# FACTORS INFLUENCING SUSTAINABILITY OF COUNTY FUNDED PROJECTS IN MBOONI SUB COUNTY, MAKUENI COUNTY-KENYA

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This Research Project Report is submitted to the Department of Extra-Mural Studies in Partial Fulfilment for the Requirements for the Award of the Degree of Masters of Arts in Project Planning and Management of the University of Nairobi

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## DECLARATION

This research project report is my original work and has not been presented for an award in any other university or institution of learning.

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Kithome Obadiah Mutinda Date

L50/70054/2013

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

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## DEDICATION

This research is dedicated to my beloved parents James Kithome and Pauline Kithome for their love, patience and encouragement throughout the research period.

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## ABBREVIATIONS/ACRONYMS

| | |
|---|---|
| **AIDs** | Acquired Immune Deficiency Syndrome |
| **AWP** | Annual Work Plan |
| **CFP** | County Funded Projects |
| **CIDP** | County Integrated Development Plan |
| **COK** | Constitution of Kenya |
| **ETA** | Employment and Training Administration |
| **HIV** | Human Immunodeficiency Virus |
| **IDPs** | Internally Displaced Peoples |
| **M &E** | Monitoring and Evaluation |
| **MCH** | Maternal & Child Health |
| **MCPS** | Mega Construction Projects |
| **MDGs** | Millennium Development Goals |
| **MIS** | Management Information Systems |
| **NACOSTI** | National Commission of Science, Technology and Innovation |
| **NGOs** | Non-Governmental Organizations |
| **OECD** | Organization for Economic Co-Operation and Development |
| **PMC** | Project Management Committee |
| **PME** | Participatory Monitoring & Evaluation |
| **SPSS** | Statistical Package for Social Sciences |
| **UNEP** | United Nations Environment Programme |

## ABSTRACT

In Kenya, a new constitution was voted in 2010 and promulgated on 27th August, 2010.This 2010 constitution paved way for the devolved system of County Governance after the March 4th 2013 elections. Chapter 11 (Cap 11) of the COK 2010-Devolved Government - specifically provides for the setting up of the County Governments. The purpose of this research was to establish the factors influencing sustainability of County Funded Projects in Mbooni Sub-County, Makueni County. The study focussed on Mbooni Sub-County, Makueni County and the objectives were, to determine how stakeholders' participation influence sustainability of County Funded Projects in Mbooni Sub-County, to establish the influence of monitoring and evaluation on sustainability of County Funded Projects, to determine the influence of staff competence on sustainability of County Funded Projects and to establish to what extent availability of resources influences sustainability of County Funded Projects in Mbooni Sub-County. The target population of this study was sub-county departmental heads, project management committee members and chief officers. The study targeted a total population of 80 who included the project management committee members, sub-county departmental heads and chief officers who are directly and actively involved in the implementation of County Funded Projects and are deemed to have the required knowledge on sustainability of projects. Krejcie and Morgan table for determining sample size for a finite population was used to select 72 respondents. A descriptive survey research design was adopted for this study. The study used questionnaires and interview guide as instruments of data collection. Questionnaires collected data from project management committee members while interview guide was used to collect data from the county chief officers and sub-county departmental heads. Data was analysed using Statistical Package for Social Sciences (SPSS) on the basis of the specific objectives and hypotheses. Findings of the research were presented in tables using frequencies and percentages. The key findings led to major recommendations of the research. On the key findings and recommendations the researcher found that stakeholders' participation, monitoring and evaluation, staff competence and availability of resources play a fundamental role in influencing sustainability of County Funded Projects. The study recommends that the level of stakeholders' participation in project planning and implementation should be increased to enhance sustainability of County Funded Projects. The Government of Makueni County should ensure it puts in place effective and efficient monitoring and evaluation systems that are participatory in nature. Staff competence should also be considered as an essential factor influencing sustainability of County Funded Projects. Lastly, Government of Makueni County should ensure that the necessary resources to maintain sustainability of County Funded Projects in Mbooni Sub-County are provided in time to ensure sustainable development in the county.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background information to the study

In Kenya, a new constitution was elected in 2010 and promulgated on 27th August, 2010. This 2010 constitution paved way for the devolved system of County Governance after the March 4th 2013 elections. The Brunt Land Commission defines sustainable development in its 1987 report as *'development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'* (World Bank 2005). A number of writers perceive sustainable community based development projects differently. According to Roy (2003), development is for the people and by the people. His argument was that, the heart of sustainable development is determined by the people, which can be attributed to change of people's attitude leading to change in their habits and lifestyle.

From a global perspective, county funded development projects are involved in a wide range of activities and programmes at national and regional levels all aimed at improving the well-being of poor people. Development agencies such as Faith Based Organizations and Non-Governmental such as United Nations Environmental Programme and Community Based Organization have historically provided services to needy populations and contributed significantly to the strengthening of many individuals' life, families and communities (Vidal ,2001).Faith Based Organizations and Community Based Organizations are often located in regions and neighbourhoods where especially needy people live. These organizations tend to have scarce resources, yet tend to make large contributions to society .Conceptually, development projects undertaken by County Governments are "asset building" that improves the quality of life among residents low-to-moderate income communities (Vidal 2001).

Nationwide, a great number of people are being positively impacted by County Funded Projects. The focus of County Funded Projects includes interventions in Education, Water, Agriculture, Livestock and Food Security, Transport and Infrastructure among others. County Funded Projects are designed and planned for a certain period of time called gestation period or life span after which they come to an end and the community is expected to take over and run the project and make it self-sustaining in the long run. In Mbooni Sub-County, Governments both National and County and Non-Governmental Organizations (NGOs) in partnership with communities do establish development projects based on needs assessment, however, the projects collapse shortly following the phase out of the funding agency. A World Vision (2009) evaluation report analysis shows that most community development projects have failed to be operational after the funding organizations withdraw their support.

### 1.2 Statement of the problem

County Governments have the objective of helping to improve the livelihood of the locals either through direct participation or providing funding to supplement the national government's allocation to the various sectors. Most of these funds provided by County Government are project driven short-term funds, which do not factor in the whole funding mechanism policies that will ensure that such projects become sustainable after the county funds have been withdrawn (Heeks & Baark 1998). To ensure project sustainability, it is crucial to have well thought out strategy that only looks at how a County Funded Project is completed, but also the means to continue with the project after the county funds have been withdrawn (Young and Hampshire 2000). One example of a project that has failed to be sustainable is Mukundi Water Project in Mbooni Sub-County which has been funded by the County Government.

There is a significant increase in activities from County Government in Mbooni Sub-County especially in areas such as Water and Health where the National Government has failed to deliver effective services to its people. Despite this problem, little has been done to establish the factors influencing sustainability of County Funded Projects in Mbooni Sub-County. Ababa (2013) in a study focussed on factors influencing sustainability of rural community based water projects in Mtito-Andei; Kibwezi Sub-County, Kenya. This possesses a gap which this study sought to fill through an establishment of the factors that influence sustainability of County Funded Projects in Mbooni Sub- County-Makueni County.

### 1.3 Purpose of the study

The purpose of this research was to establish the factors influencing sustainability of County Funded Projects in Mbooni Sub-County.

### 1.4 Research Objectives

The study was guided by the following objectives:

i. To determine how stakeholders' participation influence sustainability of County Funded Projects in Mbooni Sub-County, Makueni County.
ii. To establish the influence of monitoring and evaluation on sustainability of County Funded Projects in Mbooni Sub-County, Makueni County.
iii. To determine the influence of staff competence on sustainability of County Funded Projects in Mbooni Sub-County, Makueni County.
iv. To establish the extent to which availability of resources influence sustainability of County Funded Projects in Mbooni Sub-County, Makueni County.

## 1.5 Research Hypotheses

The study sought to test the following hypotheses:

Ho1: There is no significant relationship between stakeholders' participation and sustainability of County Funded Projects in Mbooni Sub-County.

Ho2: There is no significant relationship between monitoring and evaluation and sustainability of County Funded Projects in Mbooni Sub-County.

Ho3: There is no significant relationship between competence of staff and sustainability of County Funded Projects in Mbooni Sub-County.

Ho4: There is no significant relationship between availability of resources and sustainability of County Funded Projects in Mbooni Sub-County.

## 1.6 Significance of the study

The study would play an instrumental role in identifying and also making an assessment of the factors that influence sustainability of County Funded Projects in Mbooni Sub-County. Lessons drawn from this study would be employed by the local communities, implementing partners, donors and international NGOs to address the sustainability challenges and plan for better means of implementing sustainable development projects. Further, the study would also benefit future scholars who would wish to do similar studies as source of documented literature.

## 1.7 Basic Assumptions of the Study

This study assumed that respondents would be available to participate in the research and that they would answer the questions truthfully. Also the study assumed that the respondents would be cooperative.

## 1.8 Limitations of the study

The research was conducted in Mbooni Sub-County, which may not have allowed generalization to other sub-counties; however it may be applied to sub-counties with similar characteristics. A major limitation would be on the great suspicion among the respondents on the intention of the research. To counter this limitation, a research permit would be produced and the intention of the study clearly explained to the respondents. Considering the fact that the study adopted a descriptive survey design, collecting data from the vast number of respondents would be very cumbersome. To counter this, the researcher sought the help of research assistants who aided in data collection. The data collection instruments may not have been 100% accurate because of being prone to biasness from the respondents. In this regard, validity and reliability of the instruments were established.

## 1.9 Delimitations of the study

The study was carried out in Mbooni Sub-County, Makueni County. The reason as to why the researcher limited himself to Mbooni Sub-County was because of lack of time and enough resources to allow the researcher to consider all the County Funded Projects in the entire Makueni County. The study targeted PMCs, Sub-County Departmental heads and Chief Officers who were deemed to have relevant information on factors influencing sustainability of County Funded Projects due to the nature of their duties and responsibilities.

### 1.10 Definition of significant terms

**Competence**- Refers to suitability of an employee to perform his/her duties.

**County Funded Projects**- Refers to projects financed either in phase or fully by the County Government from the devolved funds.

**Influence-** Refers to having an effect on something.

**Monitoring and Evaluation**- Refers to the process of collecting information to identify areas that need remedial measures.

**Participation**- Refers to being involved in an activity or project

**Projects**-Refers to a set of activities designed to produce unique results to help uplift wellbeing of people.

**Resources**- Refers to people, equipment, facilities, funding, or anything else usually other than labour required for the completion of a project activity.

**Stakeholders**-An individual, group of individuals, institutions or firms that may have a significant interest in the success or failure of a project

**Sustainability**- Refers to the probability of a project to continue long after outside support is withdrawn

### 1.11 Organization of the study

The study was organized into five chapters. Chapter one covered the background of the study, statement of the problem, objectives of the study, research questions, purpose of the study, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study and definition of significant terms. Chapter two dealt with literature review. The topics discussed were in relation to the research objectives and sustainability of County Funded Projects. Also included were the theoretical framework and conceptual framework of the study. Chapter three described the research methodology used. Included was the research design, target population, sample size and sampling procedures, data collection instruments, data collection procedures and data analysis techniques. Chapter four analysed, presented and interpreted the research findings. Data was presented in form of tables, using frequencies and percentages. Lastly chapter five consisted of summary of findings, discussions, conclusions and recommendations of the study. Also included were suggestions for further research and contribution to the body of knowledge.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

In this section, a review of previous literature on the factors influencing the sustainability of County Funded Projects was presented. Although this topic has not been widely researched in the past, a significant body of literature exists based on the previous works of various scholars. The factors influencing sustainability of County Funded Projects have been categorized under several main headings, namely: stakeholder participation and project sustainability, monitoring and evaluation (M&E) and project sustainability, competence of staff and sustainability, availability of resources and project sustainability and gaps in literature review. The literature review also provided theoretical as well as conceptual frameworks relating to the research topic.

## 2.2 Stakeholder Participation and sustainability of County Funded Projects.

In the context of County Funded Projects, stakeholders play a major role when it comes to sustainability of those projects. As pointed out by several scholars, sustainability is hard to attain with no support and involvement of stakeholders (Vernon, Essex, Pinder, & Curry, 2005; Koenig & Schultz, 2010). With their different roles to play, stakeholders' active engagement implies the chance to influence, and to some level, control the direction, design, detail as well as implementation of a project. In their book, Koenig and Schultz (2010) defined stakeholders as persons or organizations who are actively involved in, concerned with, or whose interests are affected by the implementation of a project, whether positively or negatively. Stakeholders tend to have significant influence over project, its deliverables as well as the project members (Koenig & Schultz, 2010). In line with this explanation,

stakeholders of County Funded Projects may include: the county government, the community or public, the project management committee or any other implementing agency, employees or workers, technocrats and technical experts from, for instance, Ministries of Water, Housing and Health, and Public Works.

In layman's terms, project stakeholders are the people who have a stake in the project or people with interest or concern in any aspect of the project (Mwanzia & Strathdee, 2010). The project staffs implement activities while the programme managers supervise project implementation. The workers or employees interest is that they consider the project a source of income for them hence making them a major stakeholder group. The government happens to be a key stakeholder and for projects to succeed, good working relationships ought to be established with the government and its agencies at all levels. The Government, mainly for regulatory reasons, should also be informed of activities and likely impacts of projects.

