

**INFLUENCE OF COMMUNITY PARTICIPATION ON
SUSTAINABILITY OF COMMUNITY BASED PROJECTS: A
CASE OF KIAMBIU WATER AND SANITATION SLUM
PROJECT, NAIROBI COUNTY, KENYA**

BY

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**A Research Project Report Submitted in Partial Fulfilment of the
Requirements for the Award of the Degree of Master of Arts in Project
Planning and Management of University of Nairobi**

2016

DECLARATION

This research project report is my original work and has not been submitted for an academic award in any other university.

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DEDICATION

I dedicate this research project report to my parents Mr and Mrs Wanyera, my siblings Racheal, Godson and Emmanuel, my aunt Beatrice and my cousin David.

ACKNOWLEDGEMENT

My appreciation and gratitude goes to my supervisor, Ms. Mutunga, for the guidance and intellectual advice. I acknowledge colleagues and classmates whom I consulted in the course of preparing this report. I thank Kiambiu slum community and programme officers from Maji na Ufanisi for the support and information they provided for this study. Finally, I express my appreciation to the administration and management of the University of Nairobi for giving me the opportunity to pursue my master's degree at this prestigious institution of learning.

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ABBREVIATIONS AND ACRONYMS

ALNAP	Active Learning Network for Accountability and Performance in Humanitarian Action
CBO	Community Based Organization
CDD	Community Driven Development
IIED	International Institute for Environment and Development
IFAD	International Fund for Agricultural Development
KIWESA	Kiambiu Water and Sanitation Slum Project
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
TANGO	Technical Assistance to Non-Governmental Organizations
UN	United Nations

ABSTRACT

This study sought to investigate the influence of community participation on sustainability of community based projects. Kiambiu Water and Sanitation (KIWESA) Slum Project in Nairobi County, Kenya was chosen for the study. Relevant literature was reviewed on the topics of project sustainability and community participation, particularly community participation in need analysis, project planning, project implementation and project monitoring & evaluation, and how they influence sustainability of community based projects. The study employed descriptive survey research design. A population of 2,404 respondents constituting of 2,400 Kiambiu slum households and 4 programme officers from Maji na Ufanisi, the main NGO sponsoring KIWESA slum project was targeted for the study. A sample of 335 respondents was selected from the target population. The sample constituted 331 Kiambiu slum households and the 4 programme officers from Maji na Ufanisi. The 331 Kiambiu slum households were selected using systematic random sampling technique while the entire population of programme officers from Maji na Ufanisi was included in the study. Questionnaires were used to collect quantitative and qualitative data from the respondents. Reliability of the questionnaires were tested using the split-half method; a high reliability coefficient of 0.99 was obtained. Quantitative data collected was analyzed using Statistical Package for Social Sciences (SPSS) V21 while qualitative data was analyzed using content analysis. Results of the study were interpreted using descriptive statistics: frequency distribution, mean, standard deviation and percentages as well as inferential statistics: regression model and Pearson product-moment correlation coefficient. The regression model was used to predict how the independent variables that is, community participation in need analysis, project planning, project implementation and project monitoring and evaluation influence the dependent variable, sustainability of community based projects. Regression analysis established that there is a significant relationship between community participation and project sustainability: when community participation is zero, sustainability of community based projects is negatively influenced with a magnitude of -0.035. The various aspects of community participation influence sustainability of community based projects with different magnitudes. Community participation in need analysis has the greatest influence at 0.399, followed by community participation in project implementation at 0.390 and then by community participation in monitoring and evaluation at 0.201. Community participation in project planning has the least influence on sustainability of community based projects with a magnitude of 0.033. Correlation analysis established that there exists a strong positive correlation between the various aspects of community participation and sustainability of community based projects as shown by correlation coefficients all of which were above 0.5. The study concluded that community participation in community based projects has a significant influence on sustainability of the projects; sustainability is negatively influenced when community participation is zero and improves with greater community participation. Additionally, the strong positive correlation between community participation and sustainability indicates that an increase or decrease in sustainability significantly relates to an increase or decrease in community participation. The study recommends that: Development interventions targeting a community ought to ensure that the community participates in need analysis if the interventions are to be sustained; The community be trained on technical aspects of project planning to build their capacity, thereby improving project sustainability; Local resources, skills and knowledge should be used to implement local projects to keep the project relevant to the community and improve sustainability; The community should be involved in earlier stages of the project cycle leading up to monitoring and evaluation, otherwise their participation in monitoring and evaluation will have less meaning.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Project sustainability is one of the most critical aspects for all grassroots, national and international development agencies. Recent studies conducted by TANGO International (2008a, 2008b, 2008c and 2008d) have shown that while the trend with implementation of projects is showing significant improvement, the trend with post implementation sustainability is rather disappointing - increasingly, less projects are being sustained. The first review of project sustainability conducted by the World Bank's Operations Evaluation Department found that only nine out of twenty seven of the agriculture projects studied were classified as "sustained," eight more were "doubtful," and the remaining ten were "not sustained" (Bamberger and Cheema, 1990). Additionally, out of seventeen education projects covered by the same study and a later study by the World Bank, nine were classified as likely to be sustained, five were doubtful, and three were unlikely to be sustained. Khan (2000) notes that project sustainability is a major challenge in many developing countries. Large number of projects implemented at huge costs often tend to experience difficulties with sustainability. This means that huge expenditures are being incurred in implementing projects while communities are deprived of the benefits and return of these investments due to sustainability issues.

When thinking of project sustainability, three things must be born in mind; the community, project results and external assistance (Luvenga, Kirui, Oino, and Towett, 2015). A project is sustainable if the community/beneficiaries are capable on their own without the assistance of outside development partners, to continue producing results for their benefit for as long as their problem still exists (Luvenga et al., 2015). Major development organizations including multi-lateral agencies like the World Bank and the International Monetary Fund have arrived at a near consensus that projects cannot be sustainable and long-lasting unless community's participation is made central to the planning and management of projects, (Kumar, 2002). Community based approaches to development are among the fastest growing mechanisms for channeling development assistance and according to conservative calculations, the World Bank's lending for community driven development (CDD) projects has gone up from \$325 million in 1996, to \$2 billion in 2003, (Mansuri and Rao, 2003). This trend is supported by anecdotal and empirical evidence suggesting community participation is an unqualified good

in terms of project outcomes and sustainability (Narayan, 1995; Isham, Narayan, and Pritchett, 1996).

According to Nici and Wright (1997), most project failures originate from attempts to impose standard top-down programmes and projects on diverse local realities where they do not fit or meet the needs of the local people. The top-down approach believed that people were too ignorant and perhaps primitive to effectively discern and decide what was good and appropriate for them and as such were not expected to set up their own development priorities, rank them and identify the most felt need (Mulwa, 2008). Due to the top-down approach that had been adopted by most governments and development agencies in developing countries for most of the projects they had initiated for its communities, sustainability as a key component for ensuring that communities owned the programme, continued suffering as long as development specialists kept doing things for the people. The top-down methodological approach was responsible for the collapse of most community development projects such as dams, bridges, schools and even health facilities. Community participation in development projects is meant to correct the inadequacies of the top-down approach to community development, (Mulwa, 2004).

Development assistance is often offered on a temporary basis and projects typically have finite timeframes, yet the impacts of the assistance and projects are intended to be lasting. Assistance in most cases is for a period between five and ten years after which the beneficiaries are expected to continue the funding, maintenance and eventually sustaining the projects. Necessary machineries must therefore be put in place before the funding is over. The community must either put in place a community management organization to manage the project or contribute for the funding of the sustainability, (Olukotun, 2008).

1.1.1 Background of Kiambiu Water and Sanitation Slum Project

Kiambiu, sometimes spelled as Kiambio, is a slum in Kamukunji Constituency, Nairobi County, Kenya with an estimated population of 17,000 residents and 2,400 households, (Slum Dwellers International, 2011). Kiambiu is 4 kilometers east of the center of Nairobi and borders the Moi Air Base, Eastleigh Airport.

Safe water and adequate sanitation are in short supply in Kiambiu slum. The available water and sanitation services are provided to the community by private individuals at a fee. Most of

the latrines have been constructed on sewage pipes after the pipes have been drilled open or broken. Garbage is disposed in a nearby dumping site or into the Nairobi River, which passes outside the settlement. There are no drainage systems in the settlement for both domestic and rainwater, (Kairu, 2011).

Kiambiu Water and Sanitation (KIWESA) Slum Project was initiated in 1998 as a joint effort between the Kiambiu slum community and a local Non-Governmental Organization (NGO) called Maji na Ufanisi. Other partners in the project include Athi Water Services Board, private sector agencies such as Kenital Solar Ltd, development partners such as Sida, Cordaid, Christian Aid, Ford Foundation, and WaterCan. The project aims at improving the community's access to safe water and adequate sanitation facilities by investing in permanent sanitation blocks, stone lined drains and water kiosks, (Kairu, 2011).

1.2 Statement of the Problem

Project sustainability is a major challenge not only in Kenya, but also in many developing countries. Many development projects have not survived beyond the exit of donors despite huge amounts of money spent on implementation of the projects. Poor sustainability of projects therefore deprives beneficiaries returns expected from these investments, (Luvenga et al., 2015). Community participation in projects has been identified as one of the critical factors that influence sustainability of community based projects. Empirical literature is however divided on the influence of community participation on project sustainability. Some studies show that community participation leads to development projects that are more responsive to the needs of the poor, more responsive government and better delivery of public goods and services, better maintained community assets, and a more informed and involved citizenry (Mansuri and Rao, 2003). Other studies also show that greater community participation is associated with higher project outcomes and better services (Khwaja, 2003a). Oakley (1991a) however argues that participation is only a short-term exercise that is hardly likely to lead to the sustainability of development projects after the project is completed. According to Dudley (1993), participation in community projects is connected to power relations and politics within the community, thus, whenever a project tries to promote participation, it has to be ready to confront the political context and its consequences. As a result, the use of participation to drive community development projects can eventually give an opposite result. A study which investigates community participation in community based projects could therefore help in

better understanding how community participation in projects influences sustainability of the projects.

1.3 Purpose of the Study

The purpose of this study is to investigate influence of community participation on sustainability of community based projects: a case of Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.

1.4 Research Objectives

1. To examine how community participation in need analysis influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.
2. To establish how community participation in project planning influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.
3. To assess the extent to which community participation in project implementation influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.
4. To determine how community participation in project monitoring and evaluation influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.

1.5 Research Questions

1. To what extent does community participation in need analysis influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya?
2. To what extent does community participation in project planning influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya?
3. To what extent does community participation in project implementation influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya?
4. How does community participation in project monitoring and evaluation influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya?

1.6 Significance of the Study

This study is of significance to the community, donors, policy makers, researcher and the government. Findings from this study can be used by CBOs, implementing partners, donors, international NGOs and the government to address sustainability challenges, and in planning better ways of implementing sustainable community projects.

Lessons drawn from this study can be used to inform policy debates on participation-sustainability nexus as well as influence policies on community participation in development projects. These policies may be at the community, organizational or national level.

This study adds to literature on the subject of community participation and project sustainability in Kenya. Academic researchers, scholars and research organizations may find this study useful as it may provide them with information as well as assist in identifying gaps for further studies.

1.7 Limitations of the Study

The researcher encountered several households in Kiambiu slum that asked for money before giving information. To overcome this challenge, the researcher presented the introduction letter from the university as well as appealed to respondents for their understanding, explaining how the study could be of benefit to their community.

1.8 Delimitation of the Study

The study focused on the influence of community participation on sustainability of community water and sanitation project in Kiambiu slum, Nairobi County, Kenya. The key respondents were Kiambiu slum community and programme officers from the main sponsor NGO, Maji na Ufanisi.

1.9 Assumptions of the Study

The researcher assumed that respondents would be available and willing to answer questions and that the answers would be correct and truthful.

1.10 Definition of Significant Terms used in the Study

Community Participation: This is the involvement by the community in the creation, content and conduct of projects designed to change their lives. It is an active process by which

communities influence the direction and execution of a development project with a view to enhancing their well-being. Community participation requires recognition and use of local capacities and avoids the imposition of priorities from outside.

