among nonprofits leads to prioritization in spending. Social technical theory explains how the interplay between technical factors and humans influences the adoption of technology. Diffusion innovation theory explains how management of an organization can influence fast or slow uptake of new technology. The study adopted the survey research design. The target population was 240 Community Based Organization members and community health volunteers. A study sample of 148 Community Based Organization members was used. To identify the Community Based Organizations that were part of the study, the purposive sampling approach was used. Questionnaires were the preferred data collection method. The questionnaires designed for use by the study contained open and close ended questions. The questionnaire was be pilot tested by 12 people from Kiambu County and a reliability test score of 0.844 was achieved. The questionnaire return rate was 87.1%. The study found that the factors measured: financial, technical, organizational leadership and user attitude and knowledge affected uptake of management information systems. Data analysis included descriptive statistics presented in form of frequency distribution tables. The data was analyzed using SPSS 23. The study found that financial factors had the most significant influence on the uptake of project management information systems at a mean of 2.05. User attitude was the second most significant influence of management information systems uptake at a mean of 2.1. Organizational factors had a moderate influence on uptake of information systems at a mean of 2.76. The least important influence on uptake of management information systems was found to be technical factors at a mean of 2.96. The study suggested for further studies to be undertaken in other community based organizations in diverse fields of focus and in the rest of the country to determine the countrywide rate of information system uptake in community based organizations. The study recommended prioritization in allocation of project implementation funds, training of members in community based organizations on management information systems use, motivation of the management committee through proper training and ensuring that systems meet the user needs and expectations to increase Management Information Systems uptake.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Community Based Organizations are nonprofits that work at the grass root level to better livelihoods for communities. Each CBO is based in and supported by its own local community. CBOs are vital to health projects because they are closest to communities, are well trusted by community members and are able to deal with any challenges and emergencies in an exclusive and timely manner. It is assumed that communities where CBOs are operational are disadvantaged, so the purpose of CBOs is to promote equity in the communities by improving access to health care and education, promote environmental and disability awareness among other things. Many CBOs are affiliated to larger organizations like NGOs, churches and civil society institutions which provide resources and training to the groups for implementation of their activities. Health focused CBOs are many times attached to a community health worker who is a link between the conventional health care system and the community. These are important people because their role is to improve health outcomes for the people. They are closer to communities and are believed to be up to date with the situation in the communities and are trained in the health sector.

A management information system captures, stores, analyzes shares and presents information so as to relay the right information to the right people at the right time in the right form to ensure effective and efficient judgment making in an organization (McLeod, 1990). Information is useful for efficient management in planning, implementing and evaluating services and ensuring availability of resources like manpower, equipment and supplies in partnership with stakeholder and service users. Some MIS tools include Micro-Soft Project, dotProject and Primavera (DeLone & McLean, 1992), Star Chapter, Raiser's Edge, Donor Perfect, Neon CRM , Sales Force, Salsa CRM, Member Clicks among others.

MIS use in CBOs for health-related programs is vital to foster and maintain health and relieving suffering. Information from the community, both health statistics and financial information is used to assess the accessibility to health care, health care services in demand and areas of highest

spending on healthcare. This should enable proper planning to ensure cost effectiveness of services and procedures (Hasan, Shamsuddin, & Aziati, 2013). It is important to assess output like clients seen, homes visited and client feedback for evaluation of performance of interventions - quantity and quality of service. Some CBOs require a system that operates independently, and others will require a system that is part of a set to provide a variety of services. MIS software should be flexible and versatile to meet the different CBO needs.

Internationally, MIS has been used for many health interventions. MIS has been used to relay information from the grassroots CBOs to global centers in the fight against TB and HIV (World Health Organization, March 2015). This has enabled international and regional planning, enabled stakeholder collaboration, and avoided duplication of work as well as implementation of activities in individual countries to combat the spread of HIV and TB. MIS has further been used in understanding, explaining and dissemination of data for improvement of interventions and has provided a platform for discussions among stakeholders that has enabled formation of international standards. Regionally, in Uganda, no village lacks CBOs. They are very entrenched in the life of many villages. Most community-based groups are organizationally small and fragile and almost always stretched to their maximum capacity. They are very functional but the major problems they face are in developing well-functioning MIS. They also face major problems in their leadership and policy making. Accountability is also a problem with many CBOs as many are very prompt with donor reports but are internally not very open. (Makokha, 2002). In Kenya, Community based organizations have been involved in numerous health interventions but the Health management information systems have been primarily a reserve of Ministry of Health workers who are well trained or their use. Despite interventions being targeted at rural folk, most of them have never used the MIS or had a glimpse of how it works (United States Agency for International Development, 2006). This means that sometimes the outsiders who know how to use the systems miss out on vital information available to community based organizations.

However, due to increasingly changing environments, there is a growing interest in the capacity of community-based nonprofit entities to maintain technical expertise to be in touch with change and contribute to an enhanced and healthy quality of life. MIS systems are commercially available and affordable but a large set of skills is needed to manage such systems. Management

Information Systems are indispensable for many organizations but some CBOs due to lack of expertise or funds have opted out of MIS use (DeLone & McLean, 2003). Many CBOs still use standard office tools which are familiar and easy to use to manage huge amounts of data despite the development of MIS. This is regardless of the fact that CBOs are the main implementers of projects in the grassroots and are a hub of information and data. Without MIS, information is scattered on paper and computers in different places with different people. It becomes difficult to combine work from different people in different areas. It also makes storing of information very hectic and leads to collection of information from informants' every time there is need for information. Often employees leave with organizations data.

The MIS solves this problem by keeping all the important information in one place. It should be easy to modify the basic model of an MIS to cover the model of information required in a CBO to suit the culture of each CBO. It should also be considerate of the CBO power model and in line with the CBO growth cycle and should encourage organizational learning (Davis & Olson, 1984). CBOs store a lot of information on the local level but lack human and infrastructural MIS capacity to analyze and consume the data. A high quality of data processing skills and technical skills is needed to take care of hardware and software. Professionals knowledgeable in IT with specific skills like IS operations are difficult to find and maintain (Melville, 2004). The use and sustainability of MIS systems is limited by the high rate of illiteracy among folk who live in less developed areas and rural areas.

For healthcare to be accessible to all people, hospitals are not sufficient. The presence of many hospitals cannot guarantee good health unless there is top quality first contact with community health workers and follow up care at village level are provided. Community health workers visit patients regularly at their home to deliver health services. They provide care for common and important health problems, raise health awareness and organize referrals for those problems beyond their expertise. The availability of information on MIS platforms can empower health workers to improve the quality of the community based health services. Currently paper based registers are the norm. Community based health services are delivered under challenging and low resource environments. Information systems are expected to work around such resource limitations. MIS will provide community health workers with low level education to provide the

right assistance to patients. MIS is important to identify ongoing and emerging health challenges, prioritize health needs, perform research, organize social support, provide services, promote health behavior change and train local communities on health issues (Swanson, 2015).

1.2 Statement of the Problem

CBO's due to their placement in rural or disadvantaged communities may have had little to no interaction with MIS systems therefore, have no idea of the advantages of MIS use to their organizations, thereby opting out on its use altogether thus losing advantage of time-sensitive opportunities. Nonprofits rarely designate resources for IT budgets or time for IS strategic planning. Most CBOs are heavily dependent on donor funding for their implementation activities. However, some funding comes with so many conditions that it becomes a hindrance instead of a facilitator, therefore many CBOs are unable to purchase or sustain MIS. Also, the constant shifts in donors makes it difficult to focus efforts on one particular system. It is therefore important to find out what factors are hindering the acceptance, use and adoption of MIS in community based organizations so as to encourage its use for health.

Community based organizations need to innovate to keep up with the increased demand for services, capacities to address emerging needs and strengthen problem solving capacities. Health based CBOs need MIS more critically because their activities affect health directly or indirectly. IS systems for health based CBOs help to design appropriate health interventions, cover target populations and areas, identify at-risk populations, identify patterns of health seeking behavior among selected groups, assess levels of understanding on key issues, to determine the level of demand for specific interventions and the availability of suitable services within the target area and capture existing knowledge that may have an impact on the intervention. (Kitsubi etal, 2000).

MIS should help to optimize interactions between players in the health care system, health care structures and procedures and service provision in the attainment of health systems goals. Involving parties outside of the conventional health system like CBOs and community health volunteers will help organizations and government to easily adapt to emerging health trends and challenges, increase interactions between communities, organizations and governments to reach

health systems goals. MIS should help to prioritize urgent health needs, plan health interventions, advocate for health needs based on data and to mobilize funds for health interventions (Lee & Yu, 2012). MIS should be able to produce information for the CBO at the organizational level which should be easy to apply and not too technical for the users. The database should be accessible to all the users to access information to increase confidence in communities, health workers and decision makers. This will help to improve coverage, quality and efficiency of healthcare services. MIS adoption for a greater part is influenced by an individual's attitude, the perception of the organization and the work environment of individuals. MIS aims at integrating different systems so as to provide information required to promote and strengthen the working of community based organizations. (Murdick & Ross, 1975). MIS should facilitate decision making by providing accurate up to date data to the relevant person, in good time and in an easy to consume format. Any MIS should be relevant to decision making by enabling management to anticipate problems, change and decisions. A MIS should be flexible to change in the changing environment.

1.3 Purpose of the Study

The purpose of the study was to investigate the factors influencing the uptake of project management information systems in community based organizations in Kasarani Sub-county of Nairobi County.

1.4 Research Objectives

The study was guided by the following objectives;

1. To determine how financial factors influence the uptake of project management information systems among health focused CBOs in Kasarani sub-county.
2. To assess how technical factors influence uptake of project management information systems among health focused CBOs in Kasarani sub-county.
3. To establish how organizational leadership of health focused CBOs influence uptake of project management information systems in Kasarani sub-county.

4. To assess how user knowledge influences the uptake of project management information systems in health focused CBOs in Kasarani sub-county.

1.5 Research Questions

The study was guided by the following research questions.

1. How do financial factors influence the uptake of project management information systems in health focused CBOs in Kasarani sub-county?
2. How do technical factors influence the uptake of project management information systems in health focused CBOs in Kasarani sub-county?
3. Does organizational leadership influence the uptake of project management information systems in health focused CBOs in Kasarani sub-county?
4. Does user knowledge in PMIS influence the uptake of project management information systems in health focused CBOs in Kasarani sub-county?

1.6 Significance of the Study

It is hoped that this study will benefit Community Based Organizations in their practice of adopting Management Information Systems because it will enlighten them on the advantages of technology and importance of its use. It is also hoped the study will highlight benefits of MIS use to the government and policy makers and assist them in making policies that can be helpful in preserving and presenting data for purposes of advocacy, fundraising and for more timely interventions. This study hopes that it will assist system developers to integrate MIS to local conditions to ensure data formats from the grassroots are easily available to users to enable more effective project implementation and management. It is also hoped that this study will add to the data available on MIS adoption in organizations in this country especially in community based organizations and other non-profit organizations in the health sector in this country.

1.7 Limitations of the Study

The study was carried out in Kasarani Sub-county of Nairobi County and focused on community based organizations dealing in health so the findings of the study cannot be generalized to all CBOs because different CBOs are engaged in different activities and characteristics of the

communities where the study was conducted may not be similar in other places. It is not easy to generalize the uptake of MIS systems in community based organizations because of network coverage differences in the country and characteristics of urban populations present in the area of study. It was further expected that some respondents may not answer all questions due to lack of information or fear of exposing ignorance therefore, the interviewer was very helpful in explaining the questions and even self-administering questionnaires to those who had limited English language skills.

1.8 Delimitations of the Study

It was not possible to cover all CBOs operating within the target population so only a sample of community based organizations whose operations were in the health sector were sampled to meet the objectives of the study.

1.9 Assumptions of the Study

The study assumed that the respondents had a clear understanding about variables influencing the uptake of project management information systems in their various community based organizations.

1.10 Definition of Significant Terms

The study used significant terms relevant to the study and defined them contextually.

Financial Factors – In this study they refer to how a Community Based Organization's financial resources impact their purchasing power of Management Information Software, hardware and technical support.

Health focused community based organizations – In this study, these are nonprofit organizations whose aim is to improve health outcomes of the communities in Kasarani Sub County. They include among others HIV, maternal and child health, food and nutrition and reproductive health focused organizations.

Information Technology – In this study, IT refers to the methods used for the purpose of production of information

Information System – In the study, this refers to the function that results from the interaction of hardware, software, data, procedures, and people to produce information.

Organizational leadership - Strengths and weaknesses of the leaders in a Community Based Organization which strongly affect how well it is able to take up Project Management Information Systems in Kasarani Sub County.