While studying the dynamics of interest representation, Smith, Nell & Prystupa (1997) established that stakeholder participation is an essential element of not only effective project implementation, but also sustainability of the project. While tackling multi-stakeholder processes, Vernon, Essex, Pinder and Curry (2005) established that they can help in the selection and design of the right project implementation procedures. Engagement or consultation with stakeholders can serve this purpose. In order to reduce biasness and subjectivity, people ought to seek input or views from different stakeholders through multi-stakeholder discussions.

Chambers and Conway (1992) pointed out that when it comes to the measured results, their interpretation and assessment, disagreements between stakeholders are inevitable. Even so,

the issues and extent of divergence amongst stakeholders tend to lead to important insights and point to issue needing attention. As pointed out earlier, a project will engage different players such as project managers, resource managers, staff members, volunteers, participants, and community members who have different interests in the project. To put it briefly, different stakeholders have different roles and see the project through different lenses. It is advisable to tap the divergent perspective when planning for the implementation of a project. To meet this objective, all stakeholder groups ought to be represented, preferably as early as the planning stage. In trying to explain the importance of stakeholder engagement, Hofisi (2013) illustrated how failure to consult and involve, right from the beginning of projects, government stakeholders from agricultural, health, fisheries, public works and forestry ministries may affect the sustainability of projects.

In order to increase chances of success, it is important to articulate the expectations of different stakeholders earlier in the process (Chandra, 2007). Project execution as agreed among the major stakeholders at the end of the planning stage, is necessary so as to undertake implementation systematically. A plan acts as a tool for the successful implementation as it spells out effective and apt decision-making along with vital information from regular and implementation activities. Planning for implementation should occur during project design, where indicators for progress should also be established. Stakeholder participation in project implementation can result in effective communication hence increasing support from the key stakeholders. According to Vernon, Essex, Pinder and Curry (2005), in order to monitor and evaluate stakeholder participation in development projects, it is advisable to determine the stakeholders; that is, anyone can directly or indirectly impact or be impacted by the result of proposed interventions. Stakeholder participation all through the programming cycle guarantees ownership, learning and sustainability of results. Continued stakeholder

participation in monitoring and evaluation should not be assumed, but institutionalized. Specific measures have to be built into program and project management processes to ensure continued and effective involvement of stakeholder (Gareis, Heumann, & Martinuzzi, 2009).

According to Hofisi (2013), stakeholders can be categorized into several groups such as primary, secondary and external stakeholders. Primary stakeholders are those people or groups who are ultimately affected by the project while secondary stakeholders are intermediaries who deliver aid to or affiliated to primary stakeholders. External stakeholders are those not formally engaged in a project, but who may impact or be impacted by its implementation or outcomes. In development projects, stakeholders usually include donor agencies, government, civil society organizations and the local community and beneficiaries. To identify stakeholders to a project, Hofisi (2013) recommends the use of Stakeholder analysis. Experiences in monitoring and evaluation of participation are still limited. Many academicians have concentrated more on identifying stakeholders and assessing the extent of their participation than on assessing the costs and benefits of participation of the different stakeholder groups. To assess the extent and quality of participation, one will have to rely on both quantitative and qualitative indicators. Quantifiable indicators may be applicable in measuring the economic aspects of participation, extent of participation in project activities, and the development momentum. On the other hand, qualitative indicators measure processes like organizational growth, self-reliance and group behaviour. These indicators tend to evolve all through the life of a project as participation changes (Oakland, 2003).

Stakeholder assessment is considered a vital building block in assessing the extent and quality of participation. Though different approaches can be used, participatory monitoring and evaluation and involvement of the primary stakeholders where possible is normally

recommended. Through experiences in evaluating the costs and benefits of participation by the different stakeholders are limited, the few assessments documented in the literature relate for the most part to the costs to the donor agency. The World Bank, specifically, has done some assessments of its costs of participation. The findings indicate that participatory projects require more financial and time resources compared non-participatory projects. The studies have not, however, attempted to measure the costs of not providing for participation. Some of the literature suggests that participatory project implementation could be used to assess the costs and benefits of participation to the primary stakeholders (Foxand, 2004). Foxand (2004)further states that assessments of the impact of stakeholder participation have been carried out mainly through reviews of ex-post evaluations, case studies, surveys and statistical analysis. While dealing with the issue of stakeholder participation mechanisms, the UNEP Dams and Development Project (2007) concluded that, though evidence may be limited, participation has significant impacts on projects, their implementation, outcomes and sustainability.

Wabwoba (2012) in a study focused on factors affecting sustainability of projects in Kiambu, Kenya, concluded that partners and stakeholder groups ought to be persuaded to partake in the evaluation process. This will improve the quality of evaluations through: accuracy of information; increased credibility and approval of findings; and better correspondence to the practical concerns of stakeholders. Participation is also an end in itself, as for primary stakeholders it is an empowerment strategy. As stakeholders are put at risk in an evaluation they should have the right to have their issues, problems and analysis included in the evaluation process. Participation offers the opportunity to influence the evaluation process and becomes a pre-requisite of ownership and thus sustainability is achieved.

For the past few decades, projects have changed as globalization presents a dynamic and more interactive process influencing many aspects of today's projects. As a result, many projects are being implemented in organizations with diverse cultures, working collectively to attain similar goals. According to Eid (2009) treatment of external stakeholders has been a major challenge in many projects. Stakeholder engagement should be considered as a critical success factor in the contemporary world (Eid, 2009). For that reason, their view ought to be heard and incorporated in decision making. From this understanding the project can benefit a lot, and aim to commit early to stakeholders within the global project. Communication is the basic tool between the stakeholders. As collaborative knowledge has become a core competence in the global environment (Chambers & Conway, 1992), stakeholders need to get treated intensively to exploit this type of knowledge. Relationship management presents the most important particularity and a fundamental of communication. The Project Management Institute states, by not being aware of the stakeholders and if overlooking them, failure is very likely to occur. Through the extent of the scope to a global level, more actors have to be considered as participants of a global project to be able to achieve project sustainability successfully, because the stakeholders will provide the basis for decision making and by this, have a big stake in the global project (Oluwoye & Crawford, 2003).

In Africa in general, issues of "participation" have become increasingly important with many international development institutions recognizing that participation is critical to the achievement of overarching goals of sustainable development and poverty reduction. Participatory approaches have proven to improve project quality, ownership and sustainability; to empower targeted beneficiaries and to contribute to long-term capacity-building and self-sufficiency. Many development projects in Africa recognize the value of "stakeholder participation" and persuade staff to make use of a "participatory approach" in

their everyday activities. For instance, the African Development Bank lays emphasis on the magnitude of “a bottom-up, participatory approach” and a “client-responsive approach to ensuring stakeholder commitment and ownership”.

## 2.3 Monitoring and Evaluation and its influence on sustainability of County Funded Projects

Project monitoring and evaluation happens to be a critical success factor when it comes to any kind of project. According to the OECD (Organization for Economic Cooperation and Development) monitoring is a continuous function that relies on the systematic collection of data on specified indicators, to provide management and the main stakeholders of an ongoing development intervention with indication of the extent of progress and achievement of objectives and progress in the use of allocated funds. On the other hand, evaluation is the systematic and objective assessment of an ongoing or completed project, program, or policy, including its design, implementation and results (Wickham & Wickham, 2008). The goal is to establish the relevance and fulfilment of objectives, development efficiency, effectiveness, impact, and sustainability. An evaluation should provide information that is credible and useful, enabling the incorporation of lessons learned into the decision-making process of both recipients and donors. Based on the given definitions, it is evidently apparent that monitoring and evaluation are distinct yet complementary processes. Monitoring gives information on where a policy, program or project is at any given time relative to respective targets and outcomes. Evaluation gives evidence of why targets and outcomes are or are not being achieved.

As many scholars attest, monitoring and evaluation is an effective tool for enhancing the quality of project planning and management. Monitoring helps project managers and staff to

understand whether the projects are progressing on schedule and to ensure that project inputs, activities, outputs and external factors are proceeding as planned. Evaluation can be a tool to help planners and managers assess to what extent the projects have achieved the objectives set forth in the project documents (Chambers & Conway, 1992). Monitoring and evaluation as a tool for learning and continual improvement has been increasingly viewed as critical success factor in projects and the sustainable management of resources (Foxand, 2004; Gwadoya, 2012). Continual improvement approaches to M&E include Performance Management Frameworks designed to maximize the effectiveness of projects (Westland, 2007).

From a universal perspective, monitoring and evaluation is increasingly becoming a vital instrument necessary for achieving environmental, economic and social sustainability (TANGO International, 2008). In other words, project monitoring and evaluation is fundamental if the project objectives and success are to be attained. Monitoring and evaluation of project enhances the general effectiveness of project planning, management and implementation. At all levels, sustainability criteria and indicators for monitoring and evaluation are key tools for defining, monitoring and reporting on ecological, economic and social trends, tracking progress towards goals, and influencing policy and practices (TANGO International, 2008). At regional and sub-regional scales, M&E is vital for assessing the sustainability of County Funded Projects, and can be an important tool to assist with management planning. Monitoring and evaluation locates barriers to learning and development in the entire system instead of only focusing on the individual. This means that barriers to the implementation may be located within the project, the community and or within the broader social, economic and political context (Constanza, 2008).

According to Silvius and Chipper (2010), most, (66.7 per cent) of the government-funded projects in developing countries fail because of bad monitoring and evaluation when implementing the project. Their research also established that the monitoring and evaluation process of the projects was deficient of best practices. Most of the best practices were erratically done with others being disregarded completely. In a study based in Botswana, (Muzinda, 2007), found out that inadequate monitoring and evaluation of HIV/AIDS projects was a major concern for many, especially in the media. This is mainly due to the serious lack of control of funds that were disbursed, lack of accountability for the disbursed funds and absence of any evidence of the attainment of the objectives for which the funds were disbursed to the NGOs. Lack of adequate monitoring and evaluation expertise or capacity among the local NGOs is one area that has been highlighted by several scholars (Gwadoya, 2012).

Successful monitoring and evaluation calls for particular skilfulness and knowledge like monitoring and evaluation design skills particularly log frame design, indicator setting: both qualitative and quantitative, design of data collecting instruments including questionnaires, focus group discussion guides. Other necessary skills may be data collection skills such as conducting interviews, conducting focus group discussion, data analysis and report writing skills (Constanza, 2008). A major problem experienced in many projects is the lack of adequate financial resources to carry out monitoring and evaluation. Majority of projects have inadequate funds meaning that the little resources available are channelled to actual implementation of project activities and monitoring and evaluation viewed as an expense not worth incurring (Baloyi & Bekker, 2011).

Gwadoya (2012) stated that the need for effective monitoring and evaluation is increasingly recognized as an indispensable tool for project management. He acknowledged that the need to improve the performance of development assistance calls for close attention to the provision of management information, both to support the implementation of projects and programs and feed back into the design of new initiatives. M & E also provides a basis for accountability in the use of development resources, consequently leading to sustainability of County Funded Projects.

Vernon, Essex, Pinder and Curry (2005) argued that awareness is growing and participation by project beneficiaries in design and implementation brings greater ownership of project objectives and encourages the sustainability of project benefits. Objectives should be set and indicators selected in consultation with stakeholders, so that objectives and targets are jointly owned (Foxand, 2004). A reliable flow of information during implementation enables managers to keep track of progress and adjust operations to take account of experience. Another challenge is the provision for collecting data and managing project records so that the data required for indicators are compatible with existing statistics, and are available at reasonable cost. Thus, for example, a health project might be designed to further the sectorial goals of a reduction in child mortality and incidence of infectious diseases, but have an immediate, measurable objective of providing more equitable access to health services. Objectives should be specific to the project interventions, realistic in the timeframe for their implementation, and measurable for evaluation.

Nyabuto (2010) studied the factors influencing implementation of monitoring and evaluation of projects in NGO's. The study sought to understand how finance affects M&E implementation; and also examined the level of participation of stakeholders in the

monitoring and evaluation process. The study revealed that a higher number of stakeholders were not involved in monitoring and evaluation and also the projects do not allocate enough funds monitoring and evaluation. This research recommends further research to be done to investigate the system concepts on performing evaluation. It also recommends that a research to be done to address the gap that exist between interpretation of Monitoring and Evaluation framework and its implementation.

In Kenya, Mibey (2011) researched factors affecting implementation of monitoring and evaluation programs in Kazi Kwa Vijana projects by government ministries in Kakamega Central District, Kenya. This scholar looked at the monitoring and evaluation element in the Kazi Kwa Vijana projects and the influence of funding and training on the implementation monitoring and evaluation programs. The research uncovered several inadequacies in the monitoring and evaluation of Kazi kwa Vijana projects; like underfunding, lack of skilled manpower and a general negative attitude towards the process of monitoring and evaluation. The study recommends that these critical issues be addressed by up scaling funding for monitoring and evaluation activities, enhanced training of monitoring and evaluation personnel and the setting up of dedicated monitoring and evaluation teams at the District level across all ministries implementing Kazi kwa Vijana projects. This will facilitate efficient implementation and sustainability of these projects so as to maximize the benefits of this huge investment in the youth of this country.