Monitoring and Evaluation: Monitoring is a continuing function that aims primarily to provide the management and main stakeholders of an ongoing project with early indications of progress, or lack thereof, in the achievement of results. Evaluation is the systematic and objective assessment of an on-going or completed project and its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, efficiency, effectiveness, impact, and sustainability.

Need Analysis: This is the process of identifying and evaluating needs of a community. Identification of needs is a process of describing problems of the target community and possible solutions to these problems. A need is a gap between “what is” and “what should be.”

Project Implementation: This refers to execution of activities designed at the planning stage. The plan is actualized and implemented by the community.

Project Planning: This is a communication process where people with different views and ideas share on how a desired situation should look like and how they are likely to get there and how to express these ideas together and reach a consensus.

Project Sustainability: This is the capacity of a project to maintain services and benefits to the community without detrimental effects even after special assistance such as financial, technical and managerial has been phased out. It is the probability that a project shall continue long after the outside support is withdrawn.

1.11 Organization of the Study

The study is organized into five chapters. Chapter One discusses background of the study and that of Kiambu Water and Sanitation Slum Project; the research objectives; research questions; significance of the study; delimitations; limitations; assumptions of the study as well definitions of significant terms. Chapter Two’s focus is on review of literature. In this chapter, the researcher reviewed relevant literature on the following topics and subtopics: Project sustainability; community participation in projects; community participation in need analysis,

project planning, project implementation and project monitoring and evaluation. This chapter also discusses the theoretical framework; the conceptual framework and the knowledge gap. Chapter Three discusses the research methodology that the researcher used to conduct the study. The chapter comprises of the research design; target population; sample size and sampling procedures; data collection instrument; data analysis techniques; ethical considerations and operational definitions of the variables. Chapter Four presents and gives an analysis of the data collected while Chapter Five gives a summary of findings, discussions, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature related to community participation and its influence on sustainability of community based projects. The chapter discusses the concept of project sustainability as well as that of community participation, with focus on community participation in need analysis, project planning, project implementation and project monitoring and evaluation and how they influence sustainability of community based projects. A framework for analyzing the linkages of the various forms of community participation to sustainability of community based projects is also discussed in the chapter. The chapter concludes by identifying key knowledge gaps.

2.2 Sustainability of Community Based Projects

There are many definitions of sustainability and even more interpretations of its meaning. International Fund for Agricultural Development (IFAD) Strategic Framework (2007j) defines project sustainability as the ability to ensure that the institutions supported through projects and the benefits realized are maintained and continue after the end of the project's external funding. Sustainability has also been defined as the ability of a development project to maintain or expand a flow of benefits at a specified level for a long period after project inputs have ceased, (Hodgkin, 1994). A project is sustainable if the community/beneficiaries are capable on their own without the assistance of outside development partners, to continue producing results for their benefit for as long as their problem still exists (Luvenga et al., 2015). Narayan (1993) describes project sustainability as the capacity to maintain services and benefits both at the community and institution levels without detrimental effects even after special assistance such as financial, technical, managerial has been phased out. It is the probability that a project shall continue long after the outside support is withdrawn.

It is critical to the success of community based projects that various elements of sustainability be considered throughout each stage of the project lifecycle. This is particularly true where outside involvement is discontinued after project closure, as is the case for many development projects, (Ostrom, 2010). A number of considerations have been identified as critical to achieving sustainability in community based projects. Luvenga et al. (2015) identify community participation, project results and external assistance as the most important

elements. According to Aras and Crowther (2008), there are four elements of sustainability which need to be recognized and analyzed. They include: Community Influence, which measures the impact a community makes upon the project in terms of the social contract and stakeholder influence; Environmental Impact, which is the impact of the project on its geophysics environment; Organizational Culture, which is the relationships between the project's internal stakeholders; and Finances, an adequate return for the level of risk undertaken in pursuit of sustainable development and financial sustainability. United Nations (UN) designates three pillars of sustainability: economic, social, and environmental (United Nations, 2002). McConville and Mihelcic (2007) further subdivide the social pillar into three components: socio-cultural respect, community participation, and political cohesion. This study focuses on community participation.

Participation is a concept that has been popularized in community development since the 1970s. The approach is as a result of recognition of failures of top-down approach to community development. The past several decades of development funding has demonstrated the failures of the top-down approach, (Nici and Wright, 1997). Khwaja (2004) attributes lack of community participation as a possible reason for these failures. In an evaluation of a World Bank project in the Philippines, it was found out that during a ten year period, the National Irrigation Administration shifted from a top down government approach to heavy reliance on the local farmers in the design, operation and maintenance of local irrigation systems. It was discovered that the canals and structures worked better, rice yields were 20% higher and the irrigated area was 35% greater than in control groups without participation (World Bank, 1991). Easterly (2006) contends that while a lot of money has been allocated to developing countries' projects, there is shockingly little growth to show for it. He argues that this occurs when bureaucratic interventions by governments, foreign agencies, or transnational conglomerates impose top-down solutions that fail to take into account both the needs and wishes of the bottom.

In an evaluation of community development projects funded by the Agha Khan Rural Support Programme in Northern Pakistan, Khwaja (2003a) found that community managed projects were better maintained than projects managed by the local government. Khwaja's (2003a) study suggests that since community managed projects are better maintained, they are also more sustainable than those managed by local governments. Narayan (1993) analyzed lessons from 121 rural water-supply projects funded by different agencies in 49 developing countries

in Africa, Asia and Latin America. He found that participation was the most significant factor contributing to project sustainability. Most of the projects referred to community participation or made it a specific project component. It was when people were involved in decision-making during all stages of the project, from design to maintenance that the best results occurred. If they were just involved in information sharing and consultations, then results were much poorer. According to Barasa and Jelagat (2013), unless people are central actors in activities and programmes that affect their lives, the impact of such interventions would either be negative, irrelevant or insignificant as far as transforming people's lives is concerned. When communities are involved in project initiation and implementation, there is the assurance of sustainability subject to some conditions unlike when they have no idea about the project or when it is imposed on them, (Musa, 2002). Analyzing the performance of water systems in six countries (Benin, Bolivia, Honduras, Indonesia, Pakistan, and Uganda), Katz and Sara (1997) found that community participation significantly increased sustainability and established a strong linkage between participation of the household members and sustainability of the projects.

Although participation is now widely endorsed as an essential component of achieving project sustainability, there is less consensus about what it means and how to achieve it. The way it is defined largely depends on the context and background in which participation is applied. International Institute for Environment and Development (IIED) examined over 200 purportedly "participatory" projects and found that, in practice, participation meant anything from passive "listening" only (the Project does the planning, the people do what the Project decides), through to communities defining their own objectives and implementing and monitoring the project themselves. Bass et al. (1995) define participation as a sharing in all the tasks ultimately affecting a group of people. The tasks include the strategic tasks of information gathering, analysis, decision-making, implementation, capacity-building, and monitoring and evaluation. Olukotun (2008) describes participation as a sort of partnership which is built upon the basis of dialogue among the various actors during which the agenda is jointly set and local views and indigenous knowledge are deliberately sought and respected. Barasa and Jelagat (2013) define participation as an active process by which beneficiaries or groups influence the direction and execution of a development project with a view to enhancing their well-being in terms of income, personal growth and self-reliance. Community members must own and control the process by making decisions as to its progress and design activities that will subsequently enable them achieve the desired goal. What gives real meaning to

popular participation is the collective effort by the people concerned to pool their resources to attain their objectives. In this regard, participation is viewed as an active process in which the participants take initiatives and actions that are stimulated by their own thinking and by deliberations over which they exert effective control, (Oakley, 1991). Participation occurs as a community organizes itself and takes responsibility for managing its problems. Taking responsibility includes identifying the problems, developing actions, putting them into place, and following through (Cheetham, 2002).

Community participation in projects has several benefits. According to Musa (2002), through participation, the community develops skills for collective action, maintenance and sustainability. Barasa and Jelagat (2013) argue that community participation allows people to build their capacities and identify and own the project, leading to efficiency and sustainability. Okafor (2005) observes that when communities participate in their own projects, the community becomes empowered, and there is greater efficiency, transparency, accountability, enhanced service delivery and generally better project outcomes. He further observes that community participation encourages donor harmonization and can kick start local private contractors and service providers. According to Mansuri and Rao (2004) community participation in projects leads to better designed projects, better targeted benefits, more cost effective projects, more equitable distribution of project benefits, less corruption, strengthens the capabilities of the citizenry to undertake self-initiated development activities, improves the match between what a community needs and what it obtains since the project will be more consistent with the preference of the community.

Although community participation in projects has several benefits that promote sustainability, it is important to recognize some of the challenges in the participatory approach that may threaten sustainability of community based projects. According to Mulwa (2004), some communities have little or no organizational and managerial skills; this is likely to lead to mismanagement and failure of the project. Participation does not take place in a vacuum but in a socio-political context, social obstacles such as the mentality of dependency, the culture of silence, domination of the local elite or gender inequality reduce people's participation in community projects therefore threatening sustainability of the projects, (Kumar, 2002). Participation in community projects is connected to power relations and politics within the community, thus, whenever a project tries to promote participation, it has to be ready to confront the political context and its consequences. As a result, the use of participation to drive

community development projects can eventually give an opposite result, (Dudley, 1993). Gender inequality in communities negatively influence participation of women in community projects. Bergdall (1993) recognizes the fact that women form the bulk of community labour force for community based projects but are often marginalized when it comes to access to information, decision making and access to opportunities for capacity building, this may threaten sustainability of the projects.

The need for a well-functioning state apparatus does not disappear with active community participation in projects, (Mansuri and Rao, 2004). Communities must lobby for continuing support for inputs and training so that they can sustain such projects. Support from the government can be in cash or in kind, for instance, after the completion of a project like a school or health centre, a community would normally need teaching and non-teaching staff and also health workers. The community may not be in a position to provide them except with government support.

2.3 Community Participation in Need Analysis and Sustainability of Community Based Projects

Need analysis is the process of identifying and evaluating needs in a community. A need is a gap between what is and what should be, (Witkin and Altschuld, 1995). A need has also been defined as a gap between real and ideal that is both acknowledged by community values and potentially amenable to change (Reviere et al., 1996). Need analysis focuses on the future, or what should be done, rather than on what was done as is the focus of most program evaluations, (Titcomb, 2000).

Need analysis begins with identification of needs or the realization that there is a need. Stakeholders identify and prioritize the core of the problems and their causes and effects (Regional Partnership for Resource Development, 2009). Community participation in need identification is important because once the community collectively conceives a problem and prioritizes it, they then move it to the stage of appreciating its extent and legitimize the process of solving it. If they do not participate in needs identification, even if the need is identified with the assistance of the outside world they will not legitimize it. This leads to poor sustainability since there is a greater chance of stalling at the implementation stage, (Barasa and Jelagat, 2013). There ought to be genuine demand by a community or groups within it for all projects whether aided or non-aided by the government or any development agency. This eliminates the

tendency to abandon the projects when they are half-way completed and sustains the interest of communities or groups within them in maintenance and protection of those projects, (Musa, 2002). Community's needs should be the primary purpose for any development planning and intervention, other developmental concerns should be secondary, (Barasa and Jelagat, 2013).

Once the problem has been identified, an evaluation or analysis of the problem is done. Stakeholders discuss the problem exhaustively before a consensus is built. Such a discussion is aimed at understanding the problem, how it affects the community and its extent. This shared understanding provides a solid foundation for finding ways of solving the problem. It also helps to clarify the scope of the problem at hand and the resource available. The community is also able to set the objectives, goals and how the intended development will proceed (Mulwa, 2008). If solutions to community issues are identified and rectified by community developed remedies, ones that better understand the delicate intricacies of local issues, success and sustainability of community based projects are much more likely, (Easterly, 2006).

Need analysis can be both a process and a method. As a process, it can build leadership, group unity, and a sense of local involvement in the community project. Some needs analysis techniques, including surveys and focus groups, provide participants an opportunity to express their opinions on community issues. As a method, a needs analysis is a tool that helps to move the mission of the development organization or government through decision making and implementing strategies. To be successful, need analysis must be comprehensive and require active planning and involvement from key players in the targeted community, (Titcomb, 2000).