Staff knowledge- A Community Based Organization's employees' possession of skills or lack of skills in PMIS that affects their response towards uptake of Management Information Systems.

Technical Factors – In this study this refers to the equipment used within a Community Based Organization's environment and how it impacts how an organization operates.

Uptake of project management information systems – In this study, this refers to the deliberate accept, uptake and use of Management Information Systems in a Community Based Organization.

1.11Organization of the study

The study will be organized as follows. Chapter one will include a background of the study, the problem statement, the purpose of the study, the research objectives, the research questions hoped to be answered, the significance of the study, the assumptions of the study, the limitations of the study, delimitations of the study, and definition of significant terms.

Chapter two will include literature review for the dependent variable (uptake of project management information systems) and the independent variables of this study including (financial factors and uptake of management information systems, technical factors and management information systems, organizational factors and uptake pf project management information systems and user knowledge uptake of management information systems. The chapter will further discuss the theoretical framework adopted by the study, the conceptual framework, the knowledge gap hoped to be filled by the study and a summary of the literature reviewed.

Chapter three of the study will address the research methodology used for the research study. It will include the research design, the sample size and the sampling procedure, the research instrument, the pilot testing of the research instrument, the data collection procedures, the data analysis techniques used, the ethical considerations of the study and a table on the operationalization of variables.

Chapter four of the study will address the questionnaire return rate. It will also address the other findings of the study which will include: organizational information, demographic characteristics of respondents, findings of the dependent actor under study and the findings of the individual independent factors of the study.

Chapter five will address the summary of the findings of the study, discussion of the study findings, conclusions of the study, recommendations of the study and suggestions for further studies based on the findings of the study.

Lastly the study will include appendices of the study. There will be a letter of transmittal requesting for permission to do data collection, the questionnaire used for the study and the Krejcie and Morgan table used by the study and the references the study chose to use.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on reviewed literature. It describes the concepts of uptake of project MIS, the financial factors influencing the uptake of MIS, the technical factors influencing the uptake of MIS, organizational factors influencing the uptake of MIS and the staff attitude and uptake of MIS systems. The chapter contains a theoretical framework supporting the study, a conceptual framework and attempts to address the gap in data and research.

2.2 Uptake of Management Information Systems

Uptake of technology is the deliberate accept, incorporation and use of Management Information Systems in the daily chores in an organization. An MIS value lies in its capacity for data processing, analysis, presentation and management and the ease in sharing information while allowing for participation and collaboration with community members. User uptake of technology according to (DeLone & McLean, 1992) is impacted by the excellence of a system, the data quality derrived from the system, the reason for use of the system, the degree of user contentment derrived from use of a system and the impact of the system on individuals and the whole organization (Yoon & Guimaraes, 1995). Systems are more acceptable to users if they are user friendly, easy to understand, economical, are easy to move around with, reliable, effective, easy and affordable to maintain and verifiable (Rivald, Poirier, Raymond, & Bergeron, 1997). MIS systems require a lot of skills to use. It is therefore easy to assume that more skilled and experienced users with a good technical support from the IS provider are more likely to take up a system.

Uptake and use of MIS by members of CBOs is likely to be driven by the following reasons. A system of high quality; simplicity of use, simplicity of learning by the users, system meeting user requirements, availability of useful system features in line with user needs, system accuracy, system flexibility, easy integration of organization needs and easy customization of the system to meet user needs. Information quality, measured by availability of proper data, usability of data,

understandability of data, relevance of the data, formats of data presentation and conciseness of data. User knowledge and experience of using MIS is likely to be influenced by users learning ability, effectiveness of the system in work produce and the individual productivity increase as a result of the system. Organizations are morel likely to take up MIS if it is within the organization's budget, if they can aford to train the users, if the systems increase productivity and if there are improved outcomes from the use of MIS. (Sedera, Gable, & Chan, 2004).

According to (Zinatelli, 1997) lack of IT training, experience and knowledge, low levels of support and financial inadequacies are the greatest hindrances to uptake of PMIS. Uptake of PMIS is thereby important if a CBO hopes to reap its benefits. Uptake is influenced by several important factors. Financial affordability of the MIS systems has a great impact on uptake. Systems that are easily affordable are quickly taken up. Uptake is also dependent on the availability of availability, complexity and effectiveness of hardware and software systems (Al-Mamary, Shamsuddin, Aziati, & Nor, 2014). Organizational leadership either promotes or discourages the use of PMIS in an organization. Lastly, uptake of MIS is based on user acceptance of the technology associated with MIS use.

2.3 Financial Factors and Uptake of Management Information Systems

These are the financial issues that directly or indirectly affect the affordability of MIS technology that makes it either affordable or not affordable to a CBO. Financial resources are central to an organization's uptake of PMIS. Sufficient funds are necessary to acquire the necessary infrastructure to run organizations. Proper allocation and utilization of acquired resources is essential for the favorable outcomes in CBOs. A superior quality system is expensive to buy and maintain. Organizations need to set aside money to purchase proper hardware and software. Software and hardware require a lot of monetary investments, (Maharaj & Wamuyu, 2011) which is many times unavailable to CBOs. In Africa, due to financial challenges, very little capital has been invested in the development and implementation of modern information technology, that is, software and hardware. Developing applications is costly because project management IS most times has to be customized to meet the needs and circumstances around a CBO. This means that additional funds are needed on top of the purchase price. Hardware, including computers, laptops, Wi-Fi Reuters, mobile phones and tablets is required to keep CBO

members and community health workers connected to the IS at all times in spite of their location. CBOs lack modern systems capacity, have greatly undervalued the role of integrated systems support that an MIS would support and many do not invest in the purchase of modern computers and supporting hardware to enable proper adoption of IS systems because of budget restrictions. Regardless, CBOs expenditure should not be solely on information management, project expenditure should be focused towards attainment of project specific goals in addition to IS support.

Project sponsors are drawn to a project whose performance and cost effectiveness is favorable and has been proven. Sometimes however, funding comes with conditions attached to spending and many CBOs chose to work on implementation at the expense of proper management which leads to losses of time, resources, among other inefficiencies (Makokha, 2002). CBOs should work on reduction of expenses, and invest more in implementation and improvement of efficiency through MIS. Operationalization of MIS programs is costly for small CBOs who depend primarily on limited communal funds and donor funds and small budgets. This is why a MIS system should be affordable to a CBO. Affordability, as the ability of the CBOs to pay for MIS technologies implies that a CBO should afford hardware, software, subscription and continued use of the complementary services like electricity and internet fees. Affordability is mainly gauged by price (Shih & Huang, 2009). Many CBOs acquire MIS technologies but are unable to afford continued use due to high maintenance cost especially for electricity and internet charges. In developing countries, especially in Kenya, the cost of electricity tends to be too high especially for small organizations without regular income, therefore making it at times too costly. Also, fluctuating costs of electricity make it hard to plan for electricity fees thereby, at times; the fees are unanticipated and extremely high. Internet costs in Kenya are also very high and the equipment that comes with its use like modems, Wi-Fi routers and monthly subscriptions are also high. For CBOs whose funds are limited, the uptake and continued use of MIS is compromised by non-affordability.

Implementing MIS affects the organization's staffing. They have effects on resources required for paid staff, volunteers, board members and IT personnel. Some staffing problems encountered during IS development include some IT personnel who make promises about the MIS they cannot fulfill thereby leaving organizations with unhappy experiences and deeply rooted distrust

due to the services offered. Many CBO leaders and members are volunteers and lack the knowledge of IS use. This may lead to dropping out of programmes by the volunteers. Many members of CBOs are assumed to have limited education and such technical skills required for use with MIS may be far out of their reach. Therefore, introduction of any MIS will require training of the staff so as to reduce uncertainty and encourage the uptake of new technology. However, training requires specialists and they may be expensive to hire and keep around. This would mean that the training specialists would have to be kept on as consultants and this would require additional spending by the CBO. MIS training is important for CBO staff and is certainly expensive. Programming, monitoring and evaluating an MIS requires highly skilled technical staff, who are not easily available to CBOs (Ifinedo, 2011), thereby, an MIS training programme established by management should impart knowledge for CBO staff when they are recruited. Additionally, CBOs may have to consider sponsoring one of their own for specialized training so as to retain the technical knowledge in the CBO after the specialist leaves. For cost effectiveness, CBO staff can be trained together in groups especially once they are recruited. Training costs are recouped as a result of savings in time. Also in some instances implementation of IS may require change in leadership because any organization will need leaders who are dedicated to MIS use, interested in it and knowledgeable so that others can copy from them.(Chan, 2000); (Davies, 2009).

2.4 Technical Factors and Uptake of Management Information Systems

These are aspects of software and hardware in a community based organization and their influence on the use of MIS. Technology enables an organization's ability to work with others locally and globally. Communication through emails, video calls, online calls and conferencing helps generate new ideas and increase participation and networking opportunities with different stakeholders. It is therefore important that technical factors of an MIS considered for a system to be fully functional. Some technical problems encountered by CBOs during MIS development include difficulty in finding sites on the internet once they are developed, poor linkage of the site to sites of other important stakeholders and very basic sites in comparison to the high prices paid for site development. An IS developer should therefore work to reduce these problems. This is through ensuring system quality. This implies that an IS should possesses desirable

characteristics that endear people to its use (Abdul, N.S., & Hassan, 2007). Systems should be current and not outdated and it should be easy to update the system.

The quality of a system determines the output quality and currentness and timeliness of data which impacts an organization's processes. A high quality system means high quality output of data, shorter times taken for processes of data entry and processing, subsequently leading to higher quality decision making. System excellence is gauged by measuring flexibility of the system and response times taken by the MIS (Petter, DeLone, & McLean, 2008). A quality system requires high levels of flexibility to meet CBO needs (Althonayan, 2013). Many CBOs need a constantly changing system to cater for their regular changes in working partners. Many CBOs work with diverse partners and donors for short periods, therefore for each change made; it should be easy to modify the system to accommodate a new partner without much spending. Flexibility means that a system should allow different types of data in different forms from different people and it should allow for easier comparison, processing and interpretation of data.

Good quality systems lower response periods to instructions. Well-timed receipt of information is needed to make the right choices in urgent situations thereby; the shorter the time a system takes the more desirable it is. Slow response times tend to frustrate users and decision makers and cause negative feelings towards a system thereby discouraging the use of a MIS. A good MIS should have information quality implying that an IS should possess desirable output characteristics. That is, the data output should be relevant, understandable, accurate, complete, current and usable. (Petter, DeLone, & McLean, 2008). For decision making, information needs to be free of error. A system with low amounts of error is desirable because it reduces uncertainty and time taken counter checking the data. This type of system, if present encourages use.

An MIS should produce data containing all the details required for presentation or decision making. It should not omit details and should be thorough in giving the information needed. A system should be precise. It should avoid giving unnecessary information and it should be straight to the point. A system should ensure that data is presented in the same format. Formats for data presentation should be easily understood by the target audience. The presentations should be neat and well organized. A system should ensure that data output fulfils its

requirement, and to be in time for decision-making. This will encourage MIS adoption. A MIS should have a high degree of utility. Utility is the degree to which an MIS is relied upon for the everyday activities of an organization. The managing committee will need current databases for finance and administration (Al-Mamary, A, & Azaiti, 2014). The committee will require updated member as well as community health worker information. Additionally, the MIS system will need to store current and existing documents. Existing documents scanned and uploaded concisely and accurately in the system whereas current day to day work captured in the system in work spaces for each member. This will ensure stored diaries, plans, reports and documents in a central repository.

Service quality is the degree of technical assistance that users of an IS receive from the system support service. Support can be in form of responsiveness, technical advice and empathy for the users of the IS (Petter, DeLone, & McLean, 2008). Technical advice should be sound, useful and put in an orderly manner for easy consumption by users. Support providers should ensure that users are well assisted and their needs are fulfilled. Workers should be encouraged to use the system for job-related work to enable management and service providers to give necessary help and resources to workers. This promotes MIS use. MIS systems should be reliable. Any credit conferred upon an IS is as a result of its performance and dependability. Performance risks should be avoided. Performance risk is the probability that an IS will not execute the assigned task to the expected standards (Grewal & Marmorstein, 1994). The high uncertainty about provision of reliable electricity and internet supply in Kenya highly discourages MIS use. The service provider should ensure functionality of all the deliverables and sort or keep at minimal, issues like network outages that may result in temporary disruptions or communication failures.