Gwadoya (2012) also conducted a study on the factors influencing effective implementation of monitoring and evaluation practices in donor funded projects in Kenya: a case of Turkana District. The academician found that staff competency; resource adequacy, technology adoption and donor policies play a pivotal role in determining the performance and success of

donor funded project. However, the study found that there is a share need for proper understanding of M & E practices in donor funded project. On the other hand, Abdisalan (2012) did a study on the factors influencing the application of participatory monitoring and evaluation (PME) in community based projects: a case of IDPs in Mogadishu Somalia. He observed that sufficient time was needed to design, adapt and implement the agreed process of PME. Training was also found to be very important in PME and it needed a lot of time to be built into the stakeholders (Mwanzia & Strathdee, 2010).

Abdisalan (2012) also concluded that resources like finances and human resource were really essential in PME for various activities such as planning, implementation, monitoring and mobilizing the community among other activities. Skills were also found to be necessary in the following area, planning, implementing, assessing and monitoring and for numeracy, literacy, interviewing and monitoring in qualitative and quantitative methods, for Management Information Systems (MIS) and for follow ups, adequacy, technology adoption and donor policies play a pivotal role in determining the performance and success of donor funded project hence their sustainability. However, the study found that there is a shared need for proper understanding of M & E practices in donor funded project.

**2.4 Competence of staff and their influence on sustainability of County Funded Projects.**

Globally from a resource-based point of view, superior performance of projects is linked to the resources and capabilities possessed by a particular project staff. Even though conceptualizing and or measuring these capabilities is not straight- forward , an in-depth analysis of employees' competences and their development is inevitable because they form a key source for competitive advantage in implementing projects (Foxand, 2004). This holds particularly true for construction projects branches facing so-called hyper competition which

de-notes a competitive situation where the key success factor is the ability to constantly develop new products, completed in stated timelines providing the customer with increased functionality and performance. From an economic modelling point of view, allocating available resources amongst a set of project opportunities poses a decision making problem of intriguing complexity. The question to be answered involves addressing how the goals of generating (innovation) value and strengthening innovation capacity can best be accomplished for sustainability of projects.

As attested by several scholars, successful project sustainability is influenced by accumulated knowledge and individual and collective competence (Harris, 2011; Eid, 2009; Chambers & Conway, 1992). Based on the wide body of literature, there are several approaches to defining and measuring the level of staff competency, capacity and the effectiveness of agencies tasked with projects. The effectiveness of the project team tasked with project's implementation depends to a large extent on the project staff capacity relative to the demands placed upon them. To be sustainable, projects need to have sufficient and capable staff with the appropriate mix of skills and expertise, the motivation and will to act, and the incentives and resources necessary to achieve their mandate. Chambers and Conway (1992) suggest that the ability of a project's staff to meet demands for its services depends on both its numbers and the skills and expertise staff members bring to the project. A project team needs to have at least the minimum necessary mix of skills and expertise and a sufficient number of staff with appropriate skills relative to the scale of its responsibility**.**

Projects require people to carry out laid down work since the projects cannot implement themselves. This increases the need to understand, who will work on the systems, what skills and knowledge they have and the overall level of human resources on hand to suit the project

execution plan (Harris, 2011). The minimum required mix of skills and expertise, and the required number of staff per unit managed or administered by the agency can be established through estimates provided by knowledgeable informants. These informants could include current and past managers of the stimulus project analysts, researchers, tracking the stimulus project operations and functioning.

The effective project team consists of a group of people who understand the project objective, have expertise in their field as it relates to the project, and understand each person's role and responsibility. Project team members need to be willing to cooperate and collaborate, trust and respect other team members, and focus on results. The project manager is the one responsible to keep the project on track and deliver the project outcome, either product or service, on time and within budget. The project manager must ensure that the outcome of the project is what the client or stakeholder asked for, and that the client is satisfied with the results for sustainability to be achieved (Barot, 1995).

For effective outcomes, the project manager needs to optimize the use of the shared resources, and balance time, cost, quality, and risk to meet or exceed stakeholder expectations. The project manager is the leader of the team, with formal authority and possible informal authority. The project manager oversees the definition, planning, execution, and completion of the project, and the work of the team members. Remembering that the team members are experts in their fields, the project manager may serve as coach or conductor for the team members. Team members probably don't need to be closely supervised or micromanaged. An effective project manager will be skilled in leadership, communication, time management, problem solving, and handling conflict, and will know when to delegate and how closely to monitor progress (Chandra, 2007). The project manager

will have to make use of softer interpersonal skills such as team building, negotiation and conflict resolution, and more quantitative skills such as estimating, scheduling, and tracking to achieve sustainability.

In a country like Kenya, construction workers are relatively unskilled and lack of adequate planning at the early stages of the project impacts on sustainability of projects. In the implementation of Thika Super Highway for example, The Chinese contractors knew this. They planned on how to train the Kenyan labour force on their construction methods and this reduced the scenarios that we saw of Chinese contractors working with only two or three local workers at the project site. The more they train and engage in their projects, the more the construction process stayed on course and sustainability achieved. (http://www.capitalfm.co.ke/business/2012/04/thika-superhighway-completion-set-for-june/).

**2.5 Availability of Resources and their influence on sustainability of County Funded Projects.**

Existing literature suggests that resources are vital for sustainability of any project. In simple terms, resources implies people, equipment, facilities, funding, or anything else required for the sustainability of a project (Norton 2005). The lack of a resource will therefore be a constraint on the sustainability of the project. Resources may be storable or non-storable. Storable resources remain available unless depleted by usage, and may be replenished by project tasks which produce them. Non-storable resources must be renewed for each time period, even if not utilized in previous time periods. Resource scheduling, availability and optimization are considered key to successful project sustainability (Eid, 2009).

Chandra,(2007) argued that adequate resources ensure effective and efficient completion of projects. It is critical to set aside adequate financial and human resources at the planning stage. The required financial and human resources for sustainability of projects should be considered within the overall costs of delivering the agreed results and not as additional costs. The practices of deployment of personnel for monitoring vary among organizations. Baloyi and Bekker (2011) further notes that the availability and accessibility of materials influence the sustainability of projects. In the absence of these resources, the contractor needs to spend more time and resources to locate them. The appropriateness of allocated resources should be assessed to ensure that project runs without delays. If a project is carried out jointly with donors in the context there should be an agreement on resourcing modalities with potential donors or other counterparts at the outset.

Budget limitation is consistently one of the greatest constraints to effective sustainability of development projects. While projects can often compensate for a lack of technical capacity through training and/or outsourcing, they cannot compensate for the lack of money. Implementing project costs money and, depending on how ambitious project implementers are about their project, it can cost a lot of money (Harris, 2011). Successful sustainability of County Funded Projects requires that an organization invest valuable resources, including money and peoples' time. At the earliest stage of designing a development project, key stakeholders must make a decision on whether the activity is worth pursuing given the expected use and costs. At least a rough budget for the activity is therefore needed as part of up-front planning.

Gwadoya (2012) observed that financial resources for development projects should be estimated realistically at the time of planning for the project. While it is critical to plan for

project execution together, resources for each function should be separate. In practice, each project should have two separate budget lines for example the project and for its monitoring and evaluation agreed in advance with partners. Monitoring and evaluation costs associated with projects can be identified relatively easily and be charged directly to the respective project budgets with prior agreement among partners through inclusion in the project budget or Annual Work Plan (AWP) signed by partners. Sourcing and securing financial resources for county funded project or programs can pose additional challenges. It is important to allocate required funds for each development project. It is important that partners consider the resources needed for timely completion of projects and agree on a practical arrangement to finance the associated activities for sustainability purposes.

From global perspectives, resources availability is one of the important challenges facing the construction industry characterized by shrinking workforce. Statistics Canada predicts that in Canada by 2016 there will no longer be enough new workers to replace retirees. In the US a Conference Board study, "*Managing the Mature Workforce,*" predicts that by 2010, the number of workers aged 35 to 44 will decline by 19%; aged 45 to 54 will increase 21%; and aged 55 to 64 will increase 52%. This is a world-wide phenomenon. The number of workers aged 35 to 44 is expected to decline by 27% in Germany, 19% in the U.K., 9% in Italy, 10% in Japan, and by 8% in China. A recent study from the American Public Power Association (APPA), Work Force Planning for the Public Power Utilities: Ensuring Resources to Meet Projected Needs reports that the loss of critical knowledge and the inability to find replacements with utility-specific skills are the two biggest challenges facing the industry. In the utility industry the average age of utility workers is close to 50 and by 2010, as many as 60 percent of today's experienced utility workers will retire. A survey conducted in 2005 by the Carnegie Mellon University Electricity Industry Centre found that human resources

executives in the utility sector overwhelmingly listed the aging work force as their number one concern.

In African developing countries, development projects represent a strategic option towards achieving sustainable development objectives. These projects are characterized with the need for high design knowledge and technical skills; competent human resources and managerial capabilities as well as excessive cost investment. Conversely, developing countries experience shortage of many of these requirements, which obstruct the development of MCPs. There are challenges of delivering Mega Construction Projects (MCPs) in developing countries. An important ingredient to achieving project success is exceptional design knowledge, skills and experience. Deficient professional capability, shortage of full understanding of scientific and technical requirements and improper decisions and overlooking specialists and stakeholders consultation during the decision making process obstruct the development of development projects, especially in developing countries (Uher & Loosemore, 2004). These challenges were clearly noticed in Toshka project, a water infrastructure development, Egypt as not all technical requirements have been taken into full consideration and the different studies conducted over the years related to the project have not been discussed openly and in public. Examples of the technical failure include: Rational behind Human Development Challenges .The ability to attract, retain and develop talented employees is a key feature of sustainability. People are an organization's most valuable asset and this is especially true in relatively low-tech, labour- intensive industries such as construction.

Labourers and workers are considered the lifeblood of any development project, especially in sustainability of projects in developing countries (Barot, 1995). For that reason, it is

imperative to improve their skills and enhance their abilities to increase the productivity of the construction industry and ensure sustainability of the County Funded Projects. Failure to provide quality education and professional training programmes is a major challenge that leads to lack of project sustainability. The construction of the 2010 FIFA World Cup stadia in South Africa is a clear example that explains the impact of the shortage of skilled labour on delivering development projects in stated timelines in developing countries (Barot, 1995).

In a country like Kenya, construction workers are relatively unskilled and lack of adequate planning at the early stages of the project results in time and cost overruns leading to lack of sustainability. The Chinese contractors know this and plan on how to train the Kenyan labour force on their construction methods and this might reduce the scenarios that we see Chinese contractors working with only two or three local workers at the construction site. This will greatly improve the sustainability levels of local projects. The project sustainability is likely to remain on track if the contractors train and engage the workers (Westland, 2007).

## 2.6 Theoretical Framework

This research was guided by Freeman's stakeholder theory (1984). The stakeholder theory, organizations and their activities through constituency concepts and propositions (Westland, 2007). The idea is that 'holders' who have 'stakes' interact with the organization and thus make its operation possible. It is a theory that explains how organizations function with respect to various constituencies with whom they are inextricably embedded. Stakeholder's theory development has centred on defining the stakeholder concept and classifying stakeholders into categories that provide an understanding of individual stakeholder relationships. Freeman's definition of stakeholder as any group or individual who can affect or who is affected by the achievement of the firm's objectives and continues to provide the boundaries of what constitutes a stake. He says that a stakeholder has some form of capital either financial or human at risk and therefore has something to lose or gain depending on a firm's behaviour. To these elements, a tie or tether that creates a bond of some sort .A stakeholder theory of the organization requires an understanding of the types of stakeholder influence but also how organizations respond to those influences (Eid, 2009). Each firm faces a different set of stakeholders, which aggregate into unique patterns of influence. Firms do not simply respond to each stakeholder individually, they respond rather to the interaction of multiple influences from the entire stakeholders set (Gwadoya, 2012). Thus, organizations response to their stakeholders requires an analysis of the complex array of multiple, interdependent relationships existing within the stakeholder environment. The conceptual competition within stakeholder theory, between legitimacy and power, is reflected in virtually every major theory of the firm particularly in agency, behavioural, institutional, population, ecology, resource dependence and transaction cost theories.

## 2.7 Conceptual Framework

The conceptual framework presented the relationship between the study variables as illustrated in the figure 2.1.