2.4 Community Participation in Project Planning and Sustainability of Community Based Projects

After a consensus has been reached on the most appropriate interventions for a particular community problem, stakeholders can proceed with planning the interventions. Hague et al., (2003) defines participatory planning as a set of processes through which diverse groups and interests engage together in reaching a consensus on a plan and its implementation. Planning is a communication process where people with different views and ideas share on how a desired situation should look like and how they are likely to get there and how to express these ideas together and reach a consensus. Through communication people can achieve the commitment necessary to sustain the decision taken by them. Planning therefore implies control of the process, (Chikati, 2009). In the planning stage of a project cycle, the problem is discussed

further by focusing on project design and costing of activities, the budget, resource mobilization, implementation plan and schedule, expected completion date, and evaluation plan, (Barasa and Jelagat, 2013). Planning involves clearly formulating objectives of each intervention, describing how each intervention will meet the desired objectives, identifying the roles and responsibilities of the participants in the project, estimating which resources are needed, establishing a time frame and establish a monitoring and evaluation system, (Lefevre et al., 2000).

For effective and sustainable development to be realized, the community, which is the major beneficiary of the project, must participate through project implementation committees in, project planning and other aspects such as budgeting, resource identification, procurement and allocation of resources (Mulwa, 2008). A participatory planning process is one in which all the stakeholders are involved and is often the most effective and inclusive way to plan a community intervention. Experts are needed, but only as facilitators. Plans prepared by outside experts, irrespective of their technical soundness, cannot inspire the people to participate in their implementation, (Jain and Polman, 2003). A participatory process provides community ownership and support of the intervention as well as information about the community's history and politics, (Rabinowitz, 2015).

According to Hague et al., (2003), participatory planning can be initiated by any of the parties involved in the project and the forms it will take and the timetables are likely to be negotiated and agreed amongst participants. The process is rooted in the recognition that a community is pluralist and there are legitimate conflicts of interest that have to be addressed by the application of consensus building methods. Participatory planning is culturally aware and sensitive to differences in power, and seeks to ensure that these do not pre-determine outcomes and threaten sustainability of community projects. The different parties need to exchange information to explore areas of common ground and compromise and to find ways of reducing the extent and intensity of disagreements; this promotes sustainability of community projects.

Using survey data of water systems in Sri Lanka and India, Isham and Kahkonen (2002) found that involving household members in the design process and in the final decision about the type of system to build greatly improved sustainability of the projects as the projects were better maintained by the community. Hague et al., (2003) identify four ways in which community participation in planning influence project sustainability: That participatory planning carries

with it feelings of ownership, and builds a strong base for the intervention in the community. If people are integral to the planning of a community intervention, then that intervention will be theirs. They have a stake in it not only as its beneficiaries or staff or sponsors, but as its originators hence do what they can to see their work succeed; Participatory planning approach avoids pitfalls caused by ignorance of the realities of the community; Participatory planning involves important players from the outset. If the intervention needs the support of a particular individual, or that of a particular agency or group, and they have been part of the planning from the beginning, their cooperation is assured; Participatory planning ensures that the intervention will have more credibility in all segments of the community because it was planned by a group representing all segments of the community.

2.5 Community Participation in Project Implementation and Sustainability of Community Based Projects

Project implementation phase is the execution phase where visions and plans become reality. During the implementation process, all activities designed at the planning stage are actualized and implemented by the people, (Mulwa, 2008). The implementation phase involves putting the project plan into action. It is here that project resources are coordinated to meet objectives of the project plan. Stakeholders, project staff, the community, and other resources are engaged to achieve a successful outcome, (Barron and Barron, 2013).

Most aspects of participatory implementation process are planned during the design phase, in particular, the roles and responsibilities of each stakeholder, contributions of the various stakeholders, commitments made by the various stakeholders as well as implementation procedures including the work plan (ALNAP, 2009). Many participatory projects rest on the establishment of committees for the implementation phase, such as steering committees for overall management, or water committees, community health worker teams, etc. The presence of the community or their elected representatives on project steering committees or boards or other supervisory or decision-making bodies empowers the community to play an active role in project implementation, (African Development Bank, 2001). Technical training and assistance to build the community's capacity for organizational and technical responsibilities during project implementation also contribute to community's empowerment and improves chances for project sustainability once the technical and managerial assistance is withdrawn, (African Development Bank, 2001). Newman et al. (2002) reviewed 18 rural water projects in two regions in Bolivia and found that community-level training (for example, on cleaning water

tanks, repairing water tubes, and managing user fees) was critical for improving water quality, project maintenance and consequently project sustainability. ALNAP (2009) cautions that during project implementation, care should be taken not to impose forms of organization that are foreign to the local community as this can lead to lack of ownership, hinder the integration of committees in the community as well as threaten sustainability of the community project.

Community participation in project implementation influences sustainability in several ways: it helps keep the project relevant and adapted to a changing situation; it makes use of a wider range of resources, skills and expertise and acknowledges and supports local capacities and expertise. The community is able to contribute labour and/or materials as well as financial resources for the project, (ALNAP, 2009). Involvement of people in project implementation and the utilization of local resources generate a sense of ownership over the development interventions by the local people, (Kumar, 2002).

2.6 Community Participation in Project Monitoring & Evaluation and Sustainability of Community Based Projects

Monitoring and Evaluation (M&E) are important management tools used to track progress of a project and facilitate decision making, (Sera and Beaudry, 2007). United Nations Development Programme (2002) defines monitoring as a continuing function that aims primarily to provide the management and main stakeholders of an ongoing intervention with early indications of progress, or lack thereof, in the achievement of results. Shapiro (2002) defines monitoring as the systematic collection and analysis of information as a project progresses. Monitoring has also been described by International Federation of Red Cross and Red Crescent Societies (2011) as the routine collection and analysis of information to track progress against set plans and check compliance to established standards. Evaluation on the other hand has been defined as the systematic and objective assessment of an on-going or completed project, program, or policy, and its design, implementation and results, with the aim of determining the relevance and fulfilment of objectives, efficiency, effectiveness, impact and sustainability, (International Federation of Red Cross and Red Crescent Societies, 2011). Evaluation is the comparison of actual project impacts against the agreed strategic plans. It looks at what was set out to be done, what was accomplished, and how it was accomplished. It can be formative; taking place during the life of a project or organization, with the intention of improving the strategy or way of functioning of the project or organization. It can also be summative; drawing learnings from a completed project or an organization that is no longer

functioning, (Shapiro, 2002). According to Lefevre et al., (2000), the main purpose of an evaluation is to enable project participants to make decisions that will help the project reach the desired results rather than solely to assess the impact of an intervention or the lack of it.

A project that has evolved through participatory processes of identification, planning and implementation should of necessity be appraised in the same spirit with the key stakeholders maintaining a key role throughout the process, (Barasa and Jelagat, 2013). Participatory M&E is a process through which stakeholders at various levels engage in monitoring or evaluating a particular project, program or policy, share control over the content, the process and the results of M&E activity and engage in taking or identifying corrective actions, (Philip et al., 2008). Conventionally, M&E has involved outside experts coming in to measure performance against pre-set indicators, using standardized procedures and tools. In contrast, participatory M&E focuses on the active engagement of primary stakeholders, (World Bank, 2010a). Stakeholders and community's representatives therefore participate jointly in drawing up the terms of reference for M&E. The process ensures local ownership and commitment not only to the exercise and its outcome but more importantly, to the future of the programme evolution, (Barasa and Jelagat, 2013).

According to the World Bank (2010a), community participation in M&E is critical in project sustainability since: it offers new ways of assessing and learning from change that are more inclusive and more responsive to the needs and aspirations of those most directly affected; is geared towards not only measuring the effectiveness of a project, but also towards building ownership, empowering beneficiaries, building accountability and transparency and taking corrective actions to improve performance and outcomes. Participation in M&E has much less meaning if population members and local stakeholders have not been involved much earlier in the project cycle, (ALNAP, 2009).

2.7 Theoretical Framework

This study is anchored on empowerment theory by Perkins Douglas and Zimmerman Marc (1995). Empowerment involves enabling individuals and the community, through participation with others, to achieve their goals. Participation, control and awareness are essential parts of empowerment. Sustainable development is only likely if the idea of empowerment and its practical institutionalization in the law, the educational process and the machinery of government become a reality, (Titi and Singh, 2001).

Empowerment is a construct that links individual strengths and competencies, natural helping systems, and proactive behaviors to social policy and social change (Rappaport, 1981, 1984). Empowerment theory links individual well-being with the larger social and political environment. The various definitions of empowerment are generally consistent with empowerment as an intentional ongoing process centered in the local community, involving mutual respect, critical reflection, caring, and group participation. Cornell Empowerment Group (1989) define empowerment as a process through which people lacking an equal share of valued resources gain greater access to and control over those resources. It is a process by which people gain control over their lives, democratic participation in the life of their community (Rappaport, 1987) and a critical understanding of their environment (Zimmerman, Israel, Schulz, Checkoway, 1992).

Theories of empowerment include both processes and outcomes, suggesting that actions, activities, or structures may be empowering, and that the outcome of such processes result in a level of being empowered (Swift & Levin, 1987). Empowering processes for individuals might include participation in community organizations. At the organizational level, empowering processes might include collective decision making and shared leadership. Empowering processes at the community level might include collective action to access government and other community resources. Community-level empowerment outcomes might include evidence of pluralism, and existence of organizational coalitions, and accessible community resources. Empowerment suggests that participation with others to achieve goals, efforts to gain access to resources, and some critical understandings of the sociopolitical environment are basic components of the construct. At the community level, empowerment refers to collective action to improve the quality of life in a community and to the connections among community organizations.

2.8 Conceptual Framework

A conceptual framework is a visual presentation that explains the variables studied and the relationship among them, (Miles and Huberman, 1994). The conceptual framework as shown in figure 1 depicts the relationship between the independent variables (community participation in need analysis, in project planning, in project implementation and in project monitoring and evaluation), the moderating variable (community culture and attitude), the intervening variable (government policies) and the dependent variable (sustainability of community based projects).