A MIS system should pass the security tests. A security threat is an incident which when it occurs has the potential to bring difficulty to an organization as a result of data breach, fraud or vandalism to a network, (Kalakota & Whinston, 1996). A security risk is the likelihood that a negative outcome will result from the use of an IS. A system should be safe for it to store financial data, transactions and classified information. A system should provide the user with a sense of security and confidence in its use. Perceived security is the capacity to secure data and protect it from unauthorized access especially financial information. It is extremely important to

safeguard information so that security concerns do not upset the use of PMIS. A system should be safe for both the users and the organization. Due to funds being received by CBOs, some employees may be tempted to embezzle funds to their accounts if the security is lax. Also, there are users and competitors who hack into others systems to steal data and finances. Users should be assured of their security once they log in to the system. As long as users feel insecure and unsure in their use of a system, they are likely to be guarded and weary of its use but if a system is concluded as safe and reassuring, uptake is probable to increase.

2.5 Organizational Leadership and Uptake of Management Information Systems

These are factors within the organization that can affect leadership that determine how well an organization is able to take MIS up (Dezdar & Ainin, 2011). A CBO wishing to encourage the adoption of a management information system should be ensure that the organization is ready financially, in leadership and in worker training to take up MIS. Good leadership in CBOs should have vision and commitment towards ensuring the CBO is able to fulfill its mission with project MIS. Leadership should mobilize and arrange the resources necessary to fulfill the goals of an organization. They should also be ready for problem solving and decision making. Solid and consistent leadership will make it easier to acquire and develop of resources, and augment an organization's outreach activities. Good leaders uplift the image, prestige, and reputation of any organization to a stakeholders and community members therefore opening up channels for partnerships, collaborations, and working relationships that promote CBOs aspirations.

Leadership should set the bar for organizational performance. Staff training is always important to leadership in any organization as it is vital for upgrading workers skills. There should be a strategy for board development to explain and review the functions of the board so that board members understand their responsibilities so that it is easier to attain goals. Leaders should train and mentor others to ensure there is no leadership vacuum in the future. A CBO should start by eliminating negative attitudes and beliefs about the MIS among its workers through guided learning experiences, persuasive communications and promoting successful uptake experiences by peers. Top management support is managerial approval and support during the MIS project conceptualization and operationalization (Al-Adaileh, 2009).

The managing committee of a CBO should commit resources to address all issues pertaining to IS with the aim to encourage increased use of IS. This should be in terms of providing and supporting member training. The management should do this by finding good trainers and paying their dues as well as providing a conducive environment where the training can happen in the time most flexible for the trainees. This will encourage uptake of PMIS. Additionally, the management can ensure it maintains user competence through regular refresher courses so they can be up to date with changes in technology. The management should ensure the purchase of necessary equipment. This includes computers, laptops, tablets and mobile phones to be used with the MIS. They should also ensure software development or purchase of the required software, (Abdel & Mohamoud, 2009). The managing committee should adopt leadership styles that openly support the use of systems through communication, reporting and delegating of chores via the IS. (Al-Gharbi & Naqvi, 2008). This way, members are encouraged and motivated to use an information system.

Management should identify the opinion leaders who influence workers and offer training and other incentives so as to have them identify innovative workers who can be directly involved in software development of the IS. To further encourage adoption of IS, management should offer incentives and rewards to employees who are quick to adopt technology and those who influence others within the CBO to adopt their MIS successfully. The rewards can be financial or open recognition before the group. Individuals will then better their productivity which will add value to the organizations output (Cho, 2007). Management should avoid top down approach to management as this discourage employees from adopting technology.

A MIS should be compatible with the organizations culture. Compatibility is congruence with social practices among users of the MIS in the organization and outwards in the community represented by the CBO. MIS should fit in the values, goals and skills present in the CBO. MIS output supports many daily decision-making needs of the CBO's managing committee (O'Brien & George, 2007). The difference between organizations using MIS from those not using them should be observable (Al-Mamary, A, & Azaiti, 2014). The outcome of the quality of information on decision-making among management should be measurable (Ajayi, F, & Omirin, 2007). MIS should improve the performance of any organization that decides to use it. (Gorla, Somers, & Wong, 2010). The impact of MIS use on costs, delivery, quality and efficiency of

services should be clearly visible (Caniels & Bakens, 2012) . MIS use should be able to increase effectiveness of decision-making and competitiveness, leading to creative problem solving by management, (Nath & Badgujar, 2013). Organizations should be given an opportunity to try the ability of a MIS before purchase to determine whether it fits in with their aspirations, ideals and identity and custom requirements. This will give the workers and management the opportunity to customize a MIS before committing to use it. This would prevent awkward mistakes like symbols and colors that are not compatible with the culture of the people they are working with.

2.6 User knowledge and Uptake of Project Management Information Systems

User acceptance is important in the effective uptake of any information system (Al-Gharbi & Naqvi, 2008). User acceptance is the willingness to take up and use an information system in an organization to support the goals and objectives set out. User interest in MIS use is pivotal for determining the uptake of IS. Users should perceive it as useful to use MIS systems. Where the users' are interested in learning and adopting IS, then chances of uptake are increased significantly. Where users are aware about management information systems and are aware of the systems available and the way they function, and are assertive they are likely to be positive to the adoption of IS systems and this way, the organization is compelled to empower them. An organization should be able to empower its potential IS users with knowledge and skill so that they can develop confidence that they are able to maneuver the system by themselves.

Knowledge of MIS is an important pointer to the use or lack of use of MIS. When people lack knowledge on IS use, they tend to resist it. This is why it is important to train them. Knowledge is based on training. CBO members should be given adequate training to boost their competence. Increased IS knowledge increases the degree of use and subsequent information quality (Igbaria & Iivari, 1995). Current use of IS and previous use increases the amount of experience with MIS use. When CBO members are exposed to increased MIS use, they then have increased experience with MIS use. Experience is prior exposure to IS technology where one has gained skills and knowledge. (Igbaria & Iivari, 1995) propose that experience is judged by familiarity with system concepts and functions. The belief that an individual is able to accomplish their work successfully encourages MIS adoption (Igbaria, Zinatelli, & Cavaye, 1997).

MIS use in CBOs is also dependent on the expected performance of the MIS and its impact on their work and earnings. Where workers perceive that an IS will lead to a reward, to improved performance in their work or reduced effort in performance of tasks, they tend to embrace the uptake of MIS, (Alavi & Henderson, 1981). When a system promises to problem solve, improve outcomes, and cushion the user from change, it is well accepted (Chen H. , 2010). Mainly, change of technology in any organization results in resistance. Resistance is manifested as fear by most workers; phobia of technology, of substitution by technology and the unknown, (Beaumaster, 1999). A MIS should be able to assist the users to adopt to change to be more acceptable, (Davies, 2009). Lack of user acceptance impacts negatively on intended incorporation and subsequent use of an information system. Negative results like data loss from system failure resulting in losses in project time and organizational deadlines make users less eager to accept and adopt MIS systems.

A system should provide continuing ease of use. A good strategy for adoption works by optimizing system efficiency to achieve a successful system that encourages system acceptance, (Davies, 2009). Any organization should allow the users' adequate time for training and familiarization with the system. Users should also be allowed a partial trial of the system so that they can familiarize with functions in the system and give their feedback and a suggestion before the system becomes fully operational. The MIS system must be user friendly to the extent that users are able to confidently and comfortably do their work in the system, making corrections, additions and proofreading their work without having to go through long, tedious processes (Landrum, Prybutok, Strutton, & Zhang, 2008). Users should be able to have autonomy and feel in control over their work spaces so that they can access and save their work at ease while at the same being able to access the relevant work of other members on their team and research data from the field. The system formats should be easy to edit without loss of work product. IS systems should enable users access anywhere and anytime away from the office for ease of work performance. Information should be easily accessible and users should get data they need quickly and easily. The system should also be low risk, exposing the workers to minimal data losses and data theft or breach. These factors combined promote MIS use.

2.7 Theoretical framework

The study drew from four theories: resource dependence theory, social technical theory, diffusions of innovation theory and Unified Theory of Acceptance and Use of Technology Theory.

Resource dependence theory

This theory by (Pfeffer & Salancik, 1978) explains how external organizational resources affect organizational spending behavior. This study will attempt to explain how the difficulties of sustaining programs financing and staying on mission by CBOs in Kasarani Sub County affect their uptake of MIS systems. Because most of their income is from others and instructions on use are rigid, CBOs in Kasarani therefore need to spend their money in more cost effective ways so as to attain their goals and retain funding while including expenses like hardware, software and accompanying services like internet and electricity. In this study this has been translated into an independent factor: financial factors influencing the uptake of project management information systems.

Social technical theory

This theory by Albert Cherns (Cherns, 1976)was introduced to address the problems associated with technology implementation due to resistance by the workers resulting in non-accruement of anticipated benefits of technology. This theory seeks to explain the blending in of technology and human resources in CBOs in Kasarani to achieve the tasks and goals set out to be achieve. The theory seeks to determine the degree to which workers are familiar with the technical skills needed to access the MIS from their devices, familiarity with commands, tools and techniques needed to transform input into output and the knowledge to interpret and transmit the correct data to the right place and time to enhance the efficient performance of the CBOs.

The study will determine this through checking the technical factors of MIS systems and compatibility with the human resources available. In this study, this is an independent factor phrased as technical factors and the uptake of management information systems.

Diffusions of innovation theory

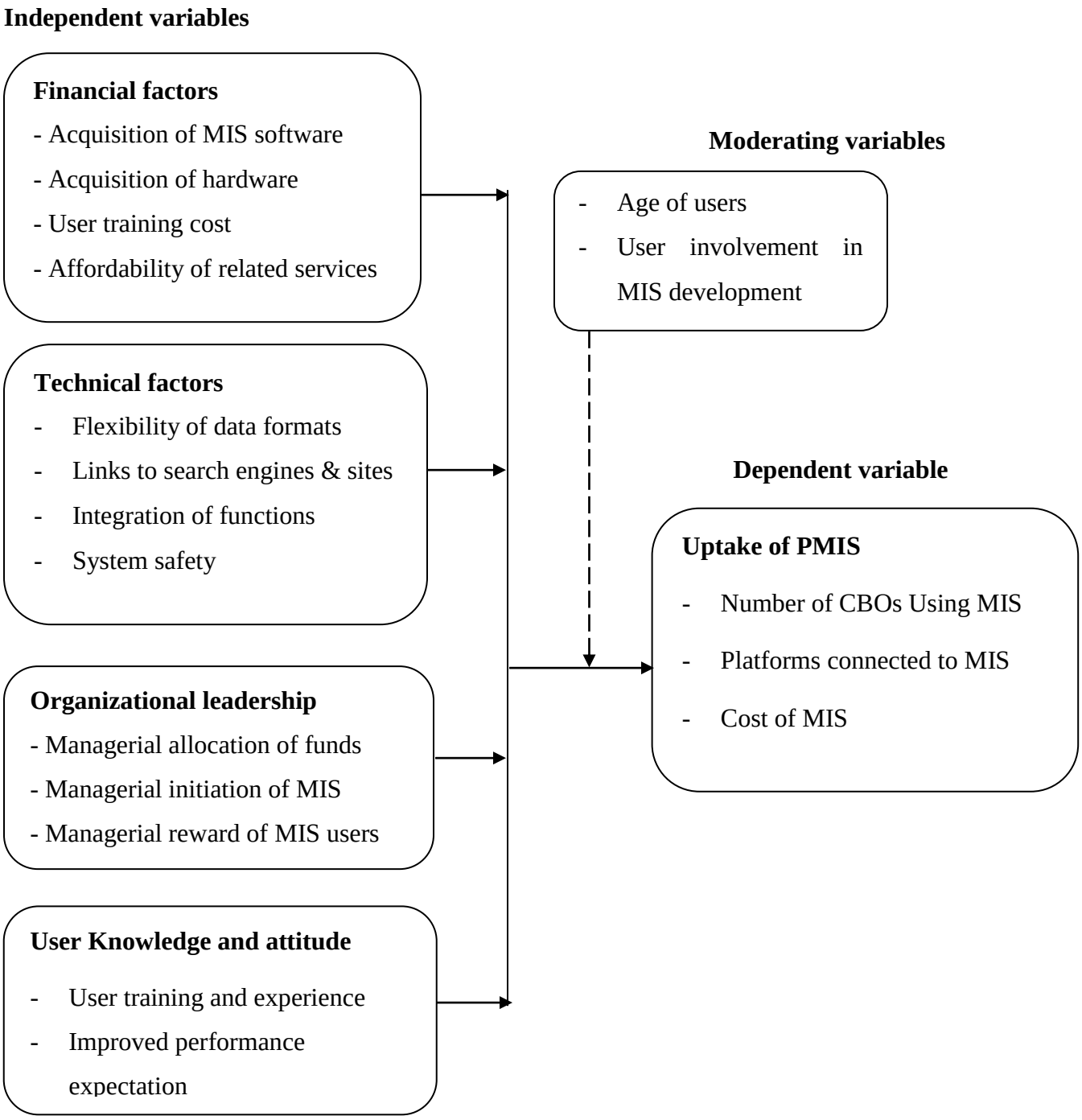
Diffusion is the degree to which someone chooses to take up modern ideology. This theory is by Rogers Everett. (Rogers, 1985) Explains why, the rate and how new technology is disseminated. It proposes four elements that influence the dissemination of a new technology: the innovation, communication transmitters, time, and a social system. As it relies heavily on human endeavor, the study seeks to determine whether CBOs have good leadership that supports the adoption of technology and provides financial backing. The study seeks to determine how well the leadership of CBOs has promoted diffusion of MIS use and how successful their attempts have been in adoption in Kasarani Sub County CBOs. In this study, this is an independent factor phrased as organizational leadership and the uptake of management information systems.