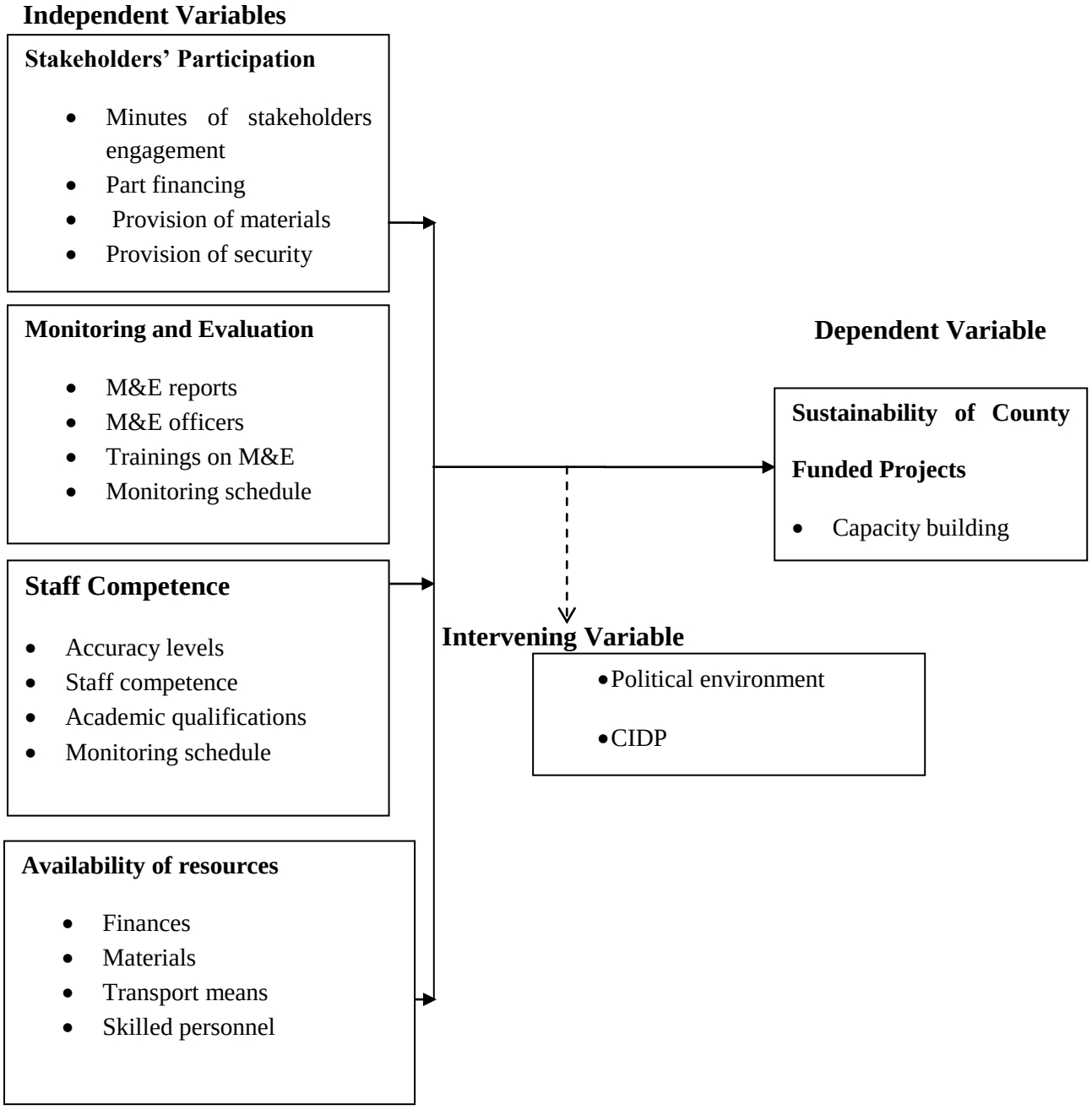


**Figure 2.1 Conceptual framework**

**(Source: Researcher)**

## 2.8 Gaps in Literature Review

The literature reviewed brought to light the fact that sustainability of County Funded Projects involves giving stakeholders an active role in the implementation and management of projects because in the current situations there is low stakeholder involvement. Despite this, gaps were identified in the literature of some authors. For example Koenig and Schultz (2010) said that sustainability is hard to achieve with no support and involvement of stakeholders. This is due to their influence on design and implementation of County Funded Projects. They considered the positive side of the matter only and assumed all stakeholders were honest and cooperative. The fact that some stakeholders misuse project resources leading to lack of sustainability was not taken into consideration. Most authors in general failed to note that culture was also a factor influencing sustainability of projects at both national and local levels and not just at individual level.

## 2.9 Summary of literature

This chapter has presented a review of literature related to the area under study. The literature reviewed vividly indicated that various factors contributed to the sustainability of County Funded Projects. Most authors on development projects have not sufficiently addressed the factors influencing the sustainability of County Funded Projects. Due to this, there is need for further research to document ways and means of maintaining and improving County Funded Projects for the purposes of sustainability. This study sought to provide new knowledge to guide county government employees, stakeholders, project management committees and project beneficiaries to achieve and maintain sustainability of the County Funded Projects.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter discusses various stages that were followed in completing the study. It provides a general framework for the procedures and techniques used in data collection and analysis under the following sub-headings: the research design, target population, sampling size and sampling procedures, data collection instruments, data collection procedures, data analysis techniques and ethical considerations.

## 3.2 Research Design

Orodho (2003) defines research design as the scheme outline or plan that is used to generate answers to research problems. This study adopted a descriptive survey research design. A descriptive survey study is one which information is collected without changing the environment. The use of descriptive research survey design enabled this study to establish facts without manipulation of data. Cooper and Schindler (2006) further explain that a descriptive survey design is one of the best since it is accurate and current facts are exhibited through data collection in human contexts. The study therefore considered descriptive research survey design the most appropriate in establishing the factors influencing sustainability of County Funded Projects in the study area.

## 3.3 Target Population

Mugenda and Mugenda (1999) define a population as a complete set of individuals, cases or objects with some common observable characteristics. Welman and Mitchelle (2005) further define target population as full set of cases from which a sample is taken. The target

population of this study included 10 sub-county departmental heads, 60 project management committee members and 10 county chief officers. Thus, the population of interest was 80.

**Table 3.1 Target Population**

| Variable | Total Number | Percentage |
|---|---|---|
| PMC Members | 60 | 75% |
| Sub-County Departmental heads | 10 | 12.5% |
| Chief Officers | 10 | 12.5% |
| Total | 80 | 100% |

### 3.4 Sample Size and Sampling Procedure

Sampling is the procedure of selecting elements from a given population that specifies the type of sample to be used. From the population frame, the required number of respondents was selected in order to make a sample. The respondents were 52 project management committee members and 10 departmental heads and 10 chief officers. This was arrived at through the Krejcie and Morgan (1970) table for determining sample size for a finite population. Therefore, the total number of respondents was 72.

**Table 3.2 Sample Size**

| Variable | Total No. | Sample |
|---|---|---|
| PMC Members | 60 | 52 |
| Sub-County Departmental Heads | 10 | 10 |
| Chief Officers | 10 | 10 |
| Total | 80 | 72 |

### 3.4.2 Sampling Procedure

In order to select samples from the population, the study used Krejcie and Morgan (1970) table for determining sample size for a finite population. The purpose of this was to ensure that a proportionate number of respondents were selected from the target population. Through this a sample of 52 PMC members, 10 departmental heads and 10 chief officers was arrived at making a total of 72 respondents.

## 3.5 Data Collection Instruments

The main tools of data collection were questionnaires which were self-administered to selected PMC members. The researcher designed a questionnaire to gather extensive data and incorporated a five point Likert rating scale. The questionnaires had both open and closed questions. Using questionnaires in the research enabled direct response and feedback from the respondents that could be collected in short period of time and in an easier manner. Interview schedules were also be utilized where applicable, that is sub-county departmental heads and chief officers.

### 3.5.1 Validity of the Instruments

Validity refers to the appropriateness of an instrument. It is the degree to which results obtained from the analysis of data actually represent the phenomena under study. Orodho (2003) says that a valid instrument should accurately measure what it is supposed to measure. Kothari (2008) says that validity of the instrument refers to the degree to which the instrument measures or describes what is supposed to measure or describe. Content related validity was used to ascertain the validity of the questionnaire .It was also established through consulting an expert in the field of research, who is the assigned project supervisor from the university. The reason for conducting a validity test was to determine the suitability, clarity

and relevance of the instruments for the final study. Ambiguous and inadequate items were revised in order to elicit the required information and improve the quality of the instruments.

### 3.5.2 Reliability of the Instruments

Reliability is a measure to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda 2003). The reliability of the questionnaire was evaluated through Cronbach's Alpha which measures the internal consistency. The Alpha measures internal consistency by establishing if certain item measures the same construct. Cronbach's Alpha was established for every objective in order to determine if each scale would produce consistent results should the research be done later on. Scales will be termed to be consistent if their reliability values exceed the prescribed threshold of 0.7 (Mugenda and Mugenda, 2003). According to Gray (2004) a correlation coefficient of about 0.8 is high enough to judge the instruments as reliable for the study. The study considered a correlation coefficient of between 0.7 and 0.8 to be reliable.

## 3.6 Pilot test

Mugenda and Mugenda (2003) argue that piloting refers to pre-testing of a research instrument by administering it to a selected sample which is similar to the actual sample which the researcher plans to utilize in the study. The population unit used will not be included in the actual study. Piloting was done in order to assess the clarity of items, validity and reliability of the instruments. Departmental heads from the neighbouring sub-county were chosen as the target population for the pilot study.

### 3.7 Data Collection Procedure

Data collection started with the researcher obtaining a letter of introduction from the University of Nairobi Extra-Mural Department. A permit was then acquired from the National Commission of Science, Technology and Innovation (NACOSTI) before embarking to the field. The researcher made appointments with departmental heads and chief officers in order to get permission to carry out the study. After permission was granted, administration of the questionnaires began and it took two weeks duration to complete the exercise. This was made possible through the help of the 2 research assistants who were closely supervised by the researcher. The study used 'drop and pick' method to administer the questionnaires to the sample population. There was prior booking of appointments before conducting the interviews.

### 3.8 Data Analysis Techniques

Data was first coded to translate responses into specific categories and reduce data into manageable summaries. Tabulation was then done followed by analysis using descriptive statistics. Frequencies and percentages were used and the presentation was done using tables. The computer program SPSS (Statistical Package for Social Sciences) was used to analyse the data. Analysis of data was important in explaining the variables of study. Data from interview schedule and open-ended questions in the questionnaire was analysed using content analysis. Hypotheses were framed and tested using Chi-squire. To test the hypotheses of the study, chi-square test was conducted with a significance test at 5% level. Chi-square is a statistical test commonly used to compare observed data. The chi-square test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories. Durrheim and Painter (2006) point out that the purpose of analysis is to generate meaning from raw data collected.

### 3.9 Ethical Considerations

According to Mugenda and Mugenda (2003), ethical considerations are important for any research. Ethical research practices were observed throughout the study. First, consent to carry out the research was sought from county government officers. This helped in eliminating any kind of conflicts that would arise from the respondents. Secondly, the purpose of the study was clearly explained to the respondents. Participation was made voluntarily and the researcher sought informed consent from the respondents as the researcher struck rapport. Finally, the researcher ensured anonymity and confidentiality of the respondents involved in the study.

### 3.10 Operationalization of study Variables

The different variables and how they were applicable to the study are summarized in Table 3.3

## Table 3.3: Operationalization of study variables

| Objective | Variable | Indicators | Measurement | Measurement scale | Tools of Analysis | Type of data analysis |
|---|---|---|---|---|---|---|
| To assess the influence of stakeholders participation on sustainability of county funded projects in Mbooni Sub-county | Stake-holder participation. | -Stakeholders Engagement reports and minutes<br>-Stakeholders engagement reports. | Number of stakeholders involved in decision making | Likert scale | Percentage | Descriptive Statistics |
| To determine the influence of monitoring and evaluation on sustainability of county funded projects in Mbooni sub County | Monitoring and Evaluation | -Monitoring and evaluation offices<br>- Monitoring and evaluation records<br>- Monitoring and evaluation systems<br>-M & E activities frequency | Monitoring and evaluation reports | Likert scale | Percentage | Descriptive Statistics |
| To determine the influence of competence of staff on sustainability of county funded projects in Mbooni Sub-County | Competence of staff | -Competence of staff<br>-Accuracy levels<br>-Turnaround time<br>-Staff knowledge in Project planning and management<br>-staff experience<br>-staff professional and academic qualification | Number of qualified and experienced staff | Likert scale | Percentage | Descriptive Statistics |
| To establish whether availability of resources influence the sustainability of county funded projects in Mbooni Sub-County | Availability of resources | -Finances<br>-Skilled Personnel<br>-Transport means<br>-Stationery | Resource availability | Likert scale | Percentage | Descriptive statistics |

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

## 4.1 Introduction

The focus of this chapter is to discuss the analysis and interpretation of the findings in line with the objectives of the study. The data that was obtained is presented in tabular form using percentages and frequencies. The chapter is further sub-divided into sections that are pertinent to the subjects under study. Descriptive and inferential statistics have been used to discuss the findings of the study.

## 4.2 Questionnaire Return Rate

The study targeted a sample of 52 Project Management Committee members. It was important to establish the return rate so as to know the exact number of questionnaires that were valid for analysis. Out of the 52 questionnaires that were issued, 49 were returned. This represented 94% response rate. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the 94% response rate was considered to be excellent.

### 4.2.1 Reliability analysis

A pilot study was carried out to determine reliability of the questionnaire. The pilot study involved respondents from the neighbouring sub-county. Reliability analysis was subsequently done using Cronbach's Alpha which measures the internal consistency by establishing if certain items within a scale measure the same construct. Cronbach's Alpha was calculated by application of SPSS (Statistical Package for Social Sciences) for reliability analysis. The value of the alpha coefficient ranges from 0-1 and may be used to describe the

reliability of factors extracted from dichotomous and or multi-point formatted questionnaires or scales.