Independent Variables

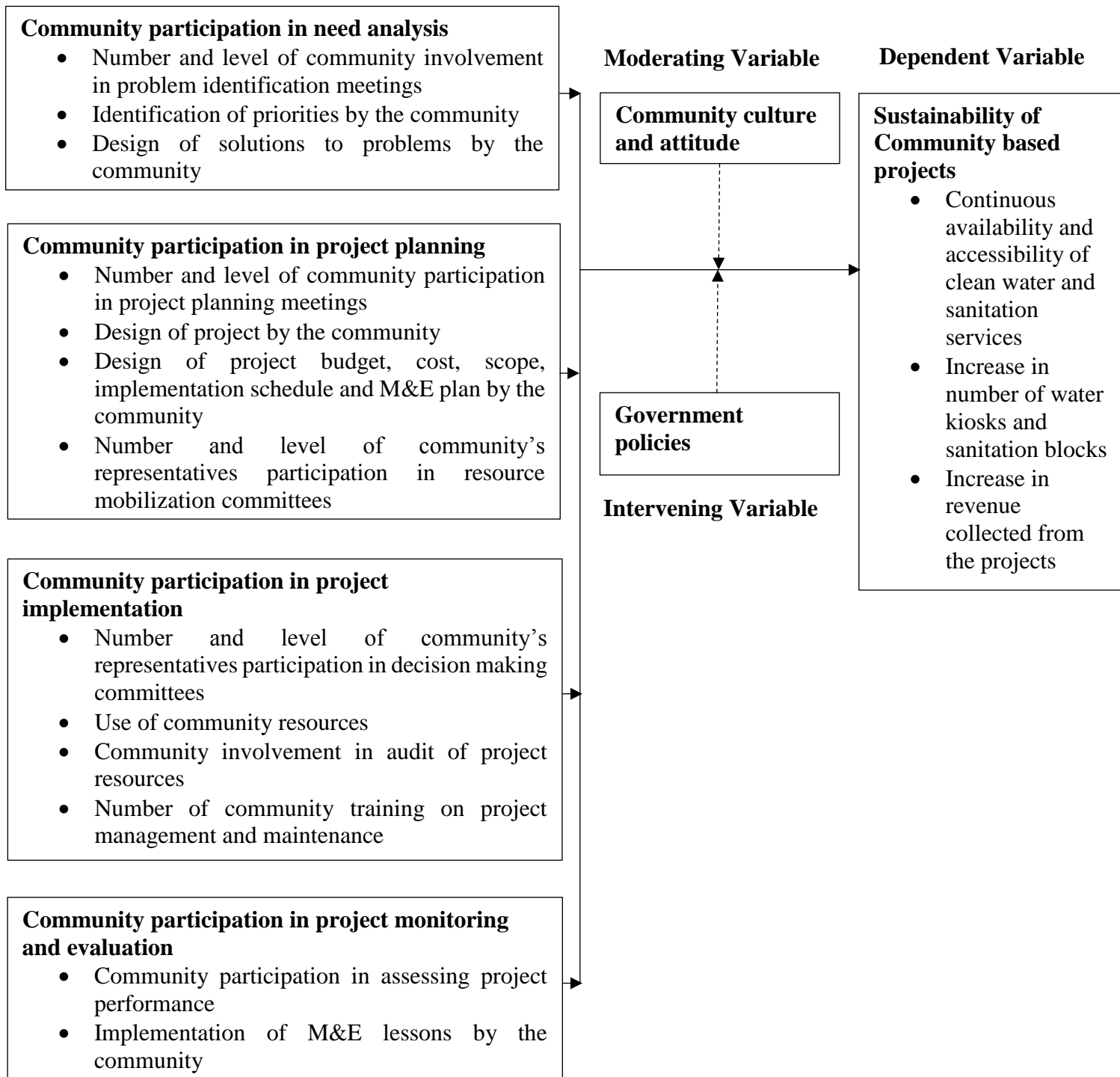


Figure 1: Conceptual Framework

2.9 Knowledge Gap

Table 2.1: Research Knowledge Gap Table

Variable	Author and The Year	Findings	Knowledge gap
Sustainability of community based projects	Khwaja (2003a)	Community managed projects are better maintained and are more sustainable than those managed by local governments.	The author does not track community participation throughout the project lifecycle and how community participation at each stage of the project life cycle influences sustainability of projects.
Community participation	Easterly (2006)	A lot of money has been allocated to developing countries' projects but there is shockingly little growth to show for it due to bureaucratic interventions by governments, foreign agencies, or transnational conglomerates that impose top-down solutions that fail to take into account both the needs and wishes of the bottom.	The author focuses on the failures of the top down approach in development and not on how community participation in development influences sustainability of projects
Community participation and sustainability of projects	Narayan (1993)	Participation is the most significant factor contributing to project sustainability and that best results occur when people are involved in decision-making during all stages of the project, from design to maintenance.	The author only identifies decision making as the activity that the community participates in order to achieve the best project results and sustainability.

2.10 Summary of the Chapter

This chapter presented a review of relevant literature on the concept of project sustainability and that of community participation in projects, and how community participation in need analysis, project planning, project implementation and project monitoring and evaluation influence sustainability of community based projects. On need analysis, various authors contend that community participation in need analysis legitimizes the process of solving community problems, provides a solid foundation for finding ways of solving the problems and reduces the chance of projects stalling at the implementation stage, (Barasa and Jelagat, 2013 and Mulwa, 2008). On planning, various authors agree that community participation in project planning creates a sense of ownership of the projects as well as commitment necessary to sustain decisions taken by community. The authors additionally agree that participation is the most effective and inclusive way to plan a community intervention that is sustainable, (Chikati, 2009; Hague et al., 2013; and Mulwa, 2008). On implementation, various authors contend that community participation in project implementation makes use of local resources, skills, knowledge, expertise and supports local capacities. This helps keep projects relevant to the community thereby promoting sustainability of the projects, (ALNAP, 2009; African Development Bank, 2001; and Kumar, 2002). On monitoring and evaluation, various authors suggest that community participation in M&E is critical for project sustainability as it offers the community a way to assess projects, learn and adopt changes that are more inclusive and responsive to needs and aspirations of the community and ensures local ownership of project outcome, (World Bank, 2010b and Barasa and Jelagat, 2013). Other authors on the other hand suggest that community participation in projects may have negative influence on sustainability of projects. This may be due to inadequate organizational and managerial skills by the community (Mulwa, 2004), socio-political dynamics within the community (Kumar, 2002) and gender inequality (Bergdall, 1993).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the way in which the research was undertaken and, among other things, identifies the methods used. It describes the research design, the target population, the sample size and sampling procedure, data collection instruments, pilot study, validity and reliability of data collection instruments, data analysis techniques as well as ethical considerations.

3.2 Research Design

Research design is a scheme, outline or plan used to generate answers to research problems, (Orodho, 2003). It aims at visualizing how the research will be undertaken, the type of data to be collected, how it will be collected and how much it will cost the researcher, thereby enabling the researcher to obtain relevant data from which he/she is able to draw conclusions, (Berg, 2001). This study adopted a descriptive survey design. Descriptive research determines and reports things as they are, therefore establishing the current status of the population under study (Mugenda & Mugenda, 2003). Information is collected without changing the environment, that is, nothing is manipulated. By studying a population sample, a descriptive design provides qualitative descriptions of trends, perceptions and attitudes of the population. According to Bryman and Bell, (2003) descriptive study is concerned with determining the relationship between variables. Descriptive survey design was therefore appropriate for this study since the study sought to determine the relationship between community participation in community based projects and sustainability of the projects without changing or manipulating the environment or variables, and, as per Zikmund (2003), survey provided a fast, inexpensive, efficient and accurate way of investigating the population.

3.3 Target Population

A population is an entire group of individuals, objects or items from which samples are taken for measurement (Kombo and Tromp, 2006). According to a 2011 report by Slum Dwellers International on Inventory of Slums in Nairobi, the number of households in Kiambiu slum stood at 2,400. This study therefore targeted the 2,400 Kiambiu slum households. The study also targeted programme officers from Maji na Ufanisi, the main NGO supporting KIWESA slum project. According to Maji na Ufanisi's human resource records, the organization has 4 programme officers. The study targeted the 3 KIWESA slum projects that were completed in

the past 5 years from the year of this study. The total target population for this study is shown in table 3.1

Table 3.1: Target Population

Category of Respondents	Frequency
Kiambiu slum households	2,400
Programme officers from Maji na Ufanisi	4
Total	2,404

This population was targeted due to proximity to the researcher, time available for research and budgetary constraints.

3.4 Sample Size and Sampling Procedure

Sampling is the process of selecting units from a population of interest (Trochim, 2005). It is the process of selecting a number of individuals for a study in such a way that individuals selected represent the larger group from which they are selected. The main purpose is to secure a representative group which will enable the researcher to gain information about their population, (Mugenda and Mugenda, 2003).

3.4.1 Sample Size

Sample size refers to the number of elements to be included in a study, (Malhotra, 2004). Using the Krejcie and Morgan (1970) table for determining sample size, a sample size of 331 Kiambiu slum households was drawn from the target population of 2,400 households. The entire population of programme officers from Maji na Ufanisi was included in the study since the population was small. Table 3.2 shows the total sample size.

Table 3.2: Sample Size

Category of Respondents	Frequency
Kiambiu slum households	331
Programme officers from Maji na Ufanisi	4
Total	335

3.4.2 Sampling Procedure

Systematic random sampling technique was used to select the 331 Kiambiu slum households. Every 7th household was selected to participate in the study. Only household heads, either male or female were selected to participate in the study. According to Bajpai (2010), the selection of a sample using systematic sampling technique is very convenient and is cost and time efficient. A census was conducted on the target population of programme officers from Maji na Ufanisi.

3.5 Data Collection Instruments

Questionnaires were used as data collection instruments in this study. A questionnaire is a set of questions to be answered by respondents without the personal aid of an investigator, (Gee, 1994). The questionnaires featured close and open ended questions. Close ended questions provided quantitative data for statistical analysis while open ended questions generated qualitative data that supported the quantitative data. The researcher administered two different questionnaires to the two different categories of respondents. The questionnaire's design was based on objectives of the research. The questionnaire administered to Kiambiu slum households was organized into 6 parts; the first part solicited demographic information from respondents, the second sought to establish sustainability of KIWESA slum project, the third, fourth, fifth and sixth part solicited information on the first, second, third and fourth objectives of the study respectively. The questionnaire administered to programme officers from Maji na Ufanisi was organized into 5 parts; the first part solicited demographic information from respondents, the second, third, fourth and fifth part solicited information on the first, second, third and fourth objectives of the study respectively. The researcher's preference for questionnaires as an instrument for data collection was based on observations by Owen (2002). Owen (2002) observed that questionnaires have the potential of reaching out to a large number

of respondents within a short time; they have the ability to accord respondents adequate time to respond and offer a sense of privacy and confidentiality to respondents. The researcher therefore opted for this instrument as a quick and cost effective way of collecting data.

3.5.1 Pilot Study

A pilot study involves administering research instruments to respondents who are not part of the target population. The purpose is to test reliability and validity of the research instruments (Mugenda and Mugenga, 2003). The pre-testing was carried out in Mathare slum in Nairobi County on a sample consisting of 10% of the respondents, that is, 33 respondents. The pilot study helped the researcher in testing whether the questions were clear, easy to understand, logical, exhaustive and the length of time it took to respond to the questions. Any questions found to be interpreted differently during the pre-testing were rephrased so that they could have the same meaning to all respondents. Views given by the respondents during pre-testing were analyzed and used to improve the questionnaires before actual collection of data. The refined questionnaires were tested for validity and reliability.

3.5.2 Validity of Data Collection Instruments

Validity defines the accuracy and meaningfulness of inferences drawn from study findings, (Mugenda and Mugenda, 2003). If the instrument is valid, the results obtained from the research will actually represent the study variables. Two types of validity were considered: content and construct validity. According to The College Board (2016), content validity addresses the match between test questions and the content or subject area they are intended to assess. Construct validity on the other hand measures the degree to which a test or other measure assesses the underlying theoretical construct it is supposed to measure, that is, is the test measuring what it is purported to measure? According to Borg and Gall (1999), validity of an instrument is improved through expert judgment; as such validity of the research instrument was determined with the help of the supervisor.

3.5.3 Reliability of Data Collection Instruments

Reliability is the measure of the degree to which a data collection instrument yields consistent results or data after repeated trials, (Mugenda and Mugenda, 2003). A reliable data collection instrument is one that produces consistent results when used more than once to collect data from a sample randomly selected from the sample population. The split-half method was used to test reliability of the research instruments by comparing the results of one half of a test with

the results from the other half. Responses from 33 respondents (10% of the sample) were used for the test. Reliability coefficient, Cronbach Alpha, was calculated and a measure of 0.99 obtained. A measure of 0.7 or higher is considered acceptable.

3.6 Data Analysis Techniques

Data collected was edited, coded, entered and checked for completeness and consistency. The Statistical Package for Social Sciences (SPSS) v21 was used to analyze quantitative data while content analysis was used to analyze qualitative data collected through questionnaires. The researcher used simple descriptive statistics (frequency distribution, mean, standard deviation and percentages) and inferential statistics analysis (Pearson Product-Moment Correlation Coefficient and regression model) to interpret results. The study sought to establish the correlation between variables using Pearson Product-Moment Correlation Coefficient. The Pearson product-moment correlation coefficient denoted as r , is a statistical measurement of the correlation (linear association) between two sets of values. Value of r close to +1 indicates a strong positive correlation and value of r close to -1 this indicates a strong negative correlation.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2}\sqrt{n(\sum y^2) - (\sum y)^2}}$$

Where: r is the Pearson product-moment correlation coefficient; x is values for the first set of variables; y is values for the second set of variables; n is selected number of respondents.

The regression model was applied to predict the dependent variable (sustainability of community based projects) when the independent variables (community participation in need analysis, project planning, project implementation and project M&E) change. The regression model is as shown below.