Unified Theory of Acceptance and Use of Technology Theory

The study will adopt the use of the UTAUT (Unified Theory of Acceptance and Use of Technology**)** theory. The study seeks to elaborate whether user purpose to employ an IS and affects the adoption and usage behavior or lack of it thereof in the CBOs of Kasarani Sub County. (Venkatesh, Morris, & Davis, 2003). UTAUT concepts include: performance projection, effort prediction, social impact, and facilitating conditions that affect purpose to employ technology (Davis F. , 1989). This theory focuses on workers as a vital part of technology adoption and acceptance. This is because workers are driven by internal factors within them and external factors from the work environment (Venkatesh, Morris, & Davis, 2003) arbitrated by age, gender, voluntariness and expertise of use. The study hopes to study user behavior towards MIS use and the factors that influence their uptake of systems. In this study this is an independent factor phrased as staff knowledge and the uptake of management information systems.

2.8 Conceptual framework

Figure 1: **Conceptual framework**



2.9 Knowledge Gap

Researcher(Variable)	Area of study	Study findings	Research gap	How current study intends to fill the gap
(Al-Mamary, Shamsuddin, Aziati, & Nor, 2014)	Factors enhancing acceptance of management information systems in Yemeni companies	Study found that technological, organizational and people factors affect uptake of MIS in companies	The study did not cover financial factors as a factor influencing uptake of information systems. In addition, the study was done in Yemeni in private companies.	This study will include financial factors as an influence in MIS uptake. Further, the study will be done in Kenya which has significant differences with Yemeni and will cover nonprofit making entities
(Kiboye, 2015)	Influence of information communication technology adoption on operations of community based organizations in Rangwe Sub County	The study found that CBOs did not have enough ICT equipment and poor perception and lack of sufficient knowledge on ICT hindered adoption	The study did not cover management information systems adoption by CBOs instead covered the wider ICT.	The study will explore a more specific aspect of ICT which is management information systems
(Al-Mamary & Aziati, 2014)	Factors affecting successful adoption of management information systems in organizations towards enhancing organizational performance	The study found that technological, organizational and people factors influenced MIS adoption where organizational performance was involved	The study explored telecommunication companies in Malaysia	This study will explore MIS adoption in community based organizations
(Waithaka, Mburu, Korir, Muathe, & Obere, 2013)	Organizational factors that influence the adoption of inter-organizational information systems by Universities in Kenya	Top management support influences adoption of IS Number of skilled personnel in an organization has direct influence on IS adoption	The study did not explore other organizational factors like managerial reward of IS use and allocation of funds	This study seeks to explore the managerial factors like funds allocation, reward of employees and leadership by example in IS adoption

(Dezdar & Ainin, 2011)	The influence of organizational factors on successful ERP implementation	The study found that top management support and commit to the project resulted in successful implementation. Proper communication of plans so they are understood by everyone and proper training and education on systems when availed to all users to ensured they were able to use systems effectively and efficiently	The study focused on the influence of organizational factors on enterprise resource planning systems.	The study will focus on the influence of organizational factors on management information systems uptake.
(Igbaria & Iivari, 1995)	The effects of self-efficacy on computer usage	The study found that computer experience and self-efficacy had a strong positive direct effect on self-efficacy, perceived ease of use, perceived usefulness and usage.	The study focused on individuals and acceptance of computer usage and did not focus on other factors that influenced computer acceptance and usage.	The study will focus on additional factors that influence adoption of technology not only to individuals but to whole organizations.

2.10 Summary of Literature Review

The uptake of management information systems is influenced by many factors of the system including the ease of use, system flexibility, system reliability and the ease of learning the system. An MIS salient features should be able to be improved through insight gained by its use, should have increased enlightenment, reduced complexity, increased flexibility, and low response times. A common MIS system should enable each user to work independently, while creating and contributing to a global network benefiting the whole organization regardless of project location. When improved, these factors can significantly add to comfort and ease of system use which will resort in more desirable levels of adoption and use of MIS. External factors such as the system support that users receive from IT user support and factors like network and electricity should be constantly reliable to encourage users to take up MIS. Customer care should be responsive, give accurate responses, be dependable and trustworthy, be technically competent, and empathetic towards the MIS users to encourage the use of such systems. The output of a system should be timely, relevant, understandable, accurate, complete, current, timely, and usable to encourage MIS use. The users should also be well trained and given proper support by management to encourage MIS use.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter contains the design the research used for the study, the target population, sample size, sampling procedures, the research instruments, the pilot testing procedure, the validity and reliability of the research instruments and the data collection techniques used. Finally, data analysis procedures used and ethical considerations of the study were discussed.

3.2 Research Design

The study employed the descriptive survey research design. Descriptive research also known as statistical research was used to gather quantitative and qualitative data for a study (Jackson, 2009). The study will use pre-defined questions for respondents to choose responses from to enable the study to describe the data collected and characteristics of the subject under study. This is because the study wanted to find out the opinions and attitude that members of CBO hold towards the uptake of MIS. This will result in frequencies, averages, modes and standard deviation.

3.3 Target population

The research targeted 60 health focused CBOs in Kasarani Sub County. According to a report (Africa Population and Health Research Centre, 2008) there are more than 60 CBOs in Kasarani.

3.4 Sample size and Sampling Procedure

The research used non probability (purposive) stratified sampling. According to (Mugenda & Mugenda, 2003), purposive sampling helps to save time and resources. The study sampled only community based organizations that were health focused. Stratification was done to get 3 groups: community health volunteers, regular CBO members and management team members.

3.4.1 Sample size

The study hoped to obtain a sample of 4 persons from each organization who were involved with MIS and technology. The study targeted 1 member from the management committee, 2 regular CBO members and 1 community health volunteer from each CBO. The target population from 60 CBOs is therefore 240. To determine the sample the study used the Krejcie and Morgan table. For a population of 240, a sample size of 148 respondents is representative.

Category	**Sample Frame**	**Percentage**
Community health volunteers	37	25
Regular CBO members	74	50
Members of CBO management committee	37	25
Total	**148**	**100**

3.4.2 Sampling Procedure

The study adopted purposive sampling. The study selected a sample based on the desired characteristics in the sample; CBO members who were part of a health focused CBO. A representative sample resulted in savings of time and money (Saunders, Lewis, & Thornhill, 2012). The researcher obtained a list of CBOs who indicated their status in their mission details as health related from the Department of Gender and social services. The researcher then visited the local administration in the area from higher up in the hierarchy i.e. the district commissioner, to the chiefs to establish the information on the ground after which the researcher came up with a data collection plan.

3.5 Research instrument

A questionnaire containing predesigned questions aimed to determine the factors that influence the uptake of project MIS within Kasarani Sub County was designed and distributed to trained community health volunteers attached to individual CBOs and members of health focused CBOs. The research aimed to collect quantitative and qualitative data. The questionnaire contained open

and closed ended items. (Mugenda & Mugenda, 2003) Emphasize that close ended questions ensure consistency of desired data among all informants and open ended ones help the researcher determine the feelings of the respondents. The questionnaire had several parts; one part to collect demographic information while the other sections tested the research objectives, uptake of project management systems, financial factors and their effect on uptake of MIS, technical factors and their effect on uptake of MIS, organizational management and its effect on uptake of MIS and staff knowledge and its effect on uptake of MIS. The variables were be tested on a five-point Likert Scale ranging from strongly agree to strongly disagree.

3.5.1 Pilot Testing

For the pilot test, the study picked 10% of the sample size (Connelly, 2008) which was 14 people, who had similar desirable qualities as the target population, but in Kiambu County. The questionnaire was administered in the same way the study administered its questionnaires and the feedback was used to identify weaknesses, difficult questions and ambiguities. This helped to shorten, reword, revise, rescale and check that all questions were answered to cover the objectives of the study.

3.5.2 Validity of Research Instruments

This study used content validity. This means that a research instrument has the right questions for the right variables. According to (Kothari, 2004) validity is the extent of correctness of a research instrument. Validity of a research instrument is enhanced through involving an expert. To make certain that all the objects on the questionnaires were valid, the questionnaires was reviewed by my supervisor in the Department of Continuing and Distance Learning, University of Nairobi. Revision and adjustments of the instruments was done, in accordance to the advice from the supervisor and the outcome of the pilot study.

3.5.3 Reliability of Research Instrument

Reliability measures consistency of a research tool. It seeks to check whether the results obtained using a similar questionnaire can be replicated when done a second time (Ghauri & Gronhaugh, 2007). The study used split-half reliability whereby the study divided in half all questions of the same questionnaire into equivalent halves, a half of odd numbered queries and another of even

numbered queries. The entire test was administered to a group 10% of the target population which is 16 individuals. The total score for each set of questions was computed, and reliability obtained by Pearson r correlation between the scores on the two halves of the test. The study then adjusted the half-test reliability using the Spearman-Brown formula. The statistical test consisted of looking at the correlation coefficient (Nunnaly & Bernstein, 1994) to correlate the test values of the two groups. Reliability of 0.844 was attained. According to (Nunnaly & Bernstein, 1978) reliability of 0.7 or above indicates high internal reliability. The questionnaire was considered very reliable.

3.6 Data Collection procedures

The study obtained a letter of introduction from the University of Nairobi. In addition, the study applied for a research permit from the National Commission for Science, Technology and Innovation. The researcher obtained a list of CBOs who indicate their focus in their mission details as health related from the County Department of Gender and Social Services. The researcher visited the administrative offices of the district officer and chief to introduce the study and seek any assistance necessary. The researcher then visited the offices of the respective organizations to get better acquainted with the subject group and to obtain consent for research. The researcher obtained the contacts of the CBO members and called the CBO members to elaborate on the intent of the study and to inquire permission from the target population. When the respondents gave consent, the researcher requested for an audience with them and set appointments to meet CBO target members. Subsequently the researcher visited each CBO to do data collection from the desired target population. The study distributed questionnaires to all the respondents then retrieved the completed questionnaires.

3.7 Data analysis techniques

The data retrieved was organized, analyzed according to usefulness, coded according to interpretation, recorded and stored for analysis. Quantitative data Scientific Package for Social Sciences 23 (SPSS) was employed. Analysis was done both quantitatively and qualitatively. Qualitative data was summarized, explained, interpreted and conclusions made. The topics were grouped thematically to ease the analysis process. Quantitative analysis was done using mean, standard deviation, correlation among other techniques. (Kothari, 2004) When making results

known, statistical techniques and graphical techniques are ideal. Data is presented statistically using frequency distribution and percentage tables.

3.8 Ethical Consideration

The study ensured voluntary participation and informed consent so that participation was out of free will. The study ensured that informants were informed about the procedures of the research. The study maintained confidentiality and anonymity of the subjects while being honest in all communications. The research avoided bias while acknowledging all contributions to the study. When reporting the findings, the study accurately presented the findings and observations in the appropriate context.

3.9 Operationalization of Variables

Table 3.1 Operationalization of variables

Objectives	Type of variable	Indicators	Measurement scale	Method of data collection	Research Approach	Data analysis technique
To establish how financial factors influence PMIS uptake	Independent	• Amount of money spent on software, hardware and training	Ratio	Administering questionnaires	Quantitative & qualitative	Frequency counts, mode, median, mean
To assess how technical factors influence PMIS uptake	Independent	• System quality • Information quality • Service quality • System safety	Ordinal	Administering questionnaires	Qualitative	Frequency counts, mode, median
To establish how organizational management influence PMIS uptake	Independent	• Level of managerial support	Ordinal	Administering questionnaires	Quantitative &qualitative	Frequency counts, mode, median
To assess how user knowledge influences uptake of PMIS	Independent	• Understandability and ease of MIS use	Ordinal	Administering questionnaires	Qualitative	Frequency counts, mode, median
To determine how many CBOs are using PMIS	Dependent	• Number of CBOs using PMIS • Number of platforms PMIS can be accessed on	Ratio	Administering questionnaires	Quantitative	Frequency counts, mode, median, mean

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter will present the findings of the research project, analyze the data collected and discuss it in relation to the objectives of the study. Data discussed and presented will be the questionnaire return rate, demographic characteristics of the respondents, uptake of project management information systems and data on the factors influencing the uptake of management information systems in Community based organizations.