A higher value shows a more reliable generated scale. Cooper and Schindler (2008) has indicated 0.7 to be an acceptable reliability coefficient. Table 4.1 shows that availability of resources had the highest reliability (α = 0.760) followed by staff competence (α= 0.736) followed by monitoring and evaluation (α=0.729) and finally stakeholders' participation (α=0.706). This illustrates that all the four scales were reliable as their reliability values exceeded the prescribed threshold of 0.7.

**Table 4.1: Reliability Coefficients**

| Variable | Cronbach's Alpha | Number of items |
|---|---|---|
| Stakeholders' participation | 0.706 | 6 |
| Monitoring and Evaluation | 0.729 | 5 |
| Staff Competence | 0.736 ` | 5 |
| Availability of resources | 0.760 | 5 |

### 4.3 Demographic Information

As part of the general information, the respondents were requested to indicate their gender, age, marital status, level of education and their duration of stay in Mbooni Sub-County. This was necessary in shedding light on the characteristics of the respondents.

#### 4.3.1 Respondents' Age

Determining the respondents' age was important as it revealed their level of experience in dealing with the sustainability of projects. Table 4.2 shows the age distribution of the respondents.

**Table 4.2: Age Bracket of Respondents**

| Variable | Frequency | Percentage |
|---|---|---|
| 19-25 years | 1 | 2% |
| 26-30 years | 6 | 12.2% |
| 31-40 years | 7 | 14.3% |
| 41-45 years | 33 | 67.3% |
| Above 45 years | 2 | 4.1% |
| **TOTAL** | **49** | **100%** |

The results indicate that 2% of the respondents were between the ages of 19-25 years while 12.2% of the respondents were between the ages of 26-30 years. 14.3% were in the age bracket of 31-40 years, 67.3% were between the ages 41-45 years whereas 4.1% of the respondents were above 45 years. Based on the findings, the respondents who were between the ages of 41-45 years were the majority. This therefore would suggest that they were able to appreciate and understand the factors influencing sustainability of County Funded Projects in Mbooni sub-county.

### 4.3.2 Respondents' Gender

Inquiring about gender was necessary in determining whether there was gender balance in the project management committees. The findings are contained in Table 4.3.

**Table 4.3: Gender**

| Variable | Frequency | Percentage |
|---|---|---|
| Male | 30 | 61.2% |
| Female | 19 | 38.8% |
| **TOTAL** | **49** | **100%** |

According to the findings, 61.2% of the respondents were male while 38.8% of the respondents were female. This was an indication that there was gender disparity since the number of males exceeded that of females by far. However, the disparity is termed by this study to be fair since the representation for each category surpasses the 30% threshold stipulated by the Constitution of Kenya (2010).

### 4.3.3 The Duration of Stay in Mbooni Sub-County

The study sought to find out the duration respondents have been living in Mbooni. The findings are as shown in table 4.4.

**Table 4.4: Respondents Duration of Stay**

| Variable | Frequency | Percentage |
|---|---|---|
| Less than 1 year | 3 | 6.1 % |
| 1-5 years | 7 | 14.3 % |
| 5-10 years | 13 | 26.5% |
| Above 10 years | 26 | 53.1% |
| **Total** | **49** | **100%** |

The findings indicate that 6.1% of the respondents have been in Mbooni for less than 1 year, 14.3% are 1-5 years, while 26.5% have been in Mbooni between 5-10 years. 53.1% are of above 10 years of stay in the area of study. Based on the findings, the respondents whose duration of stay was above 10 years were the majority. This therefore would suggest that they would be having relevant information for the study.

### 4.3.4 Respondents' Marital Status

The purpose of inquiring about the marital status of the respondents was to establish whether it had a positive or negative influence on their perception towards sustainability of projects. The findings are shown in Table 4.5.

**Table 4. 5: Respondents' Marital Status**

| Variable | Frequency | Percentage |
|---|---|---|
| Married | 32 | 65.3% |
| Single | 7 | 14.3% |
| Divorced | 3 | 6.1% |
| Separated | 7 | 14.3% |
| **TOTAL** | **49** | **100%** |

The findings indicate that 65.3% of the respondents were married, 14.3% of the respondents were single and 6.1% of the respondents were divorced while 14.3% of the respondents were separated. This implies that the married respondents were the majority and were therefore likely to understand sustainability issues. It was presumed that they would be having information on the subject under study.

### 4.3.5 Respondents' Awareness of County Funded Projects

The research therefore sought to establish the awareness of County Funded Projects. The results obtained were as indicated on Table 4.6.

**Table 4.6: Respondents' Awareness of County Funded Projects**

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 44 | 89.8% |
| No | 5 | 10.2 % |
| **TOTAL** | **49** | **100%** |

The results show that 89.8% of the respondents had been aware of County Funded Projects, while 10.2% of the respondents were not. The results indicated that the respondents had an awareness of the County Funded Projects. This would mean that information on County Funded Projects was communicated to all parties in time.

### 4.3.6 Respondents Involvement in County Funded Projects

The research therefore sought to establish the respondents' involvement in County Funded Projects. The results obtained were as shown in Table 4.7.

**Table 4.7: Respondents' Involvement in County Funded Projects**

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 28 | 57.1% |
| No | 21 | 42.9% |
| **TOTAL** | **49** | **100%** |

According to the findings, 57.1 % of the respondents were involved in County Funded Projects while 42.9 % of the respondents were not. This was an indication that there was great citizen participation in County Funded Projects as enshrined in the Kenya Constitution (2010).

### 4.4 Stakeholders' Participation and Sustainability of County Funded Projects

This section sought to establish respondents' awareness of how stakeholders' participation relates with sustainability of projects. First, respondents were required to respond with an either yes or no answer on whether project sustainability is influenced by stakeholders' participation. 81.6% affirmed this while 18.4% declined. Further, respondents were asked to indicate the extent to which they agreed to listed factors' influence sustainability of County Funded Projects.

#### 4.4.1 Design and Planning of Projects

Respondents were required to respond on a likert rating scale whether design and planning of projects influenced sustainability of County Funded Projects. The findings are shown in table 4.8.

**Table 4.8: Design and Planning of Projects**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 4 | 8.2% |
| Disagree | 6 | 12.2% |
| Neutral | 4 | 8.2% |
| Agree | 7 | 14.3% |
| Strongly agree | 28 | 57.1% |
| **TOTAL** | **49** | **100%** |

The findings of the study show that 57.1% of the respondents strongly agreed that design and planning of projects influenced sustainability. 14.3% agreed that design and planning influenced sustainability while 12.2% disagreed that design and planning influenced sustainability. Only 8.2% strongly disagreed that design and planning influenced sustainability. 8.2% of the respondents were neutral on this.

### 4.4.2 Monitoring and Evaluation

Respondents were required to respond on a likert rating scale whether monitoring and evaluation influenced sustainability. The findings are as presented in table 4.9.

**Table 4.9: Monitoring and Evaluation**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 4 | 8.2% |
| Disagree | 3 | 6.1% |
| Neutral | 3 | 6.1% |
| Agree | 31 | 63.3% |
| Strongly agree | 8 | 16.3% |
| **TOTAL** | **49** | **100%** |

Findings indicated that 63.3% of the respondents agreed that monitoring and evaluation influenced sustainability followed by 16.3% who strongly agreed to this. 8.2% strongly disagreed to this while 6.1% disagreed that monitoring and evaluation influenced sustainability of County Funded Projects. 6.1% were neutral on this.

### 4.4.3 Provision of Human Resource (Labour)

Respondents were required to respond on a likert rating scale whether provision of human resource influenced sustainability. The findings are shown in table 4.10.

**Table 4.10: Provision of Human Resource (Labour)**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 2 | 4.1% |
| Disagree | 4 | 8.2% |
| Neutral | 4 | 8.2% |
| Agree | 12 | 24.5% |
| Strongly agree | 27 | 55.1% |
| **TOTAL** | **49** | **100%** |

The study found out that 55.1% of the respondents strongly agreed that provision of human resource influenced sustainability followed by 24.5% who agreed to this. 8.2% s disagreed that provision of human resource influenced sustainability and 4.1% strongly disagreed with this. Only 8.2% were indifferent in this issue.

### 4.4.4 Provision of Materials

Respondents were required to respond on a likert rating scale whether provision of materials influenced sustainability. The findings are as shown in table 4.11.

**Table 4.11: Provision of Materials**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Disagree | 4 | 8.2% |
| Neutral | 9 | 18.4% |
| Agree | 23 | 46.9% |
| Strongly agree | 13 | 26.5% |
| **TOTAL** | **49** | **100%** |

Study findings show that 46.9% of the respondents agreed that provision of materials influenced sustainability while 26.5% strongly agreed to this. 18.4% were neutral while 8.2% of the respondents disagreed that provision of materials influenced sustainability. 2% of the respondents strongly disagreed that provision of materials influenced sustainability of County Funded Projects.

### 4.4.5 Security

Respondents were required to respond on a likert rating scale whether provision for security influenced sustainability of County Funded Projects in Mbooni Sub-County. The findings are shown in table 4.12.

**Table 4.12: Security**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 3 | 6.1% |
| Disagree | 5 | 10.2% |
| Neutral | 8 | 16.3% |
| Agree | 19 | 38.8% |
| Strongly agree | 14 | 28.6% |
| **TOTAL** | **49** | **100%** |

The study established that 38.8% of the respondents agreed that provision for security influenced sustainability followed closely by 28.6% of respondents who strongly agreed to this.16.3% were neutral on whether provision for security influenced sustainability. 10.2% disagreed with this factor's influence on sustainability. Only 6.1% of the respondents were neutral on whether provision for security influenced sustainability.

### 4.4.6 Part Financing

Respondents were required to respond on a 5 point likert rating scale whether part financing influenced sustainability. The findings are as shown in table 4.13.

**Table 4.13: Part Financing**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 10 | 20.4% |
| Disagree | 15 | 30.6% |
| Neutral | 5 | 10.2% |
| Agree | 7 | 14.3% |
| Strongly agree | 12 | 24.5% |
| **TOTAL** | **49** | **100%** |

Study findings indicate that 30.6% of the respondents disagreed that part financing influenced sustainability while 24.5% strongly agreed with this. 20.4% strongly disagreed that part financing influenced sustainability while 14.3% agreed with this. Only 10.2% were neutral in this matter.

### 4.5 Monitoring and Evaluation

This section sought to establish respondents' awareness of how Monitoring and Evaluation relates with sustainability. First, respondents were required to respond with an either yes or no answer on whether sustainability is influenced by Monitoring and Evaluation. 83.7% affirmed this while 16.3% declined. Further, respondents were asked to indicate the extent to which they agreed to listed factors' influence on sustainability of County Funded Projects.

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### 4.5.1 Qualified and Experienced Monitoring and Evaluation Officers

Respondents were required to respond on a 5 point likert rating scale whether provision of qualified and experienced monitoring and evaluation officers influences sustainability. The findings are contained in table 4.14.

**Table 4.14: Qualified and Experienced Monitoring and Evaluation Officers**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Disagree | 3 | 6.1% |
| Neutral | 3 | 6.1% |
| Agree | 15 | 30.6% |
| Strongly agree | 27 | 55.1% |
| **TOTAL** | **49** | **100%** |

According to the research findings, 55.1% of the respondents strongly agreed that qualified and experienced monitoring and evaluation officers influence sustainability and 30.6% were in agreement with this. 6.1% disagreed that qualified and experienced monitoring officers influenced sustainability of County Funded Projects while 6.1% were neutral on this. Only 2% of the respondents strongly disagreed in this.

### 4.5.2 Efficient and Effective Monitoring and Evaluation Process

Respondents were required to respond on a 5 point likert rating scale whether efficient and effective monitoring and evaluation process influence sustainability. The findings are as shown in table 4.15.

**Table 4.15: Efficient and Effective Monitoring and Evaluation Process**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 7 | 14.3% |
| Disagree | 12 | 24.5% |
| Neutral | 3 | 6.1% |
| Agree | 25 | 51% |
| Strongly agree | 2 | 4.1% |
| **TOTAL** | **49** | **100%** |

Findings of the study showed that 51% agreed that efficient and effective monitoring and evaluation influences sustainability against 24.5% who disagreed with this. 14.3% strongly disagreed that efficient and effective monitoring and evaluation influenced sustainability while 6.1% were neutral on this. Only 4.1% strongly disagreed that efficient and effective monitoring and evaluation process influenced sustainability of County Funded Projects.

### 4.5.3 Availability of Resources

Respondents were required to respond on a 5 point likert rating scale whether availability of resources influences sustainability of County Funded Projects. The findings are as shown in table 4.16.

**Table 4.16: Availability of Resources**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 3 | 6.1% |
| Disagree | 3 | 6.1% |
| Neutral | 7 | 14.3% |
| Agree | 15 | 30.6% |
| Strongly agree | 21 | 42.9% |
| **TOTAL** | **49** | **100%** |

According to findings of the study, availability of resources influences sustainability of projects as evidenced by 42.9% of the respondents who strongly agreed with this followed by 30.6% who agreed with this. 14.3% were neutral on this. Only 6.1% strongly disagreed that availability of resources influence sustainability followed by 6.1% who disagreed with this.