$Y_1 = a + b_1X_1 + \epsilon$: Sustainability of community based projects when community participation in need analysis changes

$Y_2 = a + b_2X_2 + \epsilon$: Sustainability of community based projects when community participation in project planning changes

$Y_3 = a + b_3X_3 + \epsilon$: Sustainability of community based projects when community participation in project implementation changes

$Y_4 = a + b_4X_4 + \epsilon$: Sustainability of community based projects when community participation in M&E changes

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \epsilon$: Sustainability of community based projects when community participation in need analysis, project planning, project implementation and participation in M&E change

Where: Y is sustainability of community based projects; a is the constant or the intercept of the regression line; b_1 , b_2 , b_3 and b_4 are regression coefficients for predictor variables; X_1 is community participation in need analysis; X_2 is community participation in project planning; X_3 is community participation in project implementation; X_4 is community participation in project monitoring and evaluation; ϵ is the error term

3.7 Ethical Considerations

This study observed four critical ethical norms that include amongst others: Confidentiality, which requires protection of confidential information from respondents; Consent, which requires voluntary participation of respondents in the study; Honesty, which requires honest reporting of data, results, methods and procedures, and the avoidance of fabrication, falsification, or misrepresentation of data; Respect for intellectual property, which requires proper acknowledgement or credit, through referencing and citations, for all contributions to research by other researchers. The researcher obtained an introduction letter from the university to show that the researcher is a bona fide student from the University of Nairobi.

3.8 Operational Definition of Variables

Table 3.3: Operational Definition of Variables

Objective	Variable	Measurement	Measurement Scale	Research Approach	Tools of Analysis
To examine how community participation in need analysis influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.	Community participation in need analysis	<ul style="list-style-type: none"> •Number and level of community involvement in problem identification meetings •Identification of priorities by the community •Design of solutions to problems by the community 	<ul style="list-style-type: none"> •Ordinal •Ordinal •Ordinal 	<ul style="list-style-type: none"> •Questionnaire •Questionnaire •Questionnaire 	<ul style="list-style-type: none"> •Frequency, mean and standard deviation •Frequency, mean and standard deviation •Frequency, mean and standard deviation
To establish how community participation in project planning influence sustainability of community based Kiambiu Water and Sanitation Slum Project, Nairobi County, Kenya.	Community participation in project planning	<ul style="list-style-type: none"> •Number and level of community participation in project planning meetings •Design of project by the community •Design of project budget, cost, scope, implementation schedule and M&E plan by the community •Number and level of community's representatives participation in resource mobilization committees 	<ul style="list-style-type: none"> •Ordinal •Ordinal •Ordinal •Ordinal 	<ul style="list-style-type: none"> •Questionnaire •Questionnaire •Questionnaire •Questionnaire 	<ul style="list-style-type: none"> •Frequency, mean and standard deviation •Frequency, mean and standard deviation •Frequency, mean and standard deviation •Frequency, mean and standard deviation

<p>To assess the extent to which community participation in project implementation influence sustainability of community based Kiambu Water and Sanitation Slum Project, Nairobi County, Kenya.</p>	<p>Community participation in project implementation</p>	<ul style="list-style-type: none"> •Number and level of community’s representatives participation in decision making committees •Use of community resources •Community involvement in audit of project resources •Number of community training on project management and maintenance 	<ul style="list-style-type: none"> •Ordinal •Ordinal •Ordinal •Ordinal 	<ul style="list-style-type: none"> •Questionnaire •Questionnaire •Questionnaire •Questionnaire 	<ul style="list-style-type: none"> •Frequency, mean and standard deviation •Frequency, mean and standard deviation •Frequency, mean and standard deviation •Frequency, mean and standard deviation
<p>To determine how community participation in monitoring and evaluation of projects influence sustainability of community based Kiambu Water and Sanitation Slum Project, Nairobi County, Kenya.</p>	<p>Community participation in project monitoring and evaluation</p>	<ul style="list-style-type: none"> •Community participation in assessing project performance •Implementation of M&E lessons by the community 	<ul style="list-style-type: none"> •Ordinal •Ordinal 	<ul style="list-style-type: none"> •Questionnaire •Questionnaire 	<ul style="list-style-type: none"> •Frequency, mean and standard deviation •Frequency, mean and standard deviation

	Dependent Variable	Measurement	Measurement Scale	Research Approach	Tools of Analysis
	Sustainability of Community based projects	<ul style="list-style-type: none"> •Continuous availability and accessibility of water and sanitation services •Increase in number of water kiosks and sanitation blocks •Increase in revenue collected from the projects 	<ul style="list-style-type: none"> •Ordinal •Ordinal •Ordinal 	<ul style="list-style-type: none"> •Questionnaire •Questionnaire •Questionnaire 	<ul style="list-style-type: none"> •Mean, standard deviation, correlation and regression analysis •Mean, standard deviation, correlation and regression analysis •Mean, standard deviation, correlation and regression analysis

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents results and discussions from the analysis of the responses received. Data was analyzed and summarized in line with the research objectives. The analysis begins with a description of the demographic profile of the respondents followed by analysis of data relating to each of the four research objectives.

4.2 Response Rate

The study targeted 335 respondents; 331 Kiambiu slum households and 4 programme officers from Maji na Ufanisi. Of the 335 questionnaires distributed, 239 were filled and returned; 235 from Kiambiu slum residents and 4 from programme officers from Maji na Ufanisi. This represents a response rate of 71.34% which is above the 50% statistical significance, according to Mugenda and Mugenda (2003).

4.3 Demographic Information of the Respondents

This section describes the demographic characteristics of respondents who participated in this study.

4.3.1 Gender of the Respondents

This section presents gender information of the respondents. The results are shown in table 4.1.

Table 4.1 Gender of the Respondents

Gender	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Male	176	74.89	3	75
Female	59	25.11	1	25
Total	235	100	4	100

The study involved both male and female respondents. As shown in table 4.1, majority of the respondents were male; 74.89% of the respondents from Kiambiu slum households and 75% of the respondents from Maji na Ufanisi. Females on the other hand constituted 25.11% of the respondents from Kiambiu slum households and 25% of the respondents from Maji na Ufanisi.

4.3.2 Age of the Respondents

The study sought to establish the age of the respondents. The findings are presented in table 4.2.

Table 4.2: Age of the Respondents

Age Bracket	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Below 24 years	27	11.49	0	0
25-29 years	60	25.53	1	25
30-34 years	75	31.92	2	50
35-39 years	35	14.89	1	0
40-44 years	23	9.79	0	25
Over 44 years	15	6.38	0	0
Total	235	100	4	100

As shown in table 4.2, 11.49% of the respondents from Kiambiu slum households were below 24 years, 25.53% between the ages of 25-29 years, 31.92% between the ages of 30-34 years, 14.89% between the ages of 35-39 years, 9.79% between the ages of 40-44 years while 6.38% were over 44 years. Of the respondents from Maji na Ufanisi, the majority, at 50% were between the ages of 30-34 while 25% were between the ages of 25-29 years and 40-44 years.

4.3.3 Education Level of the Respondents

The study sought to establish the education level of respondents. The findings are presented in table 4.3.

Table 4.3: Education Level of the Respondents

Education Level	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Certificate	157	66.81	0	0
Diploma	60	25.53	0	0
Undergraduate	18	7.66	4	100
Postgraduate	0	0	0	0
Other	0	0	0	0
Total	235	100	4	100

As shown in table 4.3, 66.81% of the respondents from Kiambiu slum households have Certificates as the highest level of their education. This is followed by Diploma holders at 25.53% and finally undergraduates at 7.66%. All the respondents (100%) from Maji na Ufanisi have undergraduate as their highest level of education.

4.3.4 Number of Years as Residents of Kiambiu Slum

The study sought to establish the number of years respondents from the community have lived in Kiambiu Slum. Results are shown in table 4.4.

Table 4.4: Number of Years as Residents of Kiambiu Slum

Number of Years as a Residents of Kiambiu Slum	Kiambiu Slum Households	
	Frequency	Percentage
Less than 4 Years	14	5.96
5-9 Years	53	22.55
10-14 Years	97	41.28
Over 14 Years	71	30.21
Total	235	100

As shown in table 4.4, 5.96% of the respondents have lived in Kiambiu Slum for less than 4 years, 22.55% between 5-9 years, 41.28% between 10-14 years while 30.21% have live in Kiambiu slum for over 14 years. The study focused on projects that were completed in the past 5 years from the year of the study and therefore respondents who have lived in the slum for at least five years are more knowledgeable about the projects, this constitutes 94.04% of the respondents.

4.3.5 Number of Years Worked Supporting KIWESA Slum Project

This section shows the number of years programme officers from Maji na Ufanisi have worked supporting KIWESA slum project. The findings are presented in table 4.5.

Table 4.5: Number of Years worked supporting KIWESA slum project

Number of Years worked supporting Kiambiu Water and Sanitation (KIWESA) slum project	Programme Officers from Maji na Ufanisi	
	Frequency	Percentage
Less than 4 Years	0	0
5-9 Years	4	100
10-14 Years	0	0
Over 14 Years	0	0
Total	4	100

As shown in table 4.5, all the programme officers from Maji na Ufanisi have worked for between 5-9 years supporting KIWESA slum project. The officers are therefore knowledgeable about projects completed in the past 5 years from the year of this study.

4.4 Sustainably of KIWESA Slum Project

The study sought to establish the extent to which respondents from Kiambiu slum households agree with the statements below on sustainability of KIWESA slum projects. The responses were based on a scale of 1-5 where 1 indicates strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The results are presented in table 4.6.

Table 4.6: Sustainability of KIWESA Slum Project

Statement	Mean	Standard Deviation
There is continuous availability and accessibility of clean water and sanitation services	4.56	0.81
The number of water kiosks and sanitation blocks have increased in the past five years	4.05	0.92
Revenue collected from the project has increased over the past five years	4.00	1.21

Responses to the statements had means ranging from 4.00 to 4.56 and standard deviations of between 0.81 and 1.21 as shown in table 4.6. This means that the respondents agreed with the statements, an indication that the community has been able to sustain the projects.

4.5 Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects

The study sought to establish the extent to which respondents agree with the statements below on community participation in need analysis and its influence on sustainability of community based projects. The responses were based on a scale of 1-5 where 1 indicates strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The results are presented in table 4.7, 4.8 and 4.9.

Table 4.7: Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects: Responses from Kiambiu Slum Households

Statement	Mean	Standard Deviation
Maji na Ufanisi involved Kiambiu slum community in discussions about problems facing the community and how to solve the problems	4.19	1.19
The community identified and prioritized their needs	4.37	1.15
The community identified the need for water and sanitation projects as their highest priority	4.43	1.07
The community's ideas and contributions were considered and incorporated when determining solutions to the water and sanitation needs	4.00	1.17

Responses to the statements had means ranging from 4.0 to 4.43 as shown in table 4.7. This implies that the respondents agreed with the statements. The respondents agreed to the statement that Maji na Ufanisi involved Kiambiu slum community in discussions about problems facing the community and how to solve the problems with a mean of 4.19 and a standard deviation of 1.19. The respondents agreed with the statement that the community identified and prioritized their needs with a mean of 4.37 and a standard deviation of 1.15. The respondent additionally agreed to the statement that the community identified the need for water and sanitation projects as their highest priority with a mean of 4.43 and a standard deviation of 1.07. As to whether the community's ideas and contributions were considered and incorporated when determining solutions to the water and sanitation needs, the respondents agreed with the statement with a mean of 4.00 and a standard deviation 1.17.

Table 4.8: Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects: Responses from Programme Officers from Maji na Ufanisi

Statement	Mean	Standard Deviation
Kiambiu slum community was involved in discussions about their problems and finding solutions to the problems	4.75	0.50
The community identified and prioritized their needs	4.50	0.58
The community's ideas were incorporated in the design of solutions to their water and sanitation needs	4.75	0.50

All the respondents agreed with the statements with means ranging from 4.50 to 4.75 as shown in table 4.8. The respondents agreed that Kiambiu slum community was involved in discussions about their problems and finding solutions to the problems and that the community's ideas were incorporated in the design of solutions to their water and sanitation needs with a mean of 4.75 and standard deviation of 0.50. As to whether the community identified and prioritized their needs, the respondents agreed with a mean of 4.50 and a standard deviation of 0.58. Respondents from Maji na Ufanisi were asked to describe how the community was mobilized to participate in need analysis. Majority of the respondents said, "The community was mobilized through Participatory Urban Appraisal workshops".