4.2 Questionnaire return rate

The researcher issued 148 questionnaires to the targeted respondents of the study drawn from 60 community based organizations. The questionnaires returned were 129 which represented 87.16% return rate. According to (Dommeyer, Baum, Hanna, & Chapman, 2004) a questionnaire return rate for paper above 75% for a paper study is very good and acceptable for social science research surveys.

4.3 Organizational information

The study sought to gather data about the organization to better understand how the CBOs functioned and to be sure that the study got a representative sample of the intended participants. The study examined the designation of the respondents in the CBO, length of service of each member in the CBO, monthly clients served by the CBO and the area of health covered by the CBO.

4.3.1 Distribution of respondents by Designation in the CBO

The study sought to determine the designation of the CBO members. This is because the study needed to establish the role of CBO membership in the uptake of MIS in each CBO. The study assumed that CBO leaders were a greater influence on whether the CBO takes up MIS than other ordinary CBO members. The study also sought to seek out community health volunteers because

they tend to be trained by government and larger organizations and were a very vital in uptake of MIS as they were the ones who would introduce an MIS to a CBO and operate it before others learn.

Table 4.1 Distribution of respondents by designation

Category	Frequency	Percentage
Community health volunteers	32	24.8
Regular CBO members	63	48.8
Members of CBO management Committee	34	26.4
Total	**129**	**100**

In table 4.1, ordinary CBO members were the majority of respondents at 48.8%, the leadership at 26.4% and the community health volunteers were 24.8% of the respondents. This implied that there was sufficient leadership to push the MIS agenda forward in every CBO with community health volunteers to back them up.

4.3.2 Distribution of respondents by length of service in the CBO

The study sought to determine how long the respondents had been involved with CBO activities. The study assumed that the longer a person has been with a CBO using MIS the more likely they were to be using the MIS themselves. The shorter a person had been with the CBO, the less knowledgeable they are on MIS activities and CBO activities. The study also assumed that older people who had been in CBOs which use MIS longer are more likely to have accepted and adopted MIS.

Table 4.2 Distribution of respondents by length of service in the CBO

	Frequency	Percentage
Less than 1 year	28	21.7
1 - 3 years	40	31.5
3 - 5 years	25	19.5
5 to 10 years	20	15.5
Above 10 years	16	12.8
Total	**129**	**100.0**

Results of the study showed that 21.5% of the CBO members had been with the organizations for less than 1 year. 31.5% of the members in the modal group had been with the CBOs for 1 to 3 years. This means that on average, every CBO member had been part of a CBO for 2 years. These members were likely to be knowledgeable on the MIS system in use in the organization and well adopted with MIS use. 19.5% of CBO members had been with the CBOs for 3 to 5 years while 12.8% of CBO members had been part of a CBO for 5 to 10 years. CBO members who had been with a CBO for more than 10 years were 14.8% of the population.

4.3.3 Clients served monthly by CBOs

The study sought to determine how many clients each CBO served per month in order to determine whether the CBO warrants the use of an MIS and how urgent and important an MIS was for each CBO. It was also important to determine the amount of data received by each CBO to determine whether the MIS was value for money as an investment.

Table 4.3 Clients served monthly by CBOs

	Frequency	**Percentage**
0 - 50 Clients	18	14
51 -100 Clients	36	27.9
101 - 150 Clients	46	36
151 - 200 Clients	22	17
Above 250 Clients	7	5.1
Total	**129**	**100.0**

The study results showed that 14% of CBOs had 0 to 50 clients. 27.9% of the respondents had 51 to 100 clients monthly. 36% which is the modal group saw between 101 and 150 clients monthly. 17% of the respondents served between 151 and 200 clients while 5.1% of respondents served above 250 clients monthly. For health focused interventions carried out by the CBOs, data in their possession was important to identify health concerns, outbreaks, epidemics, areas with certain illnesses and the effectiveness of interventions therefore majority of the CBOs should have functional MIS to serve that purpose.

4.3.4 Area of health covered by the CBO

The study sought to get a representative sample of health focused interventions and asked the respondents to indicate the area of health their organization was focused on.

Table 4.4 Area of health covered by the CBO

	Frequency	Percentage
HIV/AIDS	29	22.1
Maternal and Child	15	11.4
Health	32	25.5
Nutrition and Food	25	19.5
Reproductive Health	7	5.4
Malaria	7	5.4
Mental Health	7	5.4
TB Control	7	5.4
Public Health		
Total	**129**	**100.0**

The results of the study showed that 22.1% of the respondents were from CBOs whose focus was HIV/AIDS health interventions. 11.4% of the respondents were form maternal and child health focused CBOs. 25.5% of the respondents were from food and nutrition focused CBOs. 19.5% of the respondents were from CBOs focused on reproductive health. Malaria focused CBOs constituted 5.4% of the respondents interviewed as did respondents from mental health, TB control and public health focused CBOs. The respondents were a very representative sample of health focused CBOs.

4.4 Demographic characteristics of respondents

The study sought to determine the demographic characteristics of the study respondents. Demographic data gathered included the gender of the respondents, the highest level of education attained by the CBO members and the amount of time the respondents had served as part of the CBO. These characteristics were analyzed and presented in frequency tables.

4.4.1 Distribution of respondents by Age

The study sought to determine the age of the respondents as a key moderating factor in the uptake of MIS. The study assumed that younger people are drawn more to technology, had more exposure to modern software and hardware therefore likely to be more involved in the uptake of management information systems. It was assumed that CBOs with more young people were likely to adopt MIS easier and push others into adoption than those whose majority were older people.

Table 4.5 Distribution of respondents by age

Age	Frequency	Percentage
Below 25	23	18.1
25 - 34 years	28	21.5
35 - 44 years	36	28.2
45 - 54 years	30	23.5
55 and above	12	8.7
TOTAL	**129**	**100**

The data shows a wide age distribution with no particular age group dominating membership of CBOs in Kasarani Sub County. Respondents below 25 years make up 18% of the CBO members. Those who are aged between 25 and 34 years make up 22% of the CBO members, those aged between 35 and 44 years are the majority at 28%. The average age of the CBO member in Kasarani is 40 years. In this modal group, majority are above the age of youth (35) which means that they may be slower adopters when it comes to the uptake of MIS. Those aged 45 to 54 years are 23% of the population while those above 55 years make up only 9% of the study respondents.

4.4.2 Distribution of respondents by Gender

The research sought to determine the level of participation of men and women in Community Based Organizations in Kasarani Sub County. This was a key determinant in assessing the level to which the gender of participants determined the success of MIS adoption in the organizations. The results were as follows:

Table 4.6 Distribution of respondents by Gender

	Frequency	Percentage
Male	49	38.3
Female	80	61.7
Total	**129**	**100.0**

The percentage of men involved in CBOs is 38.3% while the women is 61.7%. This shows a significant difference in the interest levels between men and women. The study assumed that men were more interested in technology and were therefore more likely to adopt MIS. Involvement of more men in CBO activities could significantly increase the uptake of MIS.

4.4.3 Distribution of respondents by their Level of Education

The study sought to determine the highest level of schooling attained by each respondent as higher education levels were assumed to be a strong indicator of exposure to technology and knowledge of information systems. Respondents with higher education attainments were assumed to be quicker learners and better adopters of IS than those with lower education.

Table 4.7 Distribution of respondents by their level of education

	Frequency	Percentage
Primary	46	35.6
O Level	51	39.6
Diploma	24	18.8
Graduate	5	3.4
Postgraduate	4	2.7
Total	**129**	**100**

The study as shown on table 4.7 found that 36% of the respondents had primary school education as their highest level of attainment, 40% who were the majority had secondary school education and diploma holders were 19% of the respondents. Those with degree education were 3% and those with post graduate education were 2.7%. This implies that more than half of the people in

the CBOs are exposed to education and can learn a skill and most are likely to appreciate the need for an MIS and its uptake in their organizations.

4.4.4 User involvement in MIS development

The study ought to find out the level of user involvement in MIS development or choice. This was important for the study because as a moderating factor, it was assumed that user involvement in the choice of MIS encouraged the adoption of the system. This is because users need to express their circumstances, interests, likes and dislikes, aspects of culture and daily living that could have a direct influence on the use of MIS. The study assumed that when the end users of MIS were not involved through consultation, they were likely to feel the MIS is an imposition and were less likely to take it up.

Table 4.8 User involvement in MIS development

	Frequency	Percentage
Yes	35	27.5
No	94	72.5
Total	**129**	**100.0**

The results of the study showed that only 27.5% of the study population was consulted in the use of MIS. This means that 72.5% were not involved in any discussions of MIS use. The study assumed that some of these members joined the CBOs after MIS use and had already been passed by the period of consultation. The study also assumed that with the CBOs not using MIS, they had not been consulted on their desire to use MIS systems because many of them expressed interest in the use of MIS.

4.4.5 Years of experience using MIS

The study sought to determine the level of experience the users have with MIS systems. This was important for the study because the study assumed that the more years of MIS use the more likely a user was willing to take up MIS. Fewer years of MIS experience or lack of MIS experience was assumed to make users less eager to take up MIS because people tend to be more open to things they have experience with rather than new things.

Table 4.9 Years of experience using MIS

	Frequency	Percentage
0 to 1 year	88	68.5
1 to 2 years	21	16.1
3 to 4 years	17	12.8
5 to 7 years	3	2.7
Total	**129**	**100**

The table 4.9 shows that majority of CBO members had 0 to 1 year of MIS use at 68.5%. This means that they were likely to be reluctant to take up MIS due to their lack of previous experience and the fear associated with learning and using MIS. Majority of CBO members did not have any experience using MIS therefore it was hard for them to take up MIS without training and positive reinforcement. 16.1% of CBO members had 1-2 years of experience using a MIS. A population of 12.8% had 3 to 4 years MIS experience. 2.7% of CBO members had 5 to 7 years of MIS experience. The number of people who had experience in MIS use were less than those who had access to MIS, meaning that some people in CBOs using MIS need training on MIS use to be able to maximize its uptake.

4.5 Uptake of project information management systems

This section presents study findings in regards to assessing the level of uptake of management information systems in community based organizations. This segment presents information gathered on whether CBOs use management information systems, the types of management information systems used, the platforms compatible with each information system, user involvement in management information system development, the years of experience each user has with MIS use, the categories of management covered by an MIS and the total investment made in the MIS by the CBOs.

4.5.1 Number of CBOs using management information systems

This was intended to measure the spread of MIS use among CBOs in Kasarani Sub County. The study aimed to find out the reach of MIS systems in health focused CBOs because of the

sensitive work they do and their ability to directly influence health outcomes in their respective communities. The number of CBOs using MIS reflected the reach of systems in the area of study.

Table 4.10 Number of CBOs using MIS

	Frequency	**Percentage**
Yes	42	32.9
No	87	67.1
Total	**129**	**100.0**

The number of CBOs using MIS only made up 32.9% of the total population. Those not using MIS made up 67.1% of the population. The results showed that a majority of CBOs did not use MIS in their operations and were missing out on the potential benefits provided by such systems.

4.5.2 Types of MIS used

The study sought to find out the types of MIS in use among the CBOs. This is important to the study as a wide variety of MIS shows dispersion in MIS use. It is believed that the more MIS systems in use, the more knowledge there is in MIS use and the more experience there was bound to be among the community members.

Table 4.11 Types of MIS used

	Frequency	**Percentage**
Raiser's Edge	13	10.1
Neon CRM	15	11.4
Sales Force	15	11.4
No MIS	86	67.1
Total	**129**	**100.0**

The results on table 4.11 showed that there were mainly 4 MIS in use among the CBOs. These were mostly for 3 main interventions by 3 NGOs who had scaled down to the grassroots level.

Those using Raiser's Edge were 10.1% of the population. They were on a HIV intervention project. The Neon CRM platform was in use in 11.4% of the populations CBOs. They were mainly part of a reproductive health intervention project. The Sales Force MIS was in use in 11.4% of the CBOs. They were part of a sponsored food and nutrition health intervention.