### 4.5.4 Poor Communication or Lack of Information

Respondents were required to respond on a 5 point likert rating scale whether poor communication or lack of information influence sustainability of projects. The findings are as shown in table 4.17.

**Table 4.17: Poor Communication or Lack of Information**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 10 | 20.4% |
| Disagree | 9 | 18.4% |
| Neutral | 18 | 36.7% |
| Agree | 8 | 16.3% |
| Strongly agree | 4 | 8.2% |
| **TOTAL** | **49** | **100%** |

Majority of the respondents were neutral on this factor as represented by 36.7%. 20.4% strongly disagreed that poor communication or lack of information influence sustainability followed by 18.4% who disagreed with this.16.3% agreed that poor communication or lack of information influences sustainability. Only 8.2% strongly agreed with this.

### 4.5.5 Trainings on Monitoring and Evaluation

Respondents were required to respond on a 5 point likert rating scale whether training on monitoring and evaluation influence sustainability of County Funded Projects. The findings are as shown in table 4.18.

**Table 4.18: Training on Monitoring and Evaluation**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 3 | 6.1% |
| Disagree | 5 | 10.2% |
| Neutral | 5 | 10.2 % |
| Agree | 22 | 44.9% |
| Strongly agree | 14 | 28.6% |
| **TOTAL** | **49** | **100%** |

According to the findings of the research, 44.9% of the respondents agreed that training on monitoring and evaluation influence sustainability while 28.6% strongly agreed with this. 10.2% of the respondents disagreed that training on monitoring and evaluation influence sustainability and 10.2% also were neutral on this. Only 6.1% strongly disagreed that training on monitoring and evaluation influence sustainability of County Funded Projects.

### 4.6 Staff Competence and Sustainability

This section sought to establish respondents' awareness of how staff competence influence sustainability of County Funded Projects. First, respondents were required to respond with an either yes or no answer on whether staff competence influence sustainability of County Funded Projects**.** 67.3% affirmed this while 32.7% declined. Further, respondents were asked to indicate the extent to which they agreed to listed factors' influence sustainability of County Funded Projects.

### 4.6.1 Accuracy Levels

Respondents were required to respond on a 5 point likert rating scale whether accuracy levels influence sustainability of County Funded Projects. The findings are presented in table 4.19.

**Table 4.19: Accuracy Levels**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Disagree | 9 | 18.4% |
| Neutral | 4 | 8.2% |
| Agree | 13 | 26.5% |
| Strongly agree | 22 | 44.9% |
| **TOTAL** | **49** | **100%** |

The study found that accuracy levels influence sustainability of County Funded Projects as shown by 44.9% who strongly agreed to this. 26.5% agreed with this while 18.4% disagreed that accuracy levels influence sustainability of County Funded Projects followed by 8.2% who were neutral in this. Only 2% of the respondents strongly disagreed that accuracy levels influence sustainability of County Funded Projects.

### 4.6.2 Lack of Experience

Respondents were required to respond on a 5 point likert rating scale whether lack of experience influence sustainability of County Funded Projects. The findings are contained in table 4.20.

**Table 4.20: Lack of experience**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 4 | 8.2% |
| Disagree | 6 | 12.2% |
| Neutral | 5 | 10.2% |
| Agree | 21 | 42.9% |
| Strongly agree | 13 | 26.5% |
| **TOTAL** | **49** | **100%** |

According to findings of the study, lack of experience has an influence on sustainability of County Funded Projects as indicated by 42.9% who agreed to this and 26.5% who strongly agreed with this. 12.2% disagreed that lack of experience has an influence on sustainability of County Funded Projects against 10.2% who were neutral on this. Only 8.2% strongly disagreed with this.

### 4.6.3 Lack of Proper Academic Qualifications

Respondents were required to respond on a 5 point likert rating scale whether lack of proper academic qualifications influence sustainability of County Funded Projects. The findings are as shown in table 4.21.

**Table 4.21: Lack of Proper Academic Qualifications**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 2 | 4.1% |
| Disagree | 5 | 10.2% |
| Neutral | 10 | 20.4% |
| Agree | 18 | 36.7% |
| Strongly agree | 14 | 28.6% |
| **TOTAL** | **49** | **100%** |

From the findings of the study, 36.7% of the respondents agreed that lack of proper academic qualifications influence sustainability. 28.6% strongly agreed that lack of proper academic qualifications influence sustainability of County Funded Projects followed by 20.4% who were neutral on this. 10.2% disagreed that lack of proper academic qualifications influence sustainability of County Funded Projects and 4.1% strongly disagreed that lack of proper academic qualifications influence sustainability of County Funded Projects.

### 4.6.4 Demotivated Staff

Respondents were required to respond on a 5 point likert rating scale whether staff demotivation influence sustainability of County Funded Projects. The findings are contained in table 4.22.

**Table 4.22: Demotivated Staff**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 9 | 18.4% |
| Disagree | 10 | 20.4% |
| Neutral | 14 | 28.6% |
| Agree | 10 | 20.4% |
| Strongly agree | 6 | 12.2% |
| **TOTAL** | **49** | **100%** |

Study findings show that 28.6% of the respondents were neutral on whether demotivation among staff influences sustainability of County Funded Projects. 20.4% were in agreement with this followed by 12.2% who strongly agreed with this. 18.4% strongly disagreed on whether demotivation among staff influences sustainability of County Funded Projects while 20.4% disagreed on whether demotivation among staff influences sustainability of County Funded Projects.

### 4.6.5 Transparency and Accountability

Respondents were required to respond on a 5 point likert rating scale whether transparency and accountability has an influence on sustainability of County Funded Projects. The findings are as presented in table 4.23.

**Table 4.23: Transparency and Accountability**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 13 | 26.5% |
| Disagree | 11 | 22.4% |
| Neutral | 5 | 10.2% |
| Agree | 9 | 18.4% |
| Strongly agree | 11 | 22.4% |
| **TOTAL** | **49** | **100%** |

According to findings of the study, 26.5% of the respondents strongly agreed that transparency and accountability has an influence on sustainability of County Funded Projects. 22.4% disagreed that transparency and accountability has an influence on sustainability of County Funded Projects. Similarly, 22.4% strongly agreed with this followed by 18.4% who agreed with this. Only 10.2% were neutral on whether transparency and accountability has an influence on sustainability of County Funded Projects.

### 4.7 Availability of Resources and Sustainability

This section sought to establish respondents' awareness of how availability of resources relates with sustainability of County Funded Projects. First, respondents were required to respond with an either yes or no answer on whether sustainability is influenced by availability of resources. 91.2% affirmed this while 8.2% declined. Further, respondents were asked to indicate the extent to which they agreed to listed factors' influenced sustainability of County Funded Projects.

### 4.7.1 Availability of Finance

Respondents were required to respond on a 5 point likert rating scale whether availability of finance influence sustainability of County Funded Projects. The findings are as shown in table 4.24.

**Table 4.24: Availability of Finance**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Disagree | 3 | 6.1% |
| Agree | 14 | 28.6% |
| Strongly agree | 31 | 63.3% |
| **TOTAL** | **49** | **100%** |

Study findings indicated that availability of finance influence sustainability of County Funded Projects as indicated by 63.3% of respondents who strongly agreed to this and 28.6% who agreed with this. 6.1% disagreed that availability of finance influence sustainability of County Funded Projects while 2% strongly disagreed with this.

### 4.7.2 Availability of skilled personnel

Respondents were required to respond on a 5 point likert rating scale whether availability of skilled personnel influence sustainability of County Funded Projects. The findings are contained in table 4.25.

**Table 4.25: Availability of skilled personnel**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 4 | 8.2% |
| Disagree | 2 | 4.1% |
| Neutral | 1 | 2% |
| Agree | 33 | 67.3% |
| Strongly agree | 9 | 18.4% |
| **TOTAL** | **49** | **100%** |

According to findings of the study, 67.3% agreed that availability of skilled personnel influence sustainability of County Funded Projects followed by 18.4% who strongly agreed to this. 8.2% strongly disagreed that availability of personnel influence sustainability followed by 4.1% who disagreed with this. 2% were neutral on whether skilled personnel influence sustainability of County Funded Projects.

### 4.7.3 Availability of materials

Respondents were required to respond on a 5 point likert rating scale whether availability of materials influence sustainability of County Funded Projects. The findings are as shown in table 4.26.

**Table 4.26: Availability of materials**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Neutral | 9 | 18.4% |
| Agree | 12 | 24.5% |
| Strongly agree | 27 | 55.1% |
| **TOTAL** | **49** | **100%** |

Study findings show that 55.1% strongly agreed that availability of materials influence sustainability of County Funded Projects in Mbooni Sub-County followed by 24.5% who agreed to this. 18.4% were neutral on that availability of materials influence sustainability while 2% strongly disagreed that availability of materials influence sustainability of County Funded Projects in Mbooni Sub-County.

### 4.7.4 Availability of transport means

Respondents were required to respond on a 5 point likert rating scale whether transport means influence sustainability of County Funded Projects. The findings are as presented in table 4.27.

**Table 4.27: Availability of transport means**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 3 | 6.1% |
| Disagree | 4 | 8.2% |
| Neutral | 12 | 24.5% |
| Agree | 16 | 32.7% |
| Strongly agree | 14 | 28.6% |
| **TOTAL** | **49** | **100%** |

According to the study findings 32.7% agreed that transport means had an influence on sustainability of County Funded Projects followed by 28.6% who strongly agreed with this. 24.5% were neutral on whether transport means influence sustainability of County Funded Projects followed by 8.2% who disagreed with this. 6.1% strongly disagreed that availability of transport means influence sustainability of County Funded Projects in Mbooni Sub-County.

### 4.7.5 Improper use of resources

Respondents were required to respond on a 5 point likert rating scale whether improper use of resources influence sustainability of County Funded Projects. The findings are as tabulated in table 4.28

**Table 4.28: Improper use of resources**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 13 | 26.5% |
| Disagree | 10 | 20.4% |
| Neutral | 9 | 18.4% |
| Agree | 8 | 16.3% |
| Strongly agree | 9 | 18.4% |
| **TOTAL** | **49** | **100%** |

According to the study findings 26.5% of the respondents strongly disagreed that improper use of resources influence sustainability of County Funded Projects followed by 20.4% who disagreed to this. 18.4% strongly agreed that improper use of resources influence sustainability followed by 16.3% who agreed with this. 18.4% were neutral in this.

### 4.8 Measurement of dependent variable

This section sought to establish the extent to which various factors influenced sustainability of County Funded Projects in Mbooni Sub-County. The respondents were asked to indicate the extent to which they agreed to listed factors' that are related to sustainability of County Funded Projects in Mbooni Sub-County.

#### 4.8.1 Stakeholders' participation

Respondents were asked to rate on a five point likert scale whether stakeholders' participation had an effect on sustainability of County Funded Projects in Mbooni Sub-County and the findings are as presented in table 4.29.

**Table 4.29: Stakeholders' participation**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 1 | 2% |
| Disagree | 1 | 2% |
| Neutral | 2 | 4.1% |
| Agree | 10 | 20.4% |
| Strongly agree | 35 | 71.5% |
| **TOTAL** | **49** | **100%** |

From the study findings, stakeholders' participation has influenced sustainability of County Funded Projects in Mbooni Sub-County, as indicated by 71.5% of respondents who strongly agreed to this statement and 20.4% who agreed with this.4.1% were neutral on this. 2% strongly disagreed that stakeholders' participation influenced sustainability of County Funded Projects in Mbooni Sub-County and 2% who disagreed with this. Three out of the interviewed chief officers and Sub-County departmental heads were in agreement that stakeholders' participation had an influence on sustainability of County Funded Projects. One of them is quoted thus *"It is no doubt that sustainability of County Funded Projects is dependent on stakeholders' participation, among other things."*

### 4.8.2 Monitoring and Evaluation

Respondents were asked to rate on a five point likert scale whether M & E influenced sustainability of County Funded Projects in Mbooni Sub- County and the findings are as shown in table 4.30.

**Table 4.30: Monitoring and Evaluation**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 3 | 6.1% |
| Disagree | 3 | 6.1% |
| Neutral | 1 | 2% |
| Agree | 14 | 28.6% |
| Strongly agree | 28 | 57.2% |
| **TOTAL** | **49** | **100%** |

Study findings showed that 57.2% of the respondents strongly agreed that M &E influenced sustainability of County Funded Projects in Mbooni Sub-County and 28.6% of respondents who agreed with this. 6.1% of the respondents disagreed that M & E influenced sustainability of County Funded Projects in Mbooni Sub-County followed by 6.1% who strongly disagreed with this and 2% were neutral in this. *"...If it were not for effective M & E the projects that are initiated and implemented by the county government would be so much unsustainable , lack of sustainability would be so high, we would be having a number of white elephant projects",* said one of the sub-county departmental heads.

### 4.8.3 Staff competence

Respondents were asked to rate on a five point likert scale whether staff competence has influenced sustainability of County Funded Projects in Mbooni Sub- County and the findings are as presented in table 4.31.