Table 4.9: Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects

Responses	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Very great extent	142	60.43	3	75
A Great extent	50	21.28	1	25
Moderate extent	12	5.11	0	0
Little extent	21	8.94	0	0
No extent	10	4.26	0	0
Total	235	100	4	100

When asked about the extent to which Kiambiu slum community's participation in need analysis influence sustainability of KIWESA slum project, 60.43% of Kiambiu slum households agreed to a very great extent, 21.28% agreed to a great extent, 5.11% agreed to a moderate extent, 8.94% agreed to a little extent while 4.26% agreed to no extent. 75% the respondents from Maji na Ufanisi agreed to a very great extent while 25% agreed to a great extent that the community's participation in need analysis influence sustainability of KIWESA slum project, as shown in table 4.9.

4.6 Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

The study sought to determine the extent to which respondents agree with the statements below on community participation in project planning and its influence on sustainability of community based projects. The responses were based on a scale of 1-5 where 1 indicates strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The results are presented in table 4.10, 4.11 and 4.12.

Table 4.10: Influence of Community Participation in Project Planning on Sustainability of Community Based Projects: Responses from Kiambiu Slum Households

Statement	Mean	Standard Deviation
The community participated in meetings for planning KIWESA slum project	4.50	0.97
The community's ideas and contributions were incorporated in the design of KIWESA slum project	4.29	1.09
The community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum	3.56	1.22
The community participated in coming up with the cost and budget for the project	3.10	1.55
The community mobilized resources (for example money, materials, labour, land etc.) towards realization of the project	2.61	1.50
The community was involved in coming up with a plan for implementing KIWESA slum project	3.23	1.42
The community was involved in coming up with a plan for measuring performance and impact of the projects (monitoring and evaluation plan).	2.39	1.18

Responses to the statements had means ranging from 2.39 to 4.50 as shown in table 4.10. The respondents agreed with the statement that the community participated in meetings for planning KIWESA slum project with a mean of 4.50 and a standard deviation of 0.97. As to whether the community's ideas and contributions were incorporated in the design of KIWESA slum project, the respondents also agreed to the statement with a mean of 4.29 and a standard deviation of 1.09. The respondents were neutral to the statement that the community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum with a mean of 3.56 and a standard deviation of 1.22. The respondents were also neutral to the statement that the community was involved in coming up with the cost and budget for the project with a mean of 3.10 and a standard deviation of 1.55. The respondents disagreed with the statement that the community mobilized resources towards realization of the project with a mean of 2.61 and standard deviation of 1.50. As to whether the community was involved in coming up with a plan for

implementing KIWESA slum project, the respondents were neutral to the statement with a mean of 3.23 and a standard deviation of 1.42. The respondents disagreed with the statement that the community was involved in coming up with a plan for measuring performance and impact of the projects with a mean of 2.39 and standard deviation of 1.18, as shown in table 4.10.

Table 4.11: Influence of Community Participation in Project Planning on Sustainability of Community Based Projects: Responses from Programme Officers from Maji na Ufanisi

Statement	Mean	Standard Deviation
The community participated in project planning meetings	4.75	0.50
Ideas of the community were incorporated in the project design	4.50	0.58
The community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum	3.75	0.96
The community participated in project costing and the budgeting process	3.50	0.58
The community mobilized resources for the project	2.75	0.50
The community participated in coming up with the implementation plan	3.50	0.58
The community participated in coming up with project monitoring and evaluation plan	3.25	0.96

Responses to the statements had means ranging from 2.75 to 4.75 as shown in table 4.11. Respondents from Maji na Ufanisi agreed with the statement that the community participated in project planning meetings with a mean of 4.75 and a standard deviation of 0.50. As to whether ideas of the community were incorporated in the project design, the respondents agreed with the statement with a mean of 4.50 and a standard deviation of 0.58. The respondents were neutral to the statement that the community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum with a mean of 3.75 and a standard deviation of 0.96. The respondents were also neutral to the statements that the community participated in project costing and the budgeting process and in coming up with the implementation plan with a mean of 3.50 and standard deviation of 0.58. As to whether the community participated in coming up with project monitoring and evaluation plan, the respondents were neutral to the statement with a mean of 3.25 and a standard deviation of 0.96. A possible reason for this is that the community has

limited skills in planning projects, 66.81% of the respondents from the community have Certificate as their highest level of education. As to whether the community mobilized resources for the project, the respondents disagreed to the statement with a mean of 2.75 and a standard deviation of 0.50. Respondents from Maji na Ufanisi were asked to indicate resources mobilized by the community. They said, “The community only provided labour for construction. Land was bought from landlords by our NGO.”

Table 4.12: Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

Responses	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Very great extent	79	33.62	1	25
A Great extent	53	22.55	3	75
Moderate extent	10	4.26	0	0
Little extent	63	26.81	0	0
No extent	30	12.77	0	0
Total	235	100	4	100

When asked about the extent to which Kiambiu slum community’s participation in project planning influence sustainability of KIWESA slum project, 32.62% of respondents from Kiambiu Slum Households agreed to a very great extent, 22.55% agreed to a great extent, 4.26% agreed to a moderate extent, 26.81% agreed to a little extent while 12.77% agreed. 25% of respondents from Maji na Ufanisi agreed to a very great extent while 75% agreed to a great extent that the community’s participation in project planning influence sustainability of KIWESA slum project, as shown in table 4.12.

4.7 Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

The study sought to determine the extent to which respondents agree with the statements below on community participation in project implementation and its influence on sustainability of community based projects. The responses were based on a scale of 1-5 where 1 indicates strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The results are presented in table 4.13, 4.14 and 4.15.

Table 4.13: Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects: Responses from Kiambiu Slum Households

Statement	Mean	Standard Deviation
The community participated in making decisions about the project	4.23	0.92
Resources from the community were used to put up the water kiosks, sanitation blocks and stone lined drains	3.54	1.32
The community is involved in monitoring the use of funds from the project	3.07	1.22
The community has received training on how to operate, manage and maintain the project	3.52	1.23

Responses to the statements had means ranging from 3.07 to 4.23 as shown in table 4.13. The respondents agreed with the statement that the community participated in making decisions about the project with a mean of 4.23 and a standard deviation of 0.92. The respondents were neutral to the statement that resources from the community were used to put up the water kiosks, sanitation blocks and stone lined drains with a mean of 3.54 and a standard deviation of 1.32. The respondents were neutral to the statement that the community is involved in monitoring the use of funds for and from the project with a mean of 3.07 and a standard deviation of 1.22. As to whether the community has received training on how to operate, manage and maintain the project, the respondents were neutral to the statement with a mean of 3.52 and a standard deviation of 1.23, as shown in table 4.13.

Table 4.14: Influence of Community Participation in Project Implementation on Sustainably of Community Based Projects: Responses from Programme Officers from Maji na Ufanisi

Statement	Mean	Standard Deviation
The community was represented in decision making committees	4.75	0.50
Community's resources was used in the implementation of the project	3.00	0.82
The community was involved in audit of project resources	3.75	0.50
The community has technical and management capacity to operate and maintain the project	4.50	0.58

Responses to the statements had means ranging from 3.00 to 4.75 as shown in table 4.14. Respondents from Maji na Ufanisi agreed to the statement that the community was represented in decision making committees with a mean of 4.75 and a standard deviation of 0.50. The respondents were neutral to the statement that the community's resources were used in the implementation of the project with a mean of 3.00 and standard deviation of 0.82. The respondents were also neutral to the statement that the community was involved in audit of project resources with a mean of 3.75 and a standard deviation of 0.50. As to whether the community has technical and management capacity to operate and maintain the project, the respondents agreed to the statement with a mean of 4.50 and a standard deviation of 0.58, as shown in table 4.14.

Respondents from Maji na Ufanisi were asked to indicate whether their organization offered any training to the community on how to operate, manage and maintain the project. All the respondents indicated that training had been offered to the community. When asked the kind of training offered, majority said, "We trained the community, especially the youth on how to maintain the project, on how to do book keeping, record keeping, report writing and how to assess how the project is performing."

Table 4.15: Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

Responses	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Very great extent	85	36.17	3	75
A Great extent	69	29.36	1	25
Moderate extent	20	8.51	0	0
Little extent	52	22.13	0	0
No extent	9	3.83	0	0
Total	235	100	4	100

When asked about the extent to which Kiambiu slum community's participation in project implementation influence sustainability of KIWESA slum project, 36.17% respondents from Kiambiu Slum Households agreed to a very great extent, 29.36% agreed to a great extent, 8.51% agreed to a moderate extent, 22.13% agreed to a little extent while 3.83% agreed to no extent. 75% of the respondents from Maji na Ufanisi strongly agreed to a very great extent while 25% agreed to a great extent that the community's participation in project implementation influence sustainability of KIWESA slum project, as shown in table 4.15.

4.8 Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects

The study sought to determine the extent to which respondents agree with the statements below on community participation in monitoring and evaluation and its influence on sustainability of community based projects. The responses were based on a scale of 1-5 where 1 indicates strongly disagree, 2 disagree, 3 neutral, 4 agree and 5 strongly agree. The results are presented in table 4.16, 4.17 and 4.18.

Table 4.16: Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects: Responses from Kiambiu Slum Households

Statement	Mean	Standard Deviation
The community participated in assessing project performance	3.80	1.32
Benefits from the project are enjoyed by most community members	4.00	1.15
Lessons learnt from assessing projects have been implemented	3.65	1.28

The respondents were neutral to the statement that the community participated in assessing project performance with a mean of 3.80 and a standard deviation of 1.32 as shown in table 4.16. The respondents agreed to the statement that benefits from the project are enjoyed by most community members with a mean of 4.00 and a standard deviation of 1.15. The respondents were also neutral to the statement that lessons learnt from assessing projects have been implemented with a mean of 3.65 and standard deviation of 1.28.

Table 4.17: Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects: Responses from Programme Officers from Maji na Ufanisi

Statement	Mean	Standard Deviation
The community participated in assessing project performance	3.75	0.50
The community has implemented lessons from M&E	3.25	0.96

The respondents were neutral to the statement that community participated in assessing project performance with a mean of 3.75 and a standard deviation of 0.50 as shown in table 4.17. The respondents were also neutral to the statement that the community has implemented lessons from M&E with a mean of 3.25 and a standard deviation of 0.96.

Table 4.18: Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects

Responses	Kiambiu Slum Households		Programme Officers from Maji na Ufanisi	
	Frequency	Percentage	Frequency	Percentage
Very great extent	156	66.38	3	75
A Great extent	59	25.11	1	25
Moderate extent	5	2.13	0	0
Little extent	8	3.40	0	0
No extent	7	2.98	0	0
Total	235	100	4	100

When asked about the extent to which Kiambiu slum community's participation in project monitoring and evaluation influence sustainability of KIWESA slum project, 66.38% of the respondents from Kiambiu Slum Households agreed to a very great extent, 25.11% agreed to a great extent, 2.13% agreed to a moderate extent, 3.40% agreed to a little extent while 2.98% agreed to no extent. 75% of the respondents from Maji na Ufanisi agreed to a very great extent while 25% agreed to a great extent that the community's participation in project monitoring and evaluation influence sustainability of KIWESA slum project, as shown in table 4.18.

4.9 Correlation Analysis

The study sought to establish the correlation between the variables using Pearson Product-Moment Correlation Coefficient. The Pearson Product-Moment Correlation Coefficient denoted as r , is given as : $-1 \leq r \leq +1$; where 0 to 0.29 indicates weak positive correlation; 0.3 to 0.49 indicates moderately positive correlation; and 0.5 to 1 indicates strong positive correlation. Conversely, 0 to -0.29 indicates weak negative correlation; -0.3 to -0.49 indicates moderately negative correlation; and -0.5 to -1 indicates strong negative correlation. Results of the study are shown in table 4.19.

Table 4.19: Correlation Analysis: Responses from Kiambiu Slum Households

		Community Participation in Need Analysis	Community Participation in Project Planning	Community Participation in Project Implementation	Community Participation in Project Monitoring and Evaluation	Sustainability of Community Based Projects
Community Participation in Need Analysis	Pearson	1	.865**	.856**	.913**	.945**
	Correlation Sig. (2-tailed)		.000	.000	.000	.000
	N	235	235	235	235	235
Community Participation in Project Planning	Pearson	.865**	1	.982**	.959**	.954**
	Correlation Sig. (2-tailed)	.000		.000	.000	.000
	N	235	235	235	235	235
Community Participation in Project Implementation	Pearson	.856**	.982**	1	.959**	.957**
	Correlation Sig. (2-tailed)	.000	.000		.000	.000
	N	235	235	235	235	235
Community Participation in Project Monitoring and Evaluation	Pearson	.913**	.959**	.959**	1	.971**
	Correlation Sig. (2-tailed)	.000	.000	.000		.000
	N	235	235	235	235	235
Sustainability of Community Based Projects	Pearson	.945**	.954**	.957**	.971**	1
	Correlation Sig. (2-tailed)	.000	.000	.000	.000	
	N	235	235	235	235	235

** Correlation is significant at the 0.01 level (2-tailed)

The results shown in table 4.19 shows that there is a strong positive correlation between all the variables since all the correlation coefficients are above 0.5. Correlation between all the variables is statistically significant since all the 2-tailed significance values are less than 0.01 at 99% level of confidence, this means that an increases or decreases in one variable does significantly relate to an increases or decreases in the second variable.

4.10 Regression Analysis

Multilinear regression analysis was carried out to determine the influence of independent variables (community participation in: need analysis; project planning; project implementation; and project monitoring and evaluation) on the dependent variable, sustainability of community based projects. The results are presented in table 4.20, 4.21 and 4.22

Table 4.20: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988a	.977	.976	.17534

a. Predictors: (Constant), Community participation in: need analysis; project planning; project implementation; and project monitoring and evaluation

R square defines the percentage of the dependent variable variation as explained by a given model. The model for this study indicates that 97.7% of the changes in sustainability of community based projects can be attributed to the independent/predictor variables. The implication is that 2.3% of the changes in the sustainability of community based projects can be attributed to other factors.

Table 4.21: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	297.919	4	74.480	2422.573	.000b
	Residual	7.071	230	.031		
	Total	304.990	234			

a. Dependent Variable: Sustainability of Community Based Projects

b. Predictors: (Constant), Community participation in: need analysis; project planning; project implementation; and project monitoring and evaluation

The probability of 0.000 indicates that the model is significant in predicting the influence of the community participation on project sustainability. The critical F-value is 3.622 at 99% level of confidence. Thus, with F calculated ($=2422.573$) > F critical ($=3.622$); the model is generally statistically significant.

Table 4.22: Regression Coefficients

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	-.035	.051		-.692	.490
	Community participation in need analysis	.408	.026	.399	15.913	.000
	Community participation in project planning	.032	.055	.033	.594	.553
	Community participation in project implementation	.398	.058	.390	6.869	.000
	Community participation in project monitoring and evaluation	.189	.044	.201	4.308	.000

a. Dependent Variable: Sustainability of Community Based Projects

The regression model derived from table 4.22 is as follows:

$Y = -0.035 + 0.399X_1 + 0.033X_2 + 0.390X_3 + 0.201X_4$, Where Y is sustainability of community based projects; X_1 is community participation in need analysis; X_2 is Community participation in project planning; X_3 is community participation in project implementation; and X_4 is Community participation in project monitoring and evaluation.

The regression model provided statistical control through which the study established the influence of each predictor variable. For this study, holding all variables at zero will result in a negative influence of -0.035 on sustainability of community based projects. A unit change in community participation in need analysis will result in 0.399 increments in sustainability of community based projects when all other independent variables are reduced to zero. Similarly, a unit change in community participation in project planning will result in 0.033 increments in sustainability of community based projects when all other independent variables are reduced to zero. A unit change in community participation in project implementation will result in 0.390 increments in sustainability of community based projects when all other independent variables are reduced to zero. Finally, a unit change in in community participation in project monitoring and evaluation will result in 0.201 increments in sustainability of community based projects when all other

independent variables are reduced to zero. The results also show that the coefficients for each independent variable are non-zero. This means that all the independent variables influence the dependent variable.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the research findings, conclusion of the research findings and draws recommendations based on the research findings. The discussions, conclusions and recommendations are based on the four objectives of the study. These were to investigate the influence of community participation in need analysis; project planning; project implementation and project monitoring and evaluation on sustainability of community based projects. The study was carried out in Kiambiu Slum in Nairobi County.

5.2 Summary of Findings

This section provides a summary of the findings based on the objectives of the study.

5.2.1 Influence of Community Participation in Need Analysis on Sustainability of Community Based projects

The study established that Kiambiu slum community participated in need analysis. Respondents from Maji na Ufanisi indicated that the community was mobilized and participated in need analysis through participatory urban appraisal workshops. This was echoed by respondents from Kiambiu slum households who agreed with a mean of 4.19 and a standard deviation of 1.19 that the community was involved and participated in discussions about problems facing the community and how to solve the problems. Additionally, the households agreed with a mean of 4.37 and a standard deviation of 1.15 that the community identified and prioritized their needs. Kiambiu households also agreed with a mean of 4.43 and a standard deviation of 1.07 that the community identified the need for water and sanitation projects as their highest priority. As to whether the community's ideas and contributions were considered and incorporated when determining solutions to their water and sanitation needs, respondents from Kiambiu households agreed with a mean of 4.00 and a standard deviation of 1.17. When asked about the extent to which they agree that the community's participation in need analysis influence sustainability of community based KIWESA project, 75% of the respondents from Maji na Ufanisi indicated that they agree to a very

great extent while 25% indicated that they agree to a great extent. Of the 235 respondents from Kiambiu slum households, 60.43% agreed to a very great extent, 21.28% agreed to a great extent, 5.11% agreed to a moderate extent, 8.94% agreed to a little extent and 4.26% agreed to no extent. The study also established that Kiambiu slum community participation in need analysis has a significant influence on sustainability of KIWESA slum project, as indicated by the regression model. A unit change in community participation in need analysis results in 0.399 increments in sustainability of the project when all other independent variables are reduced to zero. Sustainability of projects therefore improves when there is greater community participation in need analysis. Additionally, a strong positive correlation exists between community participation in need analysis and sustainability of projects as indicated by a correlation coefficient of 0.945.

5.2.2 Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

The study established that Kiambiu slum community participated in project planning but in varying extents to the various aspects of planning. There was less community participation in the technical aspects of planning such as coming up with project cost and budget, implementation plan, monitoring and evaluation plan and resource mobilization with means ranging from 2.39 to 3.10. A possible explanation for this is limited project planning knowledge possessed by the community as indicated by the education level of the respondents from Kiambiu slum households; a majority (66.81%) have certificate as their highest level of education. Respondents from Kiambiu slum households and Maji na Ufanisi agreed with means of 4.29 and 4.50 and standard deviations of 1.09 and 0.58 respectively that community's ideas and contributions were incorporated in the design of KIWESA slum project. As to whether the community agreed on the proposed location of the various water kiosks and sanitation blocks within Kiambiu slum, respondents from Kiambiu slum households and Maji na Ufanisi were neutral with means of 3.56 and 3.75 and standard deviations of 1.22 and 0.96 respectively. When asked about the extent to which they agree that the community's participation in project planning influence sustainability of community based KIWESA slum project, 25% of the respondents from Maji na Ufanisi indicated that they agree to a very great extent while 75% indicated that they agree to a great extent. Of the 235 respondents from Kiambiu slum households, 33.62% agreed to a very great extent, 22.55% agreed to a great extent, 4.26% agreed to a moderate extent, 26.81% agreed to a little extent and 12.77% agreed to

no extent. The study also established that Kiambiu slum community participation in project planning has a significant influence on sustainability of KIWESA slum project, as indicated by the regression model. A unit change in community participation in project planning results in 0.033 increments in sustainability of the project when all other independent variables are reduced to zero. Sustainability of projects therefore improves when there is greater community participation in project planning. Additionally, a strong positive correlation exists between community participation in project planning and sustainability of projects as indicated by a correlation coefficient of 0.954.

5.2.3 Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

The study established that Kiambiu slum community participated in project implementation. Respondents from Kiambiu slum households and Maji na Ufanisi indicated that the community participated in making decisions about the project with means of 4.23 and 4.75 and standard deviations of 0.92 and 0.50 respectively. Labour from the community was used to construct the water kiosks, sanitation blocks and stone lined drains. Maji na Ufanisi provided training to the community. The training offered included project maintenance, book keeping, record keeping, report writing and monitoring and evaluation. Respondents from Kiambiu slum households and Maji na Ufanisi were neutral with means of 3.07 and 3.75 and standard deviations of 1.22 and 0.50 respectively as to whether the community was involved in the monitoring of the use of funds from the project. When asked about the extent to which they agree that the community's participation in project implementation influence sustainability of community based KIWESA slum project, 75% of the respondents from Maji na Ufanisi indicated that they agree to a very great extent, while 25% indicated that they agree to a great extent. Of the 235 respondents from Kiambiu slum households, 36.17% agreed to a very great extent, 29.36% agreed to a great extent, 8.51% agreed to a moderate extent, 22.13% to a little extent and 3.83%. The study also established that Kiambiu slum community participation in project implementation has a significant influence on sustainability of KIWESA slum project, as indicated by the regression model. A unit change in community participation in project implementation results in 0.390 increments in sustainability of the project when all other independent variables are reduced to zero. Sustainability of projects therefore improves when there is greater community participation in project implementation.

Additionally, a strong positive correlation exists between community participation in project implementation and sustainability of projects as indicated by a correlation coefficient of 0.957.

5.2.4 Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects

Respondents from Kiambiu slum households and Maji na Ufanisi were neutral to the statement that the Kiambiu slum community participated in assessing project performance with means of 3.80 and 3.75 and standard deviations of 1.32 and 0.50 respectively. The respondents were also neutral to the statement that lessons learnt from assessing projects have been implemented with a mean and a standard deviation of 3.65 and 1.28 from Kiambiu slum household respondents and a mean and a standard deviation of 3.25 and 0.96 from Maji na Ufanisi respondents. Most respondents from Kiambiu slum households agreed that benefits from the project are enjoyed by most community members with a mean of 4.00 and a standard deviation of 1.15. When asked about the extent to which they agree that the community's participation in project monitoring and evaluation influence sustainability of community based KIWESA slum project, 75% of the respondents from Maji na Ufanisi indicated that they agreed to a very great extent, while 25% indicated that they agreed to a great extent. Of the 235 respondents from Kiambiu slum households, 66.38% agreed to a very great extent, 25.11% agreed to great extent, 2.13% agreed to a moderate extent, 3.40% agreed to a little extent and 2.98% agreed to no extent. The study also established that Kiambiu slum community participation in project monitoring and evaluation has a significant influence on sustainability of KIWESA slum project, as indicated by the regression model. A unit change in community participation in project monitoring and evaluation results in 0.201 increments in sustainability of the project when all other independent variables are reduced to zero. Sustainability of projects therefore improves when there is greater community participation in project monitoring and evaluation. Additionally, a strong positive correlation exists between community participation in project monitoring and evaluation and sustainability of projects as indicated by a correlation coefficient of 0.971.

5.3 Discussion Key of Findings

This section of the report discusses findings of the study and makes a comparison to the literature reviewed in chapter two.

5.3.1 Influence of Community Participation in Need Analysis on Sustainability of Community Based projects

The study established that Kiambiu slum community participated in need analysis through participatory urban appraisal workshops and came to a consensus that their most urgent need was access to clean water and sanitation facilities. The study also established that community participation in need analysis has a significant influence on sustainability; sustainability of community projects improves when there is greater community participation in need analysis. These findings affirm the findings of Musa (2002), Barasa and Jelagat (2013) and Mulwa (2008) that community participation in need analysis improves sustainability of community based projects. According to Musa (2002), there ought to be genuine demand by a community for all projects as this eliminates the tendency to abandon the projects when they are half-way completed and sustains the interest of communities or groups within them in maintenance and protection of those projects. Barasa and Jelagat (2013) argue that if the community does not participate in need identification, even if the need is identified with the assistance of the outside world, they will not legitimize it leading to a greater chance of the project stalling at the implementation stage. According to Mulwa (2008), community participation in need evaluation provides a solid foundation for finding ways of solving the problem, helps to clarify the scope of the problem at hand and the resources available and enables the community to set the objectives, goals and how the intended development will proceed.

5.3.2 Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

The study established that the community participated in planning KIWESA slum project with the guidance of programme officers from Maji na Ufanisi. The study also established that the community had minimal planning skills such as coming up with project cost and budget, implementation plan, monitoring and evaluation plan and resource mobilization. These findings agree with observations by Mulwa (2004) that some communities have little or no organizational and managerial skills, likely leading to mismanagement and failure of the project. The study further established that community participation in project planning has a significant influence on sustainability; sustainability of community projects improves when there is greater community participation in project planning. These findings therefore affirm findings by Mulwa (2008), Jain

and Polman (2003), and Hague et al., (2003). Mulwa (2008) contends that for effective and sustainable development to be realized, the community, which is the major beneficiary of the project, must participate through project implementation committees in, project planning and other aspects such as budgeting, resource identification, procurement and allocation of resources. According to Jain and Polman (2003), experts are needed, but only as facilitators. Plans prepared by outside experts, irrespective of their technical soundness, cannot inspire the people to participate in their implementation. According to Hague et al., (2003), if people are integral to the planning of a community intervention, then that intervention will be theirs. They have a stake in it not only as its beneficiaries, but as its originators hence do what they can to see their work succeed.

5.3.3 Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

The study established that the community participated in making decisions about the project throughout the implementation phase and that the community was involved in the construction of the project. The study also established that the community received training on how to manage and maintain the project and that the community's participation in project implementation has a significant influence on sustainability; sustainability of community projects improves when there is greater community participation in project implementation. These findings affirm findings by African Development Bank (2001) and Kumar (2002). According to the African Development Bank (2001), the presence of the community or their elected representatives on project steering committees or boards or other supervisory or decision-making bodies empowers the community to play an active role in project implementation. African Development Bank (2001) additionally contend that technical training and assistance to build the community's capacity for organizational and technical responsibilities during project implementation contribute to community's empowerment and improves chances for project sustainability once the technical and managerial assistance is withdrawn. According to Kumar (2002), involvement of people in project implementation and the utilization of local resources generate a sense of ownership over the development interventions by the local people, thereby promoting sustainability of the project.

5.3.4 Influence of Community Participation in Project Monitoring and Evaluation on Sustainability of Community Based Projects

The study established that Kiambiu slum community participated in project monitoring and evaluation and that lessons from M&E have been implemented. The study additionally established that community participation in project monitoring and evaluation has a significant influence on sustainability; sustainability of community projects improves when there is greater community participation in project monitoring and evaluation. Findings of this study therefore affirm findings by World Bank (2010a). According to World Bank (2010a), community participation in M&E is critical in project sustainability since it offers new ways of assessing and learning from change that are more inclusive and more responsive to the needs and aspirations of those most directly affected.

5.4 Conclusion

The purpose of this study was to investigate the influence of community participation on sustainability of community based projects. Results of the study indicate that there is a strong positive correlation between community participation and sustainability of community based projects; an increase in community participation leads to an increase in sustainability of community based projects. Similarly, a decrease in community participation leads to a decrease in sustainability of community based projects. The study also established that there is a significant relationship between community participation and sustainability of community based projects; when community participation is zero, sustainability of community based projects is negatively influenced. The study also established that the various aspects of community participation influence sustainability of community based projects with different magnitudes as shown by the regression analysis. Community participation in need analysis has the greatest influence, followed by community participation in project implementation and then by community participation in monitoring and evaluation. Community participation in project planning has the least influence on sustainability of community based projects. Overall, sustainability of community based projects improves with greater community participation throughout the project cycle.

5.5 Recommendations

1. The study has shown that community participation in need analysis has the greatest influence on sustainability of community based projects, any development interventions targeting a community ought therefore to ensure that the community participates in need analysis if the intervention is to be sustained.
2. Government, NGOs or any other development partners that support community based projects should build the capacity of the community so that they can effectively participate in project planning. The community can be trained on aspects of project planning such as coming up with project design, project costing and budgeting, resource mobilization, drawing up implementation, monitoring and evaluation plans amongst others.
3. Local resources, skills, expertise and knowledge should be used to implement community based projects as this keeps the project relevant to the community and improves sustainability of the projects.
4. The community should be involved in the earlier stages of the project cycle leading up to monitoring and evaluation, otherwise their participation in monitoring and evaluation will have less meaning.

5.6 Suggestions for Further Studies

1. A similar study should be done in other urban areas in different counties for comparison purposes and to allow for generalization of findings.
2. A study should be done in rural areas of the country to establish whether participation of the rural communities influence sustainability of community based projects differently from participation of the urban communities.

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APPENDICES

APPENDIX 1: LETTER OF TRANSMITTAL

Leah A. Wanyera,

P.O Box 48413 - 00100,

Nairobi.

Dear Respondent,

RE: ACADEMIC RESEARCH

I am a student at the University of Nairobi. I am currently undertaking a research study to fulfil the requirements for the award of the degree of Master of Arts in Project Planning and Management on the “The Influence of Community Participation on Sustainability of Community Based Projects.” I have chosen to study Kiambiu Water and Sanitation Slum (KIWESA) Project in Nairobi County to provide information relating to sustainability of community based projects.

I humbly request that you to fill the attached questionnaire. Kindly answer all questions as completely, correctly and honestly as possible. Your response will be treated with utmost confidentiality and will only be used for academic purposes.

Thank you in advance for your co-operation.

Yours sincerely,

Leah A. Wanyera.

**APPENDIX 2: QUESTIONNAIRE ADMINISTERED TO KIAMBIU SLUM
COMMUNITY**

Instructions

Please complete this questionnaire as honestly as possible. Tick your options in the appropriate box. The responses you give will be treated with utmost confidentiality.

Part A: Respondents Profile

1. Gender Male Female

2. Age

Below 24 years 25-29 Years 30-34 years

35-39 Years 40-44 Years Over 44 Years

3. What is your education level (state the highest level)?

Certificate Diploma Undergraduate

Postgraduate Other (Specify) _____

4. How many years have you been a resident of Kiambiu Slum?

Less than 4 years 5-9 years 10-14 years

Over 14 years

Part B: Sustainably of KIWESA slum project

5. Below are statements on KIWESA slum project. Please indicate the degree to which you agree with the statements using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
There is continuous availability and accessibility of clean water and sanitation services					
The number of water kiosks and sanitation blocks have increased in the past five years					
Revenue collected from the project has increased over the past five years					

Part C: Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects

6. Below are statements on participation of your community in the process of identification and finding solutions to your needs/problems. Please indicate the degree to which you agree with the statements using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
Maji na Ufanisi involved Kiambiu slum community in discussions about problems facing the community and how to solve the problems					
The community identified and prioritized their needs					
The community identified the need for water and sanitation projects as their highest priority					
The community's ideas and contributions were considered and incorporated when determining solutions to the water and sanitation needs					

7. In your opinion, to what extent does participation of Kiambiu slum community in need analysis influence sustainability of KIWESA slum project?

Very great extent Great extent Moderate extent

Little extent No extent

Part D: Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

8. The following activities relate to planning of community projects. Please indicate your level of agreement with the statements in relation to KIWESA slum project, using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community participated in meetings for planning KIWESA slum project					
The community's ideas and contributions were incorporated in the design of KIWESA slum project					
The community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum					
The community participated in coming up with the cost and budget for the project					
The community mobilized resources (for example money, materials, labour, land etc.) towards realization of the project					
The community was involved in coming up with a plan for implementing KIWESA slum project					
The community was involved in coming up with a plan for measuring performance and impact of the project (monitoring and evaluation plan).					

9. In your opinion, to what extent does participation of Kiambiu slum community in planning KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

Part E: Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

10. Below are statements on participation of your community in the implementation of KIWESA slum project. Please indicate the degree to which you agree with the statements using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community participated in making decisions about the project					
Resources from the community were used to put up the water kiosks, sanitation blocks and stone lined drains					
The community is involved in monitoring the use of funds from the project					
The community has received training on how to operate, manage and maintain the project					

11. In your opinion, to what extent does participation of Kiambiu slum community in implementation of KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

Part F: Influence of Community Participation in Project Monitoring and Evaluation on Sustainably of Community Based Projects

12. Please indicate your level of agreement with the following statements about your community's participation in monitoring and evaluation of KIWESA slum project. Please use the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community participated in assessing project performance					
Benefits from the project are enjoyed by most community members					
Lessons learnt from assessing projects have been implemented					

13. In your opinion, to what extent does participation of Kiambiu slum community in monitoring and evaluation of KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

**APPENDIX 3: QUESTIONNAIRE ADMINISTERED TO PROGRAMME OFFICERS
FROM MAJI NA UFANISI**

Instructions

Please complete this questionnaire as honestly and objectively as possible. Tick your options in the appropriate box and fill in the blank spaces provided for questions where elaborate answers are required. Please use the space at the back of this questionnaire if you need more space for your responses. The responses you give will be treated with utmost confidentiality.

Part A: Respondents Profile

1. Gender Male Female

2. Age

Below 24 years	<input type="checkbox"/>	25-29 Years	<input type="checkbox"/>	30-34 years	<input type="checkbox"/>
35-39 Years	<input type="checkbox"/>	40-44 Years	<input type="checkbox"/>	Over 44 Years	<input type="checkbox"/>

3. What is your education level (state the highest level)?

Certificate	<input type="checkbox"/>	Diploma	<input type="checkbox"/>	Undergraduate	<input type="checkbox"/>
Postgraduate	<input type="checkbox"/>	Other (Specify)	_____		

4. How many years have you worked supporting Kiambu Water and Sanitation (KIWESA) slum project?

Less than 4 years	<input type="checkbox"/>	5-9 years	<input type="checkbox"/>	10-14 years	<input type="checkbox"/>
Over 14 years	<input type="checkbox"/>				

Part B: Influence of Community Participation in Need Analysis on Sustainability of Community Based Projects

5. Below are statements on participation of Kiambiu slum community in need analysis. Please indicate the degree to which you agree with the statements using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
Kiambiu slum community was involved in discussions about their problems and finding solutions to the problems					
The community identified and prioritized their needs					
The community's ideas were incorporated in the design of solutions to their water and sanitation needs					

6. If the community was involved in need analysis, how was the community mobilized?

7. In your opinion, to what extent does participation of Kiambiu slum community in need analysis influence sustainability of KIWESA slum project?

Very great extent Great extent Moderate extent

Little extent No extent

Part C: Influence of Community Participation in Project Planning on Sustainability of Community Based Projects

8. The following activities relate to planning of community projects. Please indicate your level of agreement with the statements in relation to KIWESA slum project, using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community participated in project planning meetings					
Ideas of the community were incorporated in the project design					

The community agreed on the proposed location of the various water kiosks and sanitation blocks within the Kiambiu slum					
The community participated in project costing and the budgeting process					
The community mobilized resources for the project					
The community participated in coming up with the implementation plan					
The community participated in coming up with project monitoring and evaluation plan					

9. What resources were mobilized by the community towards realization of the project?

10. In your opinion, to what extent does participation of Kiambiu slum community in planning KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

Part D: Influence of Community Participation in Project Implementation on Sustainability of Community Based Projects

11. Below are statements on participation of Kiambiu slum community in the implementation of KIWESA slum project. Please indicate the degree to which you agree with the statements, using the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community was represented in decision making committees					
Community's resources was used in the implementation of the project					
The community was involved in audit of project resources					
The community has technical and management capacity to operate and maintain the project					

12. Has your organization offered any training to the community on how to operate, manage and maintain the project? Yes No

13. If yes, what kind of training has been offered?

14. In your opinion, to what extent does participation of Kiambiu slum community in implementation of KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

Part E: Influence of Community Participation in Project Monitoring and Evaluation on Sustainably of Community Based Projects

15. Please indicate your level of agreement with the following statements about Kiambiu slum community’s participation in monitoring and evaluation of KIWESA slum project. Please use the scale: Strongly Agree (5); Agree (4); Neutral (3); Disagree (2) and Strongly Disagree (1)

Variable	5	4	3	2	1
The community participated in assessing project performance					
The community has implemented lessons from M&E					

16. In your opinion, to what extent does participation of Kiambiu slum community in monitoring and evaluation of KIWESA slum project influence sustainability of the project?

Very great extent Great extent Moderate extent

Little extent No extent

APPENDIX 4: KREJCIE AND MORGAN TABLE

Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
 "S" is sample size.

Source: Krejcie & Morgan, 1970