4.5.3 Platforms compatible with the MIS

This study ought to determine the platforms on which the individual MIS can be used on. This is important to determine the versatility of availability and access of MIS on platforms other than the traditional computer. Versatility of access on phones, tablets, laptops, android and IOS platforms shows that the system can be used outside the conventional timelines thereby making it easy to access or members who are able to access the systems on their phones at whatever time they wish.

Table 4.12 Platforms compatible with the MIS

	Frequency	**Percentage**
0	86	67.1
4	43	32.9
Total	**129**	**100.0**

The results of the study on table 4.12 showed that all the MIS were very versatile in availability and access and the users were able to access the systems on their computer laptops and phones all the time for all the 32.9% of respondents from organizations using MIS systems.

4.5.4 Categories covered by MIS

The study sought to find out the categories covered by the various MIS systems in use. This is because the versatility of use of a MIS is important for end users. It is assumed that users are likely to adopt a system with more functions than a system with lesser functions. The categories available for choice to the users included; financial management, inventory management, personnel and administration and monitoring and evaluation. The more functions available on a system, the better the system was assumed to be in the study. The study instructed the users to tick the functions available to them from the system.

Table 4.13 Categories covered by MIS

	Frequency	Percentage
0	86	67.1
2	1	0.7
3	27	20.1
4	15	10.7
Total	**129**	**100.0**

68.5% of the users without access to MIS said they had no access to any of the systems. For those with MIS system 0.7% said they had access to only one function in the system. 20.1% had access to 3 functions in the system and only 10.7% of respondents had access to the four functions. Some respondents said that their system had all the functions but their access to some of the functions was either limited or unavailable. The study then asked the respondents to indicate the functions they had access to. The study found that some functions were only available to certain members and not others and that there was data that was retracted to all members on the system and was only available to others outside the CBO higher up in the chain of command.

4.5.5 Total investment in the MIS

The study sought to determine the amount of money each CBO spent on the MIS. The total cost was determined from the addition of software cost, hardware cost, internet and electricity cost, manpower training cost and the cost of recurring maintenance costs. The study assumed that most of the figures were general assumptions of what the CBO members felt that their organizations had spent in acquisition of MIS systems. The study assumed that higher investment costs in MIS were an indicator of higher uptake of MIS.

Table 4.14 Total investment in the MIS

	Frequency	Percentage
0 to 100,000 Kshs	86	67.1
100,000 to 200,000 Kshs	1	0.7
300,000 to 400,000 Kshs	16	10.7
500,000 to 600,000 Kshs	20	16.1
Above 700,000	6	4.0
Total	**129**	**100**

According to the results, majority of CBO members felt that their CBOs had spent between 0 to 100,000 Kshs on MIS. Most of these members belonged to CBOs which were yet to take up MIS. Only 0.7% of CBO members felt that their organization had spent between 100,000 to 200,000 Kshs on MIS. Out of the CBOs that have taken up MIS, 10.7% felt that their CBO total investment in MIS was between Kshs 300,000 to 400,000. Majority of CBO members whose organizations had taken up MIS felt that their organizations had spent approximately Kshs 500,000 to 600,000. Only 4% of the population sampled thought that their CBO had spent above 700,000 Kshs on MIS. While these figures may not be accurate, the study assumed that the respondents gave their assessment based on the spending habits they have witnessed in the CBOs and their approximation of cost of hardware and other services they have in their organizations in comparison to the known market prices of the same equipment and services.

In conclusion the uptake of MIS was found to be low because of the low number of CBOs using MIS as a result of low investment, low user involvement in choice of systems and the low experience and knowledge of users with potential to take up MIS systems. MIS rate of uptake among CBOs was concluded to be slow because of the low number of MIS types and very little diversity in the categories of functions available in the systems and to the users.

Higher investments in MIS, increased numbers of CBOs using MIS, more versatility of MIS and increased functionality of MIS means higher levels of uptake of the systems.

4.6 Financial Factors on the Uptake of Management Information Systems

The study sought to determine the extent to which financial factors influence the uptake of management information systems in community based organizations in Kasarani Sub County. Financial capabilities of CBOs greatly affect the uptake of MIS because CBOs mainly depend on donors for finances and cannot spend what they do not have. The study measured this by determining whether: the CBO management information system software cost affect the budget significantly, the cost of hardware is consistent with budget allocations, and the CBO can afford to train manpower regularly and relevantly and there are no downtimes related to cost of maintenance and utility of MIS. The study used a Likert scale of 1 to 5 with 1 representing very little extent and 5 representing very great extent. The results were tabulated and the mean was obtained.

Table 4.15 Financial Factors and the Uptake of Management Information Systems

Statements	SD	D	N	A	SA	Mean	Standard deviation
The software costs does not affect the budget significantly	85(65.7%)	0	6(4.5%)	0	38(29.8%)	1.10	0.94
The cost of hardware is within CBO budget allocations	68(53%)	20(15.4%)	22(16.8%)	19(14.8%)	0	1.93	0.31
The CBO can afford to train manpower regularly and relevantly	78(60.4%)	21(16.1%)	15(11.9%)	9(7.1%)	6(4.5%)	1.80	0.6
There are no downtimes related to costs of utility and maintenance	39(30.2%)	48(36.9%)	6(4.7%)	33(25.5%)	3(2.7%)	3.40	0.2
Mean of means						**2.05**	

Table 4.15 shows that financial factors affect the uptake of project management information systems significantly in CBOs at an aggregated mean of 2.05. The cost of software was the biggest deterrent to uptake of management information systems in community based organizations with a mean of 1.1 as the highest among the factors considered as its mean was significantly lower than the combined mean of 2.05. 65.7% of respondents strongly disagreed that the cost of software did not affect the budget significantly. 4.5% of the respondents were

neutral to the statement. 29.8% of the respondents agreed that software costs did not affect their budget significantly. The ability of the CBO to train manpower came in as the second influencer of the uptake of project MIS significantly because its value of a mean of 1.8 was lower than the mean of means of 2.05. 60.4% of the respondents strongly disagreed that their CBO could afford to train the manpower regularly and relevantly. 16.1% of respondents disagreed that the CBO could afford to train manpower regularly and relevantly. 11.9% of interviewed respondents were neutral about the statement. 7.1% of the respondents agreed that their organization could afford to train manpower regularly and relevantly. 4.5% of the respondents strongly agree that their CBO can afford to train their manpower regularly and relevantly. The cost of hardware also affected the uptake of project management information systems significantly at a mean of 1.93. 53% of the respondents strongly disagreed that the cost of hardware was within the budget allocated for the CBO. 15.4% of the respondents disagreed that the cost of hardware was within budget allocations. 16.8% of respondents were neutral about hardware costs. 14.8% of respondents agreed that the cost of hardware was within the budget allocations of their CBO. At a mean of 3.4, the costs of utility and maintenance of MIS came in last and did not have a significant influence on the uptake of MIS as its mean is higher than the combined mean of 2.05. Out of the respondents interviewed 30.2% strongly disagreed that there were no downtimes related to the cost of utility and maintenance. 36.9% of the respondents disagreed that there were no downtimes related to the cost of utility and maintenance of MIS. 4.7% of the respondents were neutral about utility costs. 25.5% of the respondents agreed that there were no downtimes related to the costs of utility and maintenance. 2.7% of respondents strongly agreed that there were no downtimes as a result of utility and maintenance costs.

4.7 Technical factors and the uptake of management information systems in CBOs

The study sought to determine how technical factors influence the uptake of management information systems in CBOs. The study sought to measure this by measuring flexibility of input and output of data formats for currentness and timeliness of data, safety of MIS for sensitive information, linkage of MIS to important sites and search engines, integration of all functions to cater to MIS user needs and whether there is timely technical support of the systems when they are having downtimes, system upgrades, hardware malfunctions, network outages and problems with the systems. This was important for the study because the study assumed that users are

more likely to use a system that met all their data needs at work. The study used a 5 point Likert scale with 1 being strongly disagree and 5 being strongly agree The study tabulated the means and then determined the mean of means. The results were as follows

Table 4.16 Technical factors and uptake of project management information systems

Statements	SD	D	N	A	SA	Mean	Standard deviation
The MIS data formats are simple and flexible to use	86(67.1%)	3(1.4%)	0	23(18.1%)	17(13.4%)	2.10	0.61
The organization's MIS is safe for storage of sensitive project information	55(42.6%)	33(25.9%)	0	14(9.4%)	29(22.1%)	2.85	0.29
The MIS is linked to sites of important stakeholders and is easily available on search engines	50(38.9%)	45(34.6%)	0	27(16.1%)	20(10.4%)	2.87	0.3
The MIS has integrated flexibly all the functions needed by the users	60(46.7%)	28(21.8%)	0	41(31.5%)	0	1.95	0.4
The MIS provider gives timely technical support for the CBOs	46(35.9%)	42(32.6%)	0	23(18.1%)	17(13.4%)	2.08	0.6
Mean of means						**2.96**	

The results of the study on table 4.16 show that technical factors do affect the uptake of project management information systems in CBOs at an aggregated mean of 2.96. The study found that MIS flexibility to accommodate user needs at a 1.95 mean was the biggest determinant that affected the uptake of MIS because the mean is significantly lower than the combined mean. 46.7% of respondents strongly disagreed that their MIS had integrated all the functions needed by the users. 21.8% of respondents disagree that their MIS had integrated functions heeded by users. 31.5% agreed that their MIS had integrated all the functions they need to use in their organization. The availability of technical support at 2.08 mean had significant influence on the uptake of project MIS, because the mean was at a lower value than the combined mean of 2.96.
35.9% of respondents strongly disagreed to getting timely technical support from their MIS producer. 32.6% of respondents disagreed that they were getting timely technical support. 18.1% of respondents agreed that there was timely technical support from their MIS provider. 13.4% of

respondents strongly agreed that there was timely technical support from their MIS provider. The study also found that data formats on MIS had significant influence on MIS adoption at a mean of 2.10 as its mean was lower than the combined mean of 2.96. 67.1% of the respondents strongly disagreed that data formats were flexible to ensure currentness and timeliness of data. 1.4% of the respondents disagreed that the data formats were simple and flexible to use. 18.1% of respondents agreed that the data formats on their MIS were flexible. 13.4% of respondents strongly agreed that the data formats on their MIS were flexible to ensure currentness and timeliness of data. MIS safety had moderate influence on the adoption of management information systems in CBOs at a mean of 2.85 against the combined mean of 2.96. 42.5% of respondents strongly disagreed that the MIS was safe for storage of sensitive project information. 25.9% of respondents disagreed that the MIS was safe for storage of sensitive project information 9.4% of respondents agreed that their MIS was safe for storage of project information. 22.1% of respondents strongly agreed that their MIS was safe for storage of sensitive project information. Lastly, the study found that linkage of MIS to important sites at 2.87 mean against the combined mean of 2.96 is the least determinant of the uptake of MIS. 38.9% of respondents strongly disagreed that their MIS was linked to sites of important stakeholders and was easily available on search engines. 34.6% of respondents disagree that the MIS was linked to sites of important stakeholders. 16.1% of respondents agreed that their MIS was linked to sites of shareholders and search engines. 10.4% of respondents strongly agreed that their MIS was linked to sites of important stakeholders and was easily available on search engines.

4.8 Organizational Leadership and uptake of Management Information Systems

The study sought to determine to what extent organizational leadership has any influence on the uptake of management information systems in CBOs. This was an important part for the study because the leadership of an organization can lead members to take up MIS or to abstain all together. The study measured this using the following parameters: the use of MIS was initiated by the managing committee, the CBO encourages administrative work on the MIS by rewarding MIS users, CBO leadership allocates enough resources for acquisition of MIS purchases and training and networking of leaders with stakeholders through MIS has reduced duplication of efforts and enabled easy M&E.