**Table 4.31: Staff competence**

| Scale | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 2 | 4.1% |
| Disagree | 2 | 4.1% |
| Neutral | 7 | 14.3% |
| Agree | 17 | 34.7% |
| Strongly agree | 21 | 42.9% |
| **TOTAL** | **49** | **100%** |

According to the study findings 42.9% of the respondents strongly agreed that staff competence had an influence on sustainability of County Funded Projects in Mbooni sub-county followed by 34.7% of respondents who agreed to this.14.3% of respondents were neutral in this. 4.1% of the respondents strongly disagreed that staff competence influenced sustainability of County Funded Projects in Mbooni sub-county followed by 4.1% of respondents who disagreed with this. From the interview sessions, all of the interviewed ten chief officers agreed that staff competence had an influence on sustainability of County Funded Projects in Mbooni sub-county. One of the respondents asserted *"You can most definitely never separate staff competence from project sustainability, the two are related."*

### 4.8.4 Resource availability

Respondents were asked to rate on a five point likert scale whether resource availability had an influence on sustainability of County Funded Projects in Mbooni sub-county and the findings are as shown in table 4.32.

**Table 4.32: Resource availability**

| Scale | Frequency | Percentage |
|---|---|---|
| Neutral | 3 | 6.1% |
| Agree | 11 | 22.4% |
| Strongly agree | 34 | 69.5% |
| **TOTAL** | **49** | **100%** |

The study found out that availability of resources has influenced sustainability of County Funded Projects. In Mbooni sub-county as indicated by 69.5% of respondents who strongly agreed to this statement and 22.4% who agreed to this. Only 8% of the respondents were neutral on this. The study findings show that availability of resources influence sustainability of County Funded Projects in Mbooni sub-county. This is as evidenced by one of the interview respondents who says *"…availability of resources is crucial for sustainability of County Funded Projects in Mbooni sub- county."*

### 4.9 Hypothesis testing

Hypothesis was framed and was tested using Chi- square test. To test the hypotheses of the study, chi-square test was conducted with a significance test at .05% level. The formula used for calculating chi- square value is as follows:

$$X^2 = \frac{\Sigma (O-E)^2}{E}$$

Where, E- Expected frequency

O- Observed frequency

The use of the chi-square ($X^2$) was to test the hypotheses (H1 - H4) by determining the strength of the relationship between the variables with a .05% significant level, meaning that there is only a 5 percent chance that the statistical significance, if any, resulted from random chance. The premise for the validity and consistency of the analysis is the calculation of the P-value. The p-value is the probability that a sample drawn from a population is tested given that the assumptions proposed by the study are true.

**Table 4.33: Expected frequency and computed chi-square ($X^2$ ) of stakeholders' participation and sustainability**

| | **Observed frequency (O)** | **Expected frequency (E)** | **O-E** | **$(O-E)^2$** | **$\frac{(O-E)^2}{E}$** |
|---|---|---|---|---|---|
| Strongly agree | 35 | 9.8 | 25.2 | 635.04 | 64.8 |
| Agree | 10 | 9.8 | 0.2 | 0.04 | 0.004 |
| Neutral | 2 | 9.8 | -7.8 | 60.84 | 6.208 |
| Disagree | 1 | 9.8 | -8.8 | 77.44 | 7.902 |
| Strongly disagree | 1 | 9.8 | -8.8 | 77.44 | 7.902 |

$\sum X^2 = 86.82$

Table 4.33 above presents the observed and expected frequencies with the computed chi-square statistics for the measures of the under study (Mbooni Sub- County). To test the first hypothesis, the chi-square statistic was calculated using the model:

$$X^2 = \Sigma \frac{(O-E)^2}{E}$$

$\sum$ = Summation

O= Observed frequency, i.e. from table 4.33 above

E = Expected frequency, i.e. (Row total x column total)
_____
Grand total

H1: There is no significant relationship between stakeholders' participation and sustainability of County Funded Projects in Mbooni Sub-County. Chi-square was used as a test statistic at significance level of .05% (i.e. $\alpha = 0.5$), and the degree of freedom (df=4), computed chi-square ($X^2$ ) = 86.82and chi-square critical = 9.49. Thus the hypothesis (H1) at 5% level of significance was nullified since chi-square ($X^2$) computed 86.82 was more than chi-square critical. Therefore the hypothesis of the study which indicates that there is no significant relationship between stakeholders' participation and sustainability of County Funded Projects in Mbooni Sub-County was rejected and the alternative hypothesis accepted.

**Table 4.34: Expected frequencies and computed chi-square ($X^2$ ) of monitoring and evaluation and sustainability**

| Observed frequency (O) | | Expected frequency (E) | O-E | $(O-E)^2$ | $\frac{(O-E)^2}{E}$ |
|---|---|---|---|---|---|
| Strongly Agree | 28 | 9.8 | 18.2 | 331.24 | 33.8 |
| Agree | 14 | 9.8 | 4.2 | 17.64 | 1.8 |
| Neutral | 1 | 9.8 | -8.8 | 77.44 | 7.902 |
| Disagree | 3 | 9.8 | -6.8 | 46.24 | 4.718 |
| Strongly disagree | 3 | 9.8 | -6.8 | 46.24 | 4.718 |

$\sum X^2 = 52.94$

Table 4.34 above presents the observed and expected frequencies with the computed chi-square statistics for the measures under study. To test the second hypothesis, the chi-square statistic was calculated using the model:

$$X^2 = \Sigma \frac{(O-E)^2}{E}$$

$\sum$ = Summation

O= Observed frequency, i.e. from table 4.34 above

E = Expected frequency, i.e. $\frac{\text{(Row total x column total)}}{\text{Grand total}}$

H2: There is no significant relationship between monitoring and evaluation and sustainability of County Funded Projects in Mbooni Sub-County. Chi-square was used as a test statistic at significance level of .05% (i.e. $\alpha = 0.5$), and the degree of freedom (df=4), computed chi-square ($X^2$) = 52.94 and chi-square critical = 9.49.

Thus the hypothesis (H2) at 5% level of significance was nullified since chi-square ($X_2$) computed (52.94) was more than chi-square critical 9.49. Therefore the hypothesis of the study which indicates that there is no significant relationship between monitoring and evaluation and sustainability of County Funded Projects in Mbooni sub-county was rejected and the alternative hypothesis accepted.

**Table 4.35: Expected frequency and computed chi-square ($X^2$ ) of staff competence and sustainability**

| Observed frequency (O) | | Expected frequency (E) | O-E | $(O-E)^2$ | $\frac{(O-E)^2}{E}$ |
|---|---|---|---|---|---|
| Strongly Agree | 21 | 9.8 | 11.2 | 125.44 | 12.80 |
| Agree | 17 | 9.8 | 7.2 | 51.84 | 5.29 |
| Neutral | 7 | 9.8 | -2.8 | 7.84 | 0.80 |
| Disagree | 2 | 9.8 | -7.8 | 60.84 | 6.208 |
| Strongly disagree | 2 | 9.8 | -7.8 | 60.84 | 6.208 |

$\sum X^2 = 31.31$

Table 4.35 above presents the observed and expected frequencies with the computed chi-square statistics for the measures under study. To test the third hypothesis, the chi-square statistic was calculated using the model:

$$X^2 = \Sigma \frac{(O-E)^2}{E}$$

$\sum$ = Summation

O= Observed frequency, i.e. from table 4.35 above

E = Expected frequency, i.e. $\frac{\text{(Row total x column total)}}{\text{Grand total}}$

H3: There is no significant relationship between staff competence and sustainability of County Funded Projects in Mbooni sub-county. Chi-square was used as a test statistic at significance level of .05% (i.e. $\alpha = 0.5$), and the degree of freedom (df=4), computed chi-square ($X^{2)}$ = 31.31 and chi-square critical = 9.49. Thus the hypothesis (H3) at 5% level of

significance was nullified since chi-square ($X^2$) computed 31.31 was more than chi-square critical. Therefore the hypothesis of the study which indicates that there is no significant relationship between staff competence and sustainability of County Funded Projects in Mbooni sub-county was rejected and the alternative hypothesis accepted.

**Table 4.36: Expected frequencies and computed chi-square ($X^{2)}$ of availability of resources and sustainability**

| Observed frequency (O) | | Expected frequency (E) | O-E | $(O-E)^2$ | $\frac{(O-E)^2}{E}$ |
|---|---|---|---|---|---|
| Strongly agree | 35 | 12.3 | 22.8 | 519.84 | 42.26 |
| Agree | 10 | 12.3 | -2.3 | 5.29 | 0.43 |
| Neutral | 3 | 12.3 | -9.3 | 86.49 | 7.03 |
| Strongly disagree | 1 | 12.3 | -11.3 | 127.69 | 10.38 |

$\sum X^{2} = 60.11$

Table 4.36 above presents the observed and expected frequencies with the computed chi-square statistics for the measures under study. To test the last hypothesis, the chi-square statistic was calculated using the model:

$$X^2 = \frac{\Sigma (O-E)^2}{E}$$

$\sum$ = Summation

O= Observed frequency, i.e. from table 4.36 above

E = Expected frequency, i.e. (Row total x column total)

Grand total

H4: There is no significant relationship between availability of resources and sustainability of County Funded Projects in Mbooni sub-county. Chi-square was used as a test statistic at significance level of .05% (i.e. $\alpha = 0.5$), and the degree of freedom (df=4), computed chi-square ($X^2$ ) = 60.11and chi-square critical 9.49. Thus the hypothesis (H4) at 5% level of significance was nullified since chi-square ($X^2$) computed 60.11 was more than chi-square critical. Therefore the hypothesis of the study which indicates that there is no significant relationship between availability of resources and sustainability of County Funded Projects in Mbooni sub-county was rejected and the alternative hypothesis accepted.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMEDATIONS

## 5.1 Introduction

This chapter summarizes the findings, discussions, conclusions and recommendations based on the analysis in chapter four. It also outlines the contribution to the body of knowledge and suggestions for further research.

## 5.2 Summary of findings

This section provides a summary of the findings as presented in chapter four of the study. The aim of this research was to analyse the factors that affect sustainability of County Funded Projects in Mbooni Sub-County. The study used descriptive and inferential statistics, and analysed data using statistical package for social scientists. Qualitative data arising from interview guide and open ended questions in questionnaires was analysed using content analysis. Major findings of the research were generated and presented in chapter four of the research project report.

In response to demographic characteristics, the study findings indicated that there were more males than female PMC members in Mbooni Sub-County. This is evidenced by 61.2% of male respondents against 38.8% of female respondents. Majority of the respondents (67.3%) were between the ages 41-45 years. On marital status, it was established that 65.3% of the respondents were married, making up the majority. 42.9% of the informants were in secondary school leavers.

Based on objective one which sought to determine if stakeholders' participation was related to sustainability, 81.6% of the respondents were on the affirmative. This was backed up by 57.1% of the respondents who strongly agreed that design and planning of projects by

stakeholders affect sustainability. M&E affect sustainability as indicated by 63.3% of respondents who agreed with this. 55.1% strongly agreed that provision for human resource had an effect on job sustainability of County Funded Projects. 46.9% agreed that provision for materials such as sand among others had an effect on sustainability while 38.8% s agreed that provision for security had an influence on sustainability of County Funded Projects in Mbooni Sub-County.

Regarding objective two which sought to establish the influence of M&E on sustainability of County Funded Projects in Mbooni Sub- County, the findings revealed that there was a significant relationship between M& E and sustainability of County Funded Projects in Mbooni Sub-County as reported by 83.7% of the respondents who agreed with this. This statement was supported by 55.1% of the respondents who strongly agreed that qualified and experienced M&E officers had an effect on sustainability of County Funded Projects while 51% agreed that provision for efficient and effective M&E process had an effect on sustainability of County Funded Projects. Availability of resources had an effect on sustainability as indicated by 42.9% of the respondents who strongly agreed to this factor. Training on M& E had an effect on sustainability as evidenced by 44.9% of the respondents who agree with this.

In reference to objective three which sought to determine if staff competence was related to sustainability of County Funded Projects in Mbooni Sub- County, 67.3% were to the affirmative while 32.7% declined. This was backed up by 44.9% who strongly agreed that accuracy levels had an effect on sustainability. Lack of experience had an effect on sustainability as indicated by 42.9% who agreed to this. 36.7% of the respondents agreed that lack of proper academic qualifications had an effect on sustainability.

Regarding objective four which sought to establish the extent to which availability of resources affect sustainability of County Funded Projects, 91.2% of the respondents strongly agreed with this statement. Availability of finances or funds had an effect on sustainability as indicated by 63.3% of respondents who strongly agreed to this. 67.3% agreed that availability of skilled personnel affected sustainability while 55.1%strongly agreed that availability of materials such as sand affected sustainability of County Funded Projects in Mbooni Sub-County. 32.7% agreed that availability of transport means had an effect on sustainability.

### 5.3 Conclusions

Based on objective one, the study revealed that there is influence of stakeholder participation on sustainability of County Funded Projects in Mbooni Sub-County. This can be taken to mean that the extent, to which stakeholders participate, ensures people decision-making processes and decision-making capacity of project stakeholders at different levels. It further enhances project ownership, development of the "*we*'' feeling and sustainability which is one of the key aspects considered in monitoring and evaluation of projects.

In reference to objective two, the study also revealed that effective and quality monitoring and evaluation plays also a vital role in ensuring project sustainability and it is critical to set aside adequate financial and human resources at the planning stage and also incorporate training on M&E during all stages of project management

Regarding objective three, the study concluded that staff competence influences sustainability. This is to mean that the effectiveness and experience of agencies tasked with construction of projects have a direct impact on the sustainability levels of projects. This will

ensure that projects conform to the triple constraint of time, quality and cost thus becoming sustainable in the long-run.

Finally on objective four, the study concluded that there is a great influence of availability of resources on sustainability of County Funded Projects in Mbooni Sub-County. The study revealed that adequate resources ensure sustainability together with skilled project personnel. This will ensure timely completion and less expenses will be incurred in the acquisition of materials for sustaining the projects.

### 5.4 Recommendations.

The findings of this study revealed that the factors influencing sustainability of County Funded Projects in Mbooni Sub-County are: stakeholder participation, M&E, staff competence and availability of resources. To promote and enhance sustainability the study recommended that all the relevant stakeholders should be informed and involved in all development projects for them to develop ownership attitude that can ensure sustainability of CFPs. Community members need to be educated on sustainability of County Funded Projects to ensure that they are able to push them forward after withdrawal of county funding.

It is recommended that the Government of Makueni County should adequately plan on effective M&E. Adequate financial and human resources should be allocated for M&E during implementation of County Funded Projects to ensure all areas that need remedial measures are taken care of in advance to ensure sustainability. It was also recommended that the County Government should engage competent staff and agencies to implement and monitor County Funded Projects. Finally, the Government of Makueni County should ensure that it implements County Funded Projects where there are necessary resources as this will ensure sustainability of

projects. In a nutshell, the results of this study gives a basis for the recommendation that the Government of Makueni County should improve on stakeholder involvement and M&E in order to increase sustainability of County Funded Projects.

### 5.4.1 Contribution to existing body of knowledge

This study appreciates other scholarly work that has been done on the area of sustainability of projects. The study proves to be a milestone for researchers, project managers and students to properly understand the factors influencing sustainability of projects. The study is however open to academic criticism.

### 5.4.2 Suggestions for further research

Building on this study, it may be fruitful for future research to explore the area of sustainability from the perspective of Constituency Development Funded Projects. The researcher also recommends that similar studies be conducted in other parts of Makueni County to assess the factors influencing sustainability of County Funded Projects and compare the results of other parts of the county with the Mbooni Sub-County results. Other studies should be conducted on the challenges facing sustainability of County Funded Projects in Makueni.

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## APPENDICES

**APPENDIX ONE: QUESTIONNAIRE** SERIAL NO……

Obadiah MutindaKithome,

P.O Box 75-90300,

Makueni.

**INTRODUCTION LETTER**

Dear Respondent,

I am a Masters student in the School of Extra Mural Studies at the University of Nairobi carrying out a research on the factors influencing sustainability of County Funded Projects in Mbooni Sub-County - Makueni County. The purpose of this letter is therefore to kindly request for your voluntary participation in this research by filling the attached questionnaire. The information gathered shall be treated confidentially and shall be used for this study only.

Thank you in advance and your response will be highly appreciated.

Yours faithfully,

Obadiah M. Kithome

L50/70054/2013

**SECTION A: BACKGROUND INFORMATION**

1. Gender
   1. Male ☐
   2. Female ☐

2. Age:
   1. Below 18 years ☐
   2. 19-25 years ☐
   3. 26-30 years ☐
   4. 31-40 years ☐
   5. 41-45 years ☐
   6. Above 45 years ☐

3. Marital Status:
   1. Married ☐
   2. Single ☐
   3. Divorced ☐
   4. Separated ☐

4. For how long have you in Mbooni Sub- County?
   1. Less than 1 year ☐
   2. Between 1 and 5 years ☐
   3. Between 5 and 10 years ☐
   4. Above 10 years ☐

5. Are you aware of County Funded Projects in Mbooni Sub- County?
   1. Yes ☐ 2. No ☐

6. If yes in 6 above, are you involved in County Funded Projects in Mbooni Sub-County?

1.Yes ☐ 2.No ☐

**SECTION B: STAKEHOLDERS' PARTICIPATION AND SUSTAINABILITY OF COUNTY FUNDED PROJECTS**

7. (a) Do you think stakeholder's participation influence sustainability of County Funded Projects in Mbooni Sub- County (Tick one)?

   1. Yes ☐
   2. No ☐

(b) Please indicate the extent to which you agree to the following stakeholders' role on sustainability of County Funded Projects on a scale of 1-5 where: Strongly Agree = 5 Agree= 4 Neutral = Disagree = 2 Strongly disagree = 1

| **Factors** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Design and planning of projects | | | | | |
| Monitoring and evaluation | | | | | |
| Provision of human resource (labour) | | | | | |
| Provision of materials (e.g. water, sand etc.) | | | | | |
| Security | | | | | |
| Part financing | | | | | |

**SECTION C: MONITORING AND EVALUATION AND SUSTAINABILITY OF COUNTY FUNDED PROJECTS**

8. (a) Do you think monitoring and evaluation influence sustainability of County Funded Projects in Mbooni Sub-County (Tick one)?

   1. Yes ☐

   2. No ☐

   (b) Please indicate the extent to which you agree to the following factors on sustainability of County Funded Projects on a scale of 1-5 where: Strongly Agree = 5 Agree= 4 Neutral = Disagree = 2 Strongly disagree = 1

| **Factors** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Qualified& experienced M&E officers | | | | | |
| Efficient and effective M&E process | | | | | |
| Availability of resources | | | | | |
| Poor communication/ Lack of information | | | | | |
| Trainings on M&E | | | | | |

**SECTION D: STAFF COMPETENCE AND SUSTAINABILITY OF COUNTY FUNDED PROJECTS**

9. (a) Do you think staff competency influence sustainability of County Funded Projects in Mbooni Sub-County (Tick one)?

   1. Yes ☐

   2. No ☐

(b) Please indicate the extent to which you agree to the following factors on sustainability of County Funded Projects on a scale of 1-5 where: Strongly Agree = 5 Agree= 4 Neutral = Disagree = 2 Strongly disagree = 1

| **Factors** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Accuracy levels | | | | | |
| Lack of experience | | | | | |
| Lack of proper academic qualifications | | | | | |
| Demotivated staff | | | | | |
| Transparency & accountability | | | | | |

**SECTION E: AVAILABILITY OF RESOURCES AND SUSTAINABILITY OF COUNTY FUNDED PROJECTS**

**10.** (a) Do you think availability of resources influence sustainability of County Funded Projects in Mbooni Sub-County (Tick one)?

1. Yes ☐
2. No ☐

(b) Please indicate the extent to which you agree to the following factors on sustainability of County Funded Projects on a scale of 1-5 where: Strongly Agree = 5 Agree= 4 Neutral = Disagree = 2 Strongly disagree = 1

| **Factors** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Finances/funds | | | | | |
| Skilled personnel | | | | | |
| Availability of materials | | | | | |
| Transport means | | | | | |
| Improper use of resources | | | | | |

**MEASUREMENT OF THE DEPENDENT VARIABLE**

**a)** Please indicate the degree to which you agree to the following factors on sustainability of County Funded Projects on a scale of 1-5 where: Strongly Agree = 5 Agree= 4 Neutral = Disagree = 2 Strongly disagree = 1

| **Factors** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| Stakeholder participation has influenced sustainability of County Funded Projects in Mbooni Sub-County | | | | | |
| Monitoring and Evaluation has influenced sustainability of County Funded Projects in Mbooni Sub-County | | | | | |
| Staff Competence has influenced sustainability of County Funded Projects in Mbooni Sub-County | | | | | |
| Availability of resources has influenced sustainability of County Funded Projects in Mbooni Sub-County | | | | | |

## APPENDIX TWO: INTERVIEW GUIDE FOR DEPARTMENTAL HEADS AND CHIEF OFFICERS

Dear respondent, these interview questions are meant to collect information on a study that is being conducted in Mbooni Sub-County-Makueni County in partial fulfilment for my Masters of Arts in Project Planning and Management. Kindly answer the questions honestly.

1. Do you think stakeholders' participation influence sustainability of County Funded Projects?
2. Do you think monitoring and evaluation influence sustainability of County Funded Projects?
3. Do you think staff competence influence sustainability of County Funded Projects?
4. Do you think availability of resources influence sustainability of County Funded Projects?

Thank you for your time and cooperation.

**APPENDIX THREE: TABLE FOR DETERMINING SAMPLE SIZE FOR A FINITE POPULATION**

| *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

## APPENDIX FOUR: THE $X^2$ (CHI-SQUARE) DISTRIBUTION CHART

**Upper-tail critical values of chi-square distribution with *ν* degrees of freedom**

| | Probability less than the critical value | | | | |
|---|---|---|---|---|---|
| *ν* | 0.90 | 0.95 | 0.975 | 0.99 | 0.999 |
| 1 | 2.706 | 3.841 | 5.024 | 6.635 | 10.828 |
| 2 | 4.605 | 5.991 | 7.378 | 9.210 | 13.816 |
| 3 | 6.251 | 7.815 | 9.348 | 11.345 | 16.266 |
| 4 | 7.779 | 9.488 | 11.143 | 13.277 | 18.467 |
| 5 | 9.236 | 11.070 | 12.833 | 15.086 | 20.515 |
| 6 | 10.645 | 12.592 | 14.449 | 16.812 | 22.458 |
| 7 | 12.017 | 14.067 | 16.013 | 18.475 | 24.322 |
| 8 | 13.362 | 15.507 | 17.535 | 20.090 | 26.125 |
| 9 | 14.684 | 16.919 | 19.023 | 21.666 | 27.877 |
| 10 | 15.987 | 18.307 | 20.483 | 23.209 | 29.588 |
| 11 | 17.275 | 19.675 | 21.920 | 24.725 | 31.264 |
| 12 | 18.549 | 21.026 | 23.337 | 26.217 | 32.910 |
| 13 | 19.812 | 22.362 | 24.736 | 27.688 | 34.528 |
| 14 | 21.064 | 23.685 | 26.119 | 29.141 | 36.123 |
| 15 | 22.307 | 24.996 | 27.488 | 30.578 | 37.697 |
| 16 | 23.542 | 26.296 | 28.845 | 32.000 | 39.252 |
| 17 | 24.769 | 27.587 | 30.191 | 33.409 | 40.790 |
| 18 | 25.989 | 28.869 | 31.526 | 34.805 | 42.312 |
| 19 | 27.204 | 30.144 | 32.852 | 36.191 | 43.820 |
| 20 | 28.412 | 31.410 | 34.170 | 37.566 | 45.315 |
| 21 | 29.615 | 32.671 | 35.479 | 38.932 | 46.797 |
| 22 | 30.813 | 33.924 | 36.781 | 40.289 | 48.268 |
| 23 | 32.007 | 35.172 | 38.076 | 41.638 | 49.728 |
| 24 | 33.196 | 36.415 | 39.364 | 42.980 | 51.179 |

| | | | | | |
|---|---|---|---|---|---|
| 25 | 34.382 | 37.652 | 40.646 | 44.314 | 52.620 |
| 26 | 35.563 | 38.885 | 41.923 | 45.642 | 54.052 |
| 27 | 36.741 | 40.113 | 43.195 | 46.963 | 55.476 |
| 28 | 37.916 | 41.337 | 44.461 | 48.278 | 56.892 |
| 29 | 39.087 | 42.557 | 45.722 | 49.588 | 58.301 |
| 30 | 40.256 | 43.773 | 46.979 | 50.892 | 59.703 |
| 31 | 41.422 | 44.985 | 48.232 | 52.191 | 61.098 |
| 32 | 42.585 | 46.194 | 49.480 | 53.486 | 62.487 |
| 33 | 43.745 | 47.400 | 50.725 | 54.776 | 63.870 |
| 34 | 44.903 | 48.602 | 51.966 | 56.061 | 65.247 |
| 35 | 46.059 | 49.802 | 53.203 | 57.342 | 66.619 |
| 36 | 47.212 | 50.998 | 54.437 | 58.619 | 67.985 |
| 37 | 48.363 | 52.192 | 55.668 | 59.893 | 69.347 |
| 38 | 49.513 | 53.384 | 56.896 | 61.162 | 70.703 |
| 39 | 50.660 | 54.572 | 58.120 | 62.428 | 72.055 |
| 40 | 51.805 | 55.758 | 59.342 | 63.691 | 73.402 |
| 41 | 52.949 | 56.942 | 60.561 | 64.950 | 74.745 |
| 42 | 54.090 | 58.124 | 61.777 | 66.206 | 76.084 |
| 43 | 55.230 | 59.304 | 62.990 | 67.459 | 77.419 |
| 44 | 56.369 | 60.481 | 64.201 | 68.710 | 78.750 |
| 45 | 57.505 | 61.656 | 65.410 | 69.957 | 80.077 |
| 46 | 58.641 | 62.830 | 66.617 | 71.201 | 81.400 |
| 47 | 59.774 | 64.001 | 67.821 | 72.443 | 82.720 |
| 48 | 60.907 | 65.171 | 69.023 | 73.683 | 84.037 |
| 49 | 62.038 | 66.339 | 70.222 | 74.919 | 85.351 |
| 50 | 63.167 | 67.505 | 71.420 | 76.154 | 86.661 |