Table 4.17 Organizational Leadership and uptake of Management Information Systems

Statements	SD	D	N	A	SA	Mean	Standard deviation
The use of MIS systems was initiated by the managing committee	86(67.1%)	2(1.4%)	0	27(20.3%)	14(11.2%)	2.63	0.93
The CBO encourages administrative work on the MIS by rewarding MIS users	0	72(55.7%)	34(26.2%)	18(14.1%)	5(4%)	2.95	0.40
CBO leadership allocates enough resources for MIS purchases and training	86(67.1%)	2(1.3%)	0	13(10.1%)	28(21.5%)	2.74	0.28
Networking of leaders with stakeholders through MIS has reduced duplication of efforts and enabled M & E	2(1.4%)	86(67.1%)	0	27(20.8%)	14(10.7%)	2.76	0.96
Mean of means						**2.76**	

The study showed that organizational leadership had moderate influence on uptake of project MIS at an aggregated mean of 2.76 on table 4.17. Initiation of MIS by the management committee had the highest influence on the MIS uptake at a significant mean of 2.63 against the combined mean of 2.76. 67.1% of respondents strongly disagreed that the use of MIS systems was initiated by the managing committee while 1.4% disagreed that the use of MIS was initiated by the managing committee. 20.3% agreed that the use of MIS was initiated by the managing committee and 11.2% strongly agreed that MIS was initiated by the managing committee. Leadership allocation of MIS resources influenced the uptake of MIS moderately in the CBOs at a mean of 2.74 against the combined mean of 2.76. 67.1% of respondents strongly disagreed that CBO leadership allocated enough resources for MIS purchases and training while 1.3% disagreed that there was enough allocation for MIS.10.1% of the respondents of the respondents agreed that CBO leadership allocated enough resources for MIS use. 21.5% of respondents strongly agreed that the leadership of their CBO allocated enough resources for MIS use and purchases. Networking through MIS moderately influenced the uptake of MIS at a mean of 2.76 against the aggregate mean of 2.76. 1.4% of the respondents strongly disagree that networking influenced MIS uptake. 67.1% of the respondents disagreed that networking had influenced the uptake of MIS. 20.8% of the respondents agreed that networking had influenced MIS uptake

while 10.7% of the respondents strongly agree that networking had influenced MIS uptake in their organizations. Rewarding of MIS users is the least likely influencer of uptake of MIS in CBOs at a rating of 2.95 against the aggregate mean of 2.76. 55.7% of the respondents disagree that rewarding of users has increased MIS use. 26.2% of respondents are neutral about rewards increasing MIS uptake. 14.1% of respondents agree that rewarding of users had increased MIS uptake while only 4% strongly agreed that MIS use had increased as a result of rewards.

4.9 User attitude and the uptake of management information systems in CBOs

The study sought to determine the extent to which user attitude influenced the uptake of management information systems in community based organizations. This was important for the study because it assumed that the user of the system uses MIS if they have positive attitude towards the system. To measure the user attitude, the study measured: user knowledge and experience in MIS use, improved user networking ability and interactivity as a result of MIS and user expectations have been met through improved service delivery as a result of the MIS. The study used a 5 point Likert scale measuring from very little extent, little extent, and neutral, great extent to very great extent.

Table 4.18 User attitude and the uptake of management information systems in CBOs

Statements	SD	D	N	A	SA	Mean	Standard deviation
Users have adequate knowledge and experience of MIS use	83(64.5%)	38(29.2%)	0	6(5%)	2(1.3%)	1.95	0.40
MIS has improved user networking ability and interactivity	66(52.2%)	21(16.1%)	0	40(30.1%)	2(1.4%)	2.50	0.12
User and CBO performance have improved as a result of MIS use	59(45.4%)	37(28.6%)	0	23(18.2%)	10(7.8%)	2.26	0.86
User expectations have been met through improved MIS service delivery	87(67.5%)	14(11%)	0	28(21.5%)	0	1.96	0.42
Mean of means						**2.1**	

The findings according to table 4.18 show that user attitude has a significant influence on uptake of management information systems with an aggregated mean of 2.1. User knowledge and attitude is the highest determinant of user uptake of MIS with a mean of 1.95 against a combined mean of 2.1. 64.5% of the respondents strongly disagree that users had adequate knowledge and experience of MIS use. 29.2% of the respondents disagree that users have adequate knowledge and experience with MIS use. 5% of users agree that there is adequate knowledge and experience using MIS. Only 1.3% of users strongly agreed that users had adequate knowledge and experience using MIS. User expectations has a significant influence of uptake of information systems at a mean of 1.96 against an aggregated mean of 2.1. 67.5% of the respondents strongly disagreed that user expectations had been met by the MIS. 11% of respondents disagreed that user expectations had been met by MIS use. 21.5% of respondents agree that user expectations had been met by MIS use. Improved user and CBO performance has moderate influence on the uptake of MIS at a mean of 2.26 against a combined mean of 2.1. 45.4% of respondents strongly disagreed that user and CBO performance had increased MIS as a result of MIS uptake. 28.6% disagreed that user and CBO performance had improved as a result of MIS use. 18.2% of respondents agreed that user and CBO performance had improved as a result of MIS use. Only 7.8% of the respondents strongly agreed that performance had improved as a result of MIS use. Improved networking ability and interactivity influences uptake of MIS in CBOs does not have significant influence on MIS uptake at a mean of 2.5 against the aggregate mean of 2.1. 52.2% of respondents strongly disagreed that MIS had improved user networking ability and interactivity. 16.1% of respondents disagreed that MIS had improved user networking ability and interactivity. 30.2% of the respondents agreed that MIS had improved user networking ability and interactivity. Only 1.3% of respondents strongly agreed that MIS had improved user networking ability and interactivity in their organizations.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the findings of the study incorporated with discussions comparing literature review and the findings of the study. The chapter will discuss recommendations based on the study and suggest areas that may be in need of further studies.

5.2 Summary of research findings

The purpose of the study was determine the factors that influence the uptake of management information systems in community based organizations in Kasarani Sub County. The study results showed that no one particular factor by itself influenced uptake of MIS in totality but the combined interaction of financial factors, technical factors, organizational leadership and user attitude were important factors that influenced the uptake of MIS in community based organizations. The findings were summarized according to the objectives of the study.

5.2.1 Financial factors and uptake of project management information systems

The findings of this study showed that financial factors: software costs, hardware costs, user training costs and maintenance costs were an important influence on the uptake of project management information systems. Financial factors significantly affected the uptake of project management information systems in CBOs at an aggregated mean of 2.05. The cost of software was the biggest deterrent to uptake of management information systems in community based organizations with a mean of 1.1 being significantly lower than the aggregate mean of 2.05. 65.7% of respondents disagreed that the cost of software did not affect the budget significantly. 4.5% of the respondents were neutral to the statement. 29.8% of the respondents agreed that software costs did not affect their budget significantly. The ability of the CBO to train manpower came in as the second, significantly affecting the uptake of project MIS with a mean of 1.8 significantly lower in comparison to the aggregate mean of 2.05. 76.5% of the respondents disagreed that their CBO could afford to train the manpower regularly and relevantly. 11.9% of

interviewed respondents were neutral about the statement. 7.1% of the respondents agreed that their organization could afford to train manpower regularly and relevantly. The cost of hardware also affected the uptake of project management information systems significantly at a mean of 1.93 against the aggregate mean of 2.05. 68.4% of the respondents disagreed that the cost of hardware was within the budget allocated for the CBO. 16.8% of respondents were neutral about hardware costs. 14.8% of respondents agreed that the cost of hardware was within the budget allocations of their CBO. At a mean of 3.4 against the aggregate mean of 2.05, the costs of utility and maintenance of MIS does not have a significant influence on MIS uptake. Out of the respondents interviewed, 67.1% disagreed that there were no downtimes related to the cost of utility and maintenance of MIS. 4.7% of the respondents were neutral about utility costs. 28.2% of the respondents agreed that there were no downtimes related to the costs of utility and maintenance of MIS.

5.2.2 Technical factors and uptake of project management information systems

The results of the study showed that technical factors affected the uptake of project management information systems in CBOs to at an aggregated mean of 2.96. The study found that MIS flexibility to accommodate user needs at a 1.95 mean was the biggest influence on the uptake of MIS. Users were attracted to a system that catered to all the needs they felt were important to their work. Systems that did not meet work needs were less attractive and were unlikely to influence users to adopt them. 68.5% of respondents strongly disagreed that their MIS had integrated all the functions needed by the users. 31.5% agreed that their MIS had integrated all the functions they need to use in their organization. The availability of technical support at 2.08 had a significant influence on the uptake of project MIS. 68.5% of respondents strongly disagreed to getting timely technical support from their MIS producer. 32.9% of respondents agreed that there was timely technical support from their MIS provider. Users of MIS were attracted to systems whose providers were empathetic and quick in providing the right support whenever they needed it. The study also found that data formats on MIS had significantly affected MIS adoption at a mean of 2.10. 68.5% of the respondents strongly disagreed that data formats were flexible to ensure currentness and timeliness of data. 31.5% of respondents agreed that the data formats on their MIS were flexible. Users were likely to take up a system that supported a variety of data entry formats for input and output. MIS safety had moderate

influence on the adoption of management information systems in CBOs at a mean of 2.85. Users were more likely to adopt a system that was safe to store their data in and whose vulnerability was significantly lower. 70.5% of respondents strongly disagreed that the MIS was safe for storage of sensitive project information. 29.5% of respondents agreed that their MIS was safe for storage of project information. Lastly, the study found that linkage of MIS to important sites at 2.87 mean was the least determinant of the uptake of MIS. 73.5% of respondents strongly disagreed that their MIS was linked to sites of important stakeholders and was easily available on search engines. 26.5% of respondents agreed that their MIS was linked to sites of shareholders and search engines.

5.2.3 Organizational leadership and uptake of project management information systems

The study showed that organizational leadership had moderate influence on uptake of project MIS at an aggregated mean of 2.76. Initiation of MIS by the management committee had the highest influence on the MIS uptake at a significant mean of 2.63 which was significantly lower than the aggregate mean of 2.76. 68.5% of respondents disagreed that the use of MIS systems was initiated by the managing committee while 31.5% agreed that the use of MIS was initiated by the managing committee. Many respondents felt that if their leaders introduced MIS to their organizations, they were more likely to be influenced to take up information systems because they had a lot of respect for them. Leadership allocation of MIS resources influenced the uptake of MIS significantly in the CBOs at a mean of 2.74 which is slightly lower than the combined mean of 2.76. 67.1% of respondents disagreed that CBO leadership allocated enough resources for MIS purchases and training. 32.9% of the respondents of the respondents agreed that CBO leadership allocated enough resources for MIS use. The respondents whose organizations allocated funds for MIS related purchases and spending showed a higher uptake of MIS than those whose organizations did not allocate funds for MIS. Networking through MIS moderately influenced the uptake of MIS at a mean of 2.76. Respondents in the study believed that the relationships they formed with others over the MIS were likely to keep them using the system because it made them feel part of something important and added to their self-esteem. 69.5% of the respondents disagreed that networking had influenced the uptake of MIS. 30.5% of the respondents agreed that networking had influenced MIS uptake in their organizations.

Rewarding of MIS users was the least likely to influence uptake of MIS in CBOs at a mean of 2.95 which is higher than the aggregate mean of 2.76. 55.7% of the respondents disagree that rewarding of users has increased MIS use. 26.2% of respondents are neutral about rewards increasing MIS uptake. 18.1% of respondents agree that rewarding of users had increased MIS uptake. Respondents thought that rewards, however nice were not a very significant factor in their decision to take up MIS but were appreciated.

5.2.4 User attitude and uptake of project management information systems

The findings show that user attitude has a significant influence on uptake of management information systems with an aggregated mean of 2.1. User knowledge and attitude is the biggest determinant of user uptake of MIS with a mean of 1.95 which is lower than the combined mean of 2.1. 93.7% of the respondents disagree that users had adequate knowledge and experience of MIS use. Only 6.3% of users agreed that users had adequate knowledge and experience using MIS. Users were more likely to take up MIS if they have knowledge and experience using systems. User expectations has a significant influence of uptake of information systems at a mean of 1.96 which is lower than the aggregated mean of 2.1. 78.5% of the respondents disagreed that user expectations had been met by the MIS. Only 21.5% of the respondents agreed that user expectations have been met through improved MIS service delivery. Users were more likely to take up MIS if it met their work expectations and improved work efficacy. Improved user and CBO performance had moderate influence on the uptake of MIS at a mean of 2.26 higher than the combined mean of 2.1. 68.3% of respondents strongly disagreed that user and CBO performance had increased MIS as a result of MIS uptake. 31.7% of respondents agreed that user and CBO performance had improved as a result of MIS use. Users liked systems that improved their performance as individuals and as an organization. Improved networking ability and interactivity influences uptake of MIS in CBOs moderately at a mean of 2.5 against a combined mean of 2.1. 74% of respondents disagreed that MIS had improved user networking ability and interactivity. 26% of the respondents agreed that MIS had improved user networking ability and interactivity. Users liked systems that were interactive and communication with others was made easier. They also preferred systems that made networking with other stakeholders and users easier.

5.3 Discussion of research findings

5.3.1 Financial factors and uptake of MIS

The findings of this study showed that financial factors influenced the uptake of project management information systems. Financial factors significantly affect the uptake of project management information systems in CBOs at an aggregated mean of 2.05. The cost of software significantly affects the uptake of MIS and is the biggest deterrent to uptake of management information systems in community based organizations with a mean of 1.1 being the highest among the factors considered. The ability of the CBO to train manpower influenced of the uptake of project MIS significantly with a mean of 1.8. The cost of hardware also affected the uptake of project management information systems significantly at a mean of 1.93. At a mean of 3.4, the costs of utility and maintenance of MIS was the least significant factor affecting the uptake of MIS in CBOs. The results are consistent with (Maharaj & Wamuyu, 2011) that development of applications is costly because the project management IS most times has to be customized to meet the needs and circumstances around a CBO. This means that additional funds are needed on top of the purchase price. Hardware, including computers, laptops, Wi-Fi Reuters, mobile phones and tablets is required to keep CBO members and community health workers connected to the IS at all times in spite of their location. The results showed that CBOs could benefit from management information system uptake if there was enough resources available to them for spending in acquiring MIS, training the users on MIS use and acquisition of hardware to use the MIS on. Payment for maintenance and use of products related to MIS seemed to affect the uptake of MIS to a very little extent.

5.3.2 Technical factors and uptake of project management information systems

The results of the study show that technical factors do affect the uptake of project management information systems in CBOs to at an aggregated mean of 2.96. The study found that MIS flexibility to accommodate user needs at a 1.95 mean was the biggest determinant that affected the uptake of MIS. The availability of technical support at 2.08 mean had moderate influence on the uptake of project MIS. The study also found that data formats on MIS had moderate influence on MIS adoption at a mean of 2.10. MIS safety to a little extent influenced the adoption of management information systems in CBOs at a mean of 2.85. Lastly, the study found

that linkage of MIS to important sites at 2.87 mean is the least determinant of the uptake of MIS. The results show that users of MIS were more likely to take up systems if they were flexible to meet user needs and according to (Shih & Huang, 2009) system quality had a significant influence on the decision to take up systems and technology. (Ainin S., 2012) Support the findings that there is a significant relationship between the quality of an MIS and user satisfaction that leads to significant uptake of project MIS.

5.3.3 Organizational leadership and uptake of project management information systems

The study showed that organizational leadership moderately influenced the uptake of project MIS at an aggregated mean of 2.76. Initiation of MIS by the management committee had the highest influence on the MIS uptake at a significant mean of 2.63. Leadership allocation of MIS resources influenced the uptake of MIS significantly in the CBOs at a mean of 2.74. Networking through MIS moderately influenced the uptake of MIS at a mean of 2.76. Rewarding of MIS users had the least influencer of uptake of MIS in CBOs at a rating of 2.95. The study findings showed that CBO members were likely to take up MIS if it was introduced to them by the leaders therefore, it is important to empower CBO leaders with skills and they will take up MIS. According to (Shih & Huang, 2009) strong managerial support leads to direct positive uptake technology as users perceive that it is important to the organization to take up use of management information systems. Allocation of resources for MIS use by the organization leadership is also very important for MIS uptake because it is a reflection of the importance attached to MIS use by the management. Networks formed by users of MIS keep users locked on its use. When users are able to connect with other users over the system and form perceived friendships, they are likely to take up MIS. When networks enable users to share their activities, stories of success and challenges, the possibility of duplication of efforts is reduced significantly and monitoring of projects becomes easier on a local level, national level and international level. When users are rewarded to take up MIS, they may be motivated to do so but this is hardly sustainable in the long run.

5.3.4 User attitude and uptake of project management information systems

The findings show that user attitude has a significant influence on uptake of management information systems with an aggregated mean of 2.1. User knowledge and attitude is the highest

determinant of user uptake of MIS with a mean of 1.95. User expectations has a significant influence of uptake of information systems at a mean of 1.96. Improved user and CBO performance has moderate influence on the uptake of MIS at a mean of 2.26. Improved networking ability and interactivity influences uptake of MIS in CBOs moderately at a mean of 2.5. The findings relate to (Ramayah & Aafaqi, 2004) who state that user knowledge and self-efficacy in operations of a system is a big influencer of MIS uptake and lack of user knowledge can be a great impediment to uptake of management information systems.

5.4 Conclusion of the study findings

This findings of this study reflect the reality of many community based organizations where many community based organizations in Kasarani Sub County have not taken up MIS at only a 32% uptake rate. This is regardless of the impact that management information systems have on organizations and their increased availability in the public domain. It was found that many CBOs wanted and were interested in uptake of MIS but several factors were holding them back. A lack of finances for acquisition of MIS and accompanying hardware was found to be negatively impacting the adoption of MIS with more than 50% of the respondents studied citing financial issues for low uptake. The study also found that user training costs for most organizations were high and out of reach for most of the CBOs. It was also found that costs of related services like internet subscriptions, electricity and regular system updates was a hindrance to uptake of MIS. The study also found that the complex makeup of information systems: the system quality, information input and output quality, service provision quality of the MIS and system safety contributed to low uptake of MIS. Lack of proper technical support was also responsible for poor MIS uptake in community based organizations. Weak organizational leadership, low levels of managerial support for MIS uptake and low uptake of MIS among leadership of CBOs contributed to poor uptake of MIS. Poor user attitude towards MIS, advanced age of CBO members, and limited skills in MIS use has greatly influenced low levels of MIS uptake being experienced in CBOs. The study therefore concluded that MIS systems uptake was likely to be taken up by users if there was sufficient training among users, proper funds allocation in favor of MIS related activities, strong positive leaders and simplification of complex MIS systems and provision if proper technical support as factors that could significantly increase the uptake of MIS systems among CBOs in Kasarani county and possibly the whole country.

5.5 Recommendations of the study

The study made the following recommendations.

1. The study recommends that donors to CBOs to be more lenient with their conditions on the spending of funds by community based organizations to enable them spend money on purchasing and maintenance of Management information systems. Donors should also not change systems currently in use by CBOs unless extremely necessary.
2. The study suggested that CBOs purchase affordable systems that require fewer customizations and that operate over multiple platforms.
3. The study suggested that systems be simplified and custom done to make the systems safer and easier for users to understand. The system should be easy to operate all components and communicating with other users should be simplified.
4. The study suggested training of Management team members on MIS use because they have a significant sway on whether the other members take up management information systems. Management should support MIS use and reward appropriately those who are championing for MIS use.
5. The study suggested the training of CBO members together periodically can be done by CBOs once they introduce management information systems to their organizations to encourage users to learn from each other and to retain the knowledge.

5.6 Suggestions for further studies

Based on the study findings and limitations assumed by the study, suggestions for further studies are as follows:

The study suggests that further studies that focus on more community based organizations, the government entities and non-governmental organizations other than those focused on health can be done to compare results to determine whether low uptake is only in the health focused sector.

Secondly, the study focused on an urban environment where technology is easily accessible. Future studies can explore rural areas with lower penetration of technology, lower network coverage and whose data is equally important for equally urgent and sensitive sectors and make a countrywide observation of MIS penetration.

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APPENDIX 1

LETTER OF TRANSMITTAL

ANITA KYALO
PO BO 69654-0400
NAIROBI
01-11-2017

DEAR SIR/MADAM

RE: REQUEST TO COLLECT DATA

I am a Master of Arts (Project Planning and Management) student from the University of Nairobi conducting research titled "*Factors Influencing the Uptake of Management Information Systems in Health Focused Community Based Organizations."*

For the success of this study you are kindly asked to give your honest answers to all the questions. Do not write your name on the question paper and do not leave any of the questions unanswered. Your participation will be highly appreciated**.**

Yours Faithfully,

Mutanu Kyalo
Researcher

APPENDIX 2

QUESTIONNAIRE TO THE RESPONDENTS

I am a Master of Arts (Project Planning and Management) student from the University of Nairobi conducting research titled "Factors Influencing the Uptake of Management Information Systems in Health Focused Community Based Organizations." Your organization has been chosen to be a part of the study. For the success of this study you are kindly asked to give your honest answers to all the questions. Do not write your name on the question paper and do not leave any of the questions unanswered. Your participation will be highly appreciated.

SECTION 1: Organization information

1. On what area of health is the CBO focused?
2. How many people does the CBO serve monthly on average?

   1-200 people [ ] 51-100 people [ ] 101-150 people [ ]

   151-200 people [ ] More than 200 people [ ]
3. How long have you served in the CBO?

   Less than 1 year [ ] 1-3 years [ ] 3 to 5 years [ ] 5-10 years [ ]

   More than 10 years [ ]

SECTION 2: Demographic information

1. Designation _____
2. Gender M [ ] F [ ]
3. Indicate your age:

   Below 25 **[ ]** 25-34 years **[ ]** 35- 44 years [ ] 45- 54 years [ ]

   55 and above [ ]
4. What is your level of education?

   Primary [ ] O Level [ ] Diploma [ ] Graduate [ ] Post Graduate [ ]

SECTION 3: Uptake of Project Management information Systems

1. Does your CBO use a PMIS? Yes [ ] No [ ]
2. If yes name the one you use_____
3. With how a many platforms is the MIS compatible with? _____
4. Are members within the CBO part of the collective MIS development process? Yes [ ] No [ ]
5. How many years of experience with MIS do you have?

   Less than 1 [ ] 1-2 years [ ] 3-4 years [ ] 5-6 years [ ] Above 7 years [ ]

6. Indicate the category covered by the MIS. Tick against all that apply

   Financial management system [ ] Inventory Management [ ] Personnel and Administration [ ] Monitoring & Evaluation [ ]

7. What is the total investment on the IT system project? Indicate the amount in Kshs against each item:

a) Hardware items _____
b) Software development cost _____
c) Internet and electricity cost _____
d) Manpower training cost _____
e) Maintenance of the all components (recurring) _____

SECTION 4: FINANCIAL FACTORS

Tick the most appropriate response against each statement. Use the scale provided

1 = (SD) Strongly Disagree, 2 = (D) Disagree, 3 = (N) Neutral, 4 = (A) Agree, 5 = (SA) Strongly Agree

Financial factors	**SD [1]**	**D [2]**	**N [3]**	**A [4]**	**SA [5]**
The CBO management information system software costs do not affect the budget significantly					
The cost of hardware is within CBO budget allocations					
The CBO can afford to train manpower regularly and relevantly					
Downtimes are experienced in relation to costs of utility and maintenance					

SECTION 5: TECHNICAL FACTORS

Tick the appropriate response against each statement. Use the scale provided

1 = (SD) Strongly Disagree, 2 = (D) Disagree, 3 = (N) Neutral, 4 = (A) Agree, 5 = (SA) Strongly Agree

Technical factors	**SD [1]**	**D [2]**	**N [3]**	**A [4]**	**SA [5]**
The MIS data formats are simple and flexible to use					
The organization's MIS is safe for storage of sensitive project information					
The MIS is linked to sites of important stakeholders and is easily available on search engines					
The MIS has integrated flexibly all the functions needed by the users					
The MIS provider gives timely technical support for the CBOs					

SECTION 6: ORGANIZATIONAL LEADERSHIP

Tick the appropriate response against each statement. Use the scale provided

1 = (SD) Strongly Disagree, 2 = (D) Disagree, 3 = (N) Neutral, 4 = (A) Agree, 5 = (SA) Strongly Agree

Organizational Leadership	**SD [1]**	**D [2]**	**N [3]**	**A[4]**	**SA[5]**
The use of MIS systems was initiated by the managing committee					
The CBO encourages administrative work on the MIS by rewarding MIS users					
CBO leadership allocates enough resources for MIS purchases and training					
Networking of leaders with stakeholders through MIS has reduced duplication of efforts and enabled prompt M & E					

SECTION 7: STAFF ATTITUDE

Tick the most appropriate response against each statement. Use the scale provided

1 = (SD) Strongly Disagree, 2 = (D) Disagree, 3 = (N) Neutral, 4 = (A) Agree, 5 = (SA) Strongly Agree

Staff attitude	**SD [1]**	**D [2]**	**N [3]**	**A[4]**	**SA[5]**
Users have adequate knowledge and experience of MIS use					
MIS has improved user networking ability and interactivity with other users					
MIS has improved work performance of the workers in the CBO and the CBO					
User expectations have been met through improved MIS service delivery					

APPENDIX 3

Table 4.20 Krejcie and Morgan table

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

THIS IS TO CERTIFY THAT:
MISS. ANITA MUTANU KYALO
of UNIVERSITY OF NAIROBI, 69654-400 Nairobi,has been permitted to conduct research in *Nairobi County*

on the topic: *FACTORS INFLUENCING UPTAKE OF PROJECT MANAGEMENT INFORMATION SYSTEMS IN HEALTH FOCUSED COMMUNITY BASED ORGANIZATIONS: A CASE OF KASARANI SUB-COUNTY, NAIROBI COUNTY,KENYA*

for the period ending:
24th November,2018

Permit No : NACOSTI/P/17/85151/20288
Date Of Issue : 4th December,2017
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation