FACTORS AFFECTING IMPLEMENTATION OF SANITATION PROJECTS IN KENYAN SLUMS: A STUDY OF MUKURU KAYABA SLUMS IN NAIROBI COUNTY

BY

BRIAN OTIENO ODHIAMBO

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DECLARATION

This Research Project Report is my own original work and has not been submitted to any other university for the award of a degree.

Signature .....Date...25th July 2012.....

Brian Otieno Odhiambo

L50/60415/2010

This Research Project Report has been submitted for examination with my approval as the University Supervisor.

Signature.....Date.....28/7/2012.....

Dr. Harriet Kidombo

Senior Lecturer, Department of Educational Studies, University of Nairobi

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DEDICATION

This research project report is dedicated to my sisters Judith, Dorothy, Angela, Lynnette and Bettina.

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ABBREVIATIONS & ACRONYMS

CBO	Community Based Organization
DFID	Department for International Development
IDA	International Development Association
KENSUP	Kenya Slum Upgrading Project
KII	Key Information Interviews
KWAHO	Kenya Water for Health Organization
NEMA	National Environment Management Authority
NETWAS	Network for Water and Sanitation
NGO	Non-Governmental Organization
NISWASIP	Nairobi Informal Settlements Water and Sanitation Improvement Programme
UN	United Nations
UNESCO	United Nations Educational, scientific and cultural organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WDC	Water Project Committees
WHO	World Health Organization
PMBOK	Project Management Book of Knowledge

ABSTRACT

The unprecedented urbanization of Nairobi has led to severe pressure on Social amenities of the city especially sanitation. Urban poor are the worst sufferers as most poor households especially in slum areas have to make alternative solutions to waste disposal. This study focused on factors that affect implementation of sanitation projects in Mukuru Kayaba slums in Nairobi, concentrating on how Availability of funds, Personnel expertise and Community involvement affect implementation of the sanitation projects. There is not much literature on the specific challenges that affect Mukuru Kayaba slums in Nairobi. Therefore, the purpose of this study was to fill this gap in knowledge by examining specific factors affecting the implementation of sanitation projects.

The study was carried out in Mukuru Kayaba slums in Makadara constituency Nairobi County. This area of study was selected because the researcher is familiar with the geographical settings and could access the respondents with ease. Descriptive survey design utilizing both qualitative and quantitative approaches was used. The research instruments used were questionnaires, designed to gather objective data and interviews. The collected data was thoroughly examined and checked for correctness and comprehensibility. The data was then summarized and tabulated and analyzed using Statistical Package for Social Science (SPSS).

From the results, it was concluded that there is a positive correlation between project implementation and government policies, availability of funds, personnel expertise, and stakeholder involvement. And that these factors strongly affect the success of the sanitation projects in Mukuru Kayaba slums. The study recommends that all the stakeholders have the potential to improve the process of implementation of sanitation projects despite the limiting factors. This can be done by increasing funding by donors and the government, the government coming up with laws that favor improved development of slums. Personnel expertise should be employed in conducting research on the area where the project is to be implemented thereby reducing the incidences of factors that could prevent the toilet users from effectively using them, and the community should also be fully involved in implementation process.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Hygiene and sanitation are necessities in the building of a healthy society, Worldwide today, billions of people lack access to adequate sanitation (WHO and UNICEF 2000), causing serious problems of human dignity, public health and environmental health. Through illness and decreased productivity, lack of water and sanitation is intimately related to the perpetuation of poverty, and thus affects economic, social and human development (World Bank 1994, WHO and UNICEF 2000, Habitat 2001b). To meet the international target of halving the world's population without access to improved sanitation by 2015, adequate sanitation must be provided to 2200 million people. That would require annual investments of almost double those seen in the 1990s from now until 2015 (WHO and UNICEF 2000). However, in spite of this rapid increase in slum population, local and international attention to the infrastructure and service needs of the urban poor has slowed and even stagnated (USAID 2002)

Rapid urbanization has meant that more informal structures with little or no water and sanitation services are springing up in Kenya. According to the 2009 census, an estimated one in every five Kenyans uses the bush as a toilet. According to the United Nations' World Water Development Report (2006), 65 per cent of people living in Kenya's urban areas have no access to basic sanitation, while 40 per cent of rural dwellers go without sanitation facilities.

Global figures on sanitation estimate that 2.6 billion people worldwide don't have access to basic sanitation. Annually, 2.2 million people die from sanitation-related illnesses globally. In Kenya, related illnesses account for 6 per cent of premature deaths in Kenya, and most medical visits are caused by poor sanitation. Majority of people do not realize just how big an issue sanitation- or lack thereof- is especially in urban slum areas.

Inadequate water and sanitation facilities and looming threat of disease outbreaks have made the condition of Kenyan slums incredibly pitiable. However, due to the government's policy of not supporting illegal settlements, the slum infrastructure has also remained poor. The lack of water and improper waste disposal are a big threat to lives due to the risk of water-borne diseases. The threat of typhoid, cholera and other diseases from poor sanitation is real. For most families, there

is always an anxious moment whenever they must use the bathroom, this is because options in the slum areas are very limited. Though some pay-toilets have been set up, the cost remains prohibitive for the slum residents. To use a latrine in the slum will cost a dweller Ksh.5 charged by the bathroom attendants. The other option is to answer to nature's call in a plastic bag at night, to be disposed of as a 'flying toilet' early the next morning. This is not the most hygienic of ways, but seeing as there are few options, there is not much that can be done.

Projects are unique, novel and transient endeavors undertaken by organizations to achieve development objectives. A project can also be defined as a temporary endeavor, having a defined beginning and end, undertaken to meet unique goals and objectives, usually to bring about beneficial change or added value. Also, a project can be defined as a one-off finite piece of work with fixed start and end points and clear objectives. Project management is the process of coordinating projects in such a way that there is prioritizing the sharing of resources between tasks in order to achieve a higher level of objectives. In any job that is undertaken, there is an element of planning, organizing and prioritizing, these are the management activities. All projects therefore, need to be managed because we exist in a changing world with different variables at play. Implementation is the carrying out, execution, or practice of a plan, a method or any design for doing something. Implementation is also the stage where all the planned activities are put into actions.

1.2 Statement of the Problem

The purpose of the study is to verify the viability of Sanitation projects as an alternative to infrastructure based sanitation solutions in Mukuru Kayaba slums, Nairobi County, Kenya. This is in regard to the social, economic, cultural and environmental dimensions. The primary challenge of project management is to achieve all of the objectives while honoring the preconceived project constraints of scope, time and budget. The secondary and more ambitious challenge is to optimize the allocation and integration of inputs necessary to meet predefined objectives. Majority of projects never meet their laid down schedule, they end up either taking more time than what is allocated, some go half way and collapse and others do not reach the implementation stage. (Gurashie 1999, Karimi 1998, Talukhaba 1988, Kayongo 1981)

For a developing country like Kenya, project delays frustrate development efforts (Garashie 1999). Talukhaba (1988) observed that some projects take longer than scheduled to accomplish

thereby resulting in cost overruns. Similar cases are common in the public sector where projects have continued to experience delays e.g. the construction of the Thika superhighway which was scheduled to be completed by December 2011 but the contractors are estimating a delay of three months with a cost overrun of an estimated Kenya shilling 2.7billion to 5 billion (East African standard, 12th May 2011).

Although several studies have been done in construction and donor funded projects, very little has been done on sanitation projects in particular, despite its importance and as a basic need. There is therefore need to research on the factors that affect the implementation of sanitation projects so as to be able to improve on the situation. It is also noted that the problems in slums are mostly specific and may not be easily generalized. There is not much literature on the specific challenges that affect Mukuru Kayaba slums in Nairobi; this is the gap that the study will endeavor to fill concentrating on how government policies, personnel expertise of implementers and community participation affect project implementation.

1.3 Purpose of the Study

The purpose of the study is to analyze the factors that affect implementation of sanitation projects in Mukuru Kayaba slums, Nairobi County; Kenya. This research provided an insight into the various aspects of project management in slum areas.

1.4 Objectives of the Study

The study has the following specific objectives:

i. To ascertain how availability of financial resources affect implementation of sanitation projects in Mukuru Kayaba slums.
ii. To determine how availability of personnel expertise affect implementation of sanitation projects in Mukuru Kayaba slums.
iii. To establish how stakeholder involvement affect implementation of sanitation projects in Mukuru Kayaba slums.
iv. To establish how government policies and regulatory guidelines affect implementation of sanitation projects in Mukuru Kayaba slums.

1.5 Research Questions

The study seeks to answer the following questions:

1. How does availability of financial resources affect implementation of sanitation projects Mukuru Kayaba slums?
2. To what extent does personnel expertise affect implementation of sanitation projects in Mukuru Kayaba slums?
3. How does stakeholder involvement affect implementation of sanitation projects in Mukuru Kayaba slums?
4. How do the government policies and regulatory guidelines affect implementation of sanitation projects in Mukuru Kayaba slums?

1.6 Significance of the Study

The findings and recommendations of this study are important to various groups. Project managers in Mukuru Kayaba slums oversee the daily operations of the projects, hence, they will be able to understand the factors that are likely to enhance or hinder implementation of the projects they oversee. This research provided an insight into the various aspects of project management in slum areas; this will be vital information to future research in this field.

From the recommendations, the government, through the relevant institutions and the Ministry of health, will be able to review policies that govern infrastructural development in slum areas. Other stakeholders will have a clear understanding and analysis of the current sanitation challenges in urban slums and the need for prompt measures to address them.

1.7 Limitation of the Study

The study accepts some challenges as envisaged in the research. One of the challenges was accessing the respondents owing to the rules and regulations of the organizations' operation policies. However, I administered questionnaires to the respondents which I then collected after a while. Getting access to important information proved to be a challenge due to the attachment of the organizations on information confidentiality. I aimed at creating a rapport with the various organizations in the area in order to get the right information.

The research project required a substantial amount of funds to oversee its implementation. I made use of research assistants to save on time and coverage of the area of study. To encourage submission of accurate information, I assured the respondents of confidentiality.

1.8 Delimitations of the Study

The study focuses on the implementation of sanitation projects in Mukuru Kayaba and focused on key areas attributed to; personnel expertise of the project implementers, financial resources, community involvement, and how government policies affect these factors for the period of study. This area of study was selected because the researcher is familiar with the geographical settings and could access the respondents with ease.

1.9 Assumption of the Study

This research work assumed that the respondents will give correct and objective information.

1.10. Definition of Significant Terms used in the Study

Slum: a slum is defined as a squalid section of a city, characterized by inferior living conditions and usually by overcrowding. a slum can also be defined as a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security.

Sanitation: Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in households and across communities. The word 'sanitation' also refers to the maintenance of hygienic conditions, through services such as garbage collection and wastewater disposal. Sanitation can also be defined as the hygienic means of promoting health through prevention of human contact with the hazards of wastes. Hazards can be physical, microbiological, biological or chemical agents of disease.

Project: a project is a scheme of something to be done or an undertaking; it can also be defined as the control of resources, both human and non human in a temporary arrangement to achieve specific objectives.

Expertise: This is the set of skills, knowledge of judgment that a person possesses. Expertise can also be defined is the knowledge gained by actually doing or living through something. In the case of this project the expertise refers to having knowledge and skills in implementing a project successfully.

Project Implementation: Project implementation is one of the components of project planning and Management. It is an important component of the project cycle. It has been defined as the process that turns strategies and plans into actions that accomplish objectives it addresses the where, when and how to carry out certain activities successfully.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on the subject being researched. The matter contained in this chapter relates on the past studies on the theoretical concepts and empirical literature. Research work earned critical review of the existing literature alongside establishing the independent variables much more briefly with regards to how they affect implementation of projects in slum areas. Further, this section introduces sanitation issues, challenges and research findings by other scholars, development organizations and government departments as well.

Project implementation is the most critical stage of any project. At this stage activities of the project are actually carried out and funds are disbursed to facilitate the activities (Benjamin 1985). (Little and Mirlees 1976) argue that indeed project implementation is a process of refinement and can actually be considered to be a mini cycle within the larger project cycle.

2.2 Theoretical perspective of project implementation

The development of a body of theory is typical of a well-established profession, such as law, medicine, architecture, accounting, and nursing. Mastery of theory, along with mastery of practical skills of the field, is a hallmark of professionals. According to Fugate and Knapp, reliance on the theoretical is the single most important factor distinguishing a profession from a craft.

However, surprisingly, this issue of the theoretical does not figure in any way in the above-mentioned report on the future of project management (Project Management Institute 1999), even when the future of the profession of project management is in the focus. Research literature on project management reveals that this omission of the theoretical is no incidental phenomenon: in their analysis of project management research, spanning forty years, Kloppenborg and Opfer (2000) have nothing to report on the theory of project management. This extraordinary silence on the theory is puzzling; it is either conceded that there is no theory of project management, or it reflects the opinion that the theory is not significant from the point of view of project management.

Project management as practiced today rests on an implicit and narrow theory that must be developed, extended and enriched. Indeed, it is the poverty of current theory that explains the other problems of project management, such as frequent project failures (Kharbanda & Pinto 1996), lack of commitment towards project management methods (Forsberg & al. 1996) and slow rate of methodological renewal (Morris 1994). Thus an explicit theory is the crucial and single most important issue for the future of the project management profession.

The underlying theory in the present doctrine of project management is analyzed based on the Guide to the Project Management Body of Knowledge (PMBOK Guide) of PMI (Duncan 1996). Of course, there are certainly other formulations about the primary characteristics of project management, and it can be argued what the true doctrine of project management should be; however, for the purposes of this research, the PMBOK Guide provides for a useful summary of that doctrine.

2.2.1 Theory of project management

A theory consists primarily from concepts and causal relationships that relate these concepts (Whetten 1989). It is possible to broadly characterize a target theory of production/operations management (Koskela 2000). This characterization applies also for project management, being a special type of production/operations management. A theory of project management should be prescriptive: it should reveal how action contributes to the goals set to it. On the most general level, there are three possible actions: design of the systems employed in designing and making; control of those systems in order to realize the production intended; improvement of those systems. Project management, and indeed all production, has three kinds of goal. Firstly, the goal of getting intended products produced in general.

Secondly, there are internal goals, such as cost minimization and level of utilization. Thirdly, there are external goals related to the needs of the customer, like quality, dependability and flexibility. It is generally seen that there is no explicit theory of project management (Shenhar 1998, Turner 1999). However, it is possible to find statements from the PMBOK Guide or the work of leading scholars on project management that approximate the definition of a theory or from which a theory can be deduced. Based on such core statements, we proceed in two steps. First, we crystallize the prescriptions (for action) and explicit principles of project management

regarding a specific aspect or part of the project management process. Secondly, we compare this crystallization to the principles and prescriptions of candidate theories and identify a corresponding theory.

The PMBOK Guide states that projects are composed of two kinds of processes: project management processes and product-oriented processes (which specify and create the project product). Project management processes are further divided into initiating, planning, execution, controlling and closing processes.

2.2.2 Theory of project

In the theory of project management, we take the crystallization of Turner (1993) (also referenced in the PMBOK Guide) as a starting point for a reconstruction of the theory of project. According to Turner, scope management is the *raison d'ētre* of project management. He defines the purpose of scope management as follows: (1) an adequate or sufficient amount of work is done; (2) unnecessary work is not done; (3) the work that is done delivers the stated business purpose. The scope is defined through the work breakdown structure (WBS).

From a theoretical point of view, firstly, he (implicitly) claims that project management is about managing work; this is the conceptualization. Secondly, he claims that work can be managed by decomposing the total work effort into smaller chunks of work, which are called activities and tasks in the PMBOK Guide. Thirdly, he claims that this conceptualization and the principle of decomposition serve three essential purposes of project management. Even if not mentioned by Turner, there is an important, but implicit assumption associated with decomposition, namely that tasks are related if at all by sequential dependence.

Indeed, a review of the PMBOK Guide reveals that activities and tasks are the unit of analysis in the core processes of project management, like scope management, time management, and cost management, and that their management and control is centralized. This is also supported by the description of Morris of the classic - and still current - project management approach as follows (Morris 1994): ...first, what needs to be done; second, who is going to do what; third, when actions are to be performed; fourth, how much is required to be spent in total, how much has been spent so far, and how much has still to be spent. Central to this sequence is the Work Breakdown Structure (WBS).

When we compare this crystallization of project management to the theories of operations management in general, it is easy to recognize that it rests on the transformation theory (or view) of production, which has dominated production thinking throughout the 20th century. For example, Starr (1966) formulates: Any production process can be viewed as an input-output system. In other words, there is a set of resources which we call inputs. A transformation process operates on this set and releases it in a modified form which we call outputs. The management of the transformation process is what we mean by production management.

In the transformation view, production is conceptualized as a transformation of inputs to outputs. There are a number of principles, by means of which production is managed (Koskela 2000). These principles suggest, for example, decomposing the total transformation hierarchically into smaller transformations, tasks, and minimizing the cost of each task independently. The transformation view has its intellectual origins in economics. The popular value chain theory, proposed by Porter (1985), is one approach embodying the transformation view. An explicit production theory based directly on the original view on production in economics has been proposed by a group of scholars led by Wortmann (1992). However, mostly the transformation view has been implicit – so embedded in thinking and practice that it has formed the basis of an invisible, unspoken paradigm that shapes behavior.

2.2.3 Theory of management

The PMBOK Guide divides project management processes into initiating, planning, execution, controlling and closing processes. A central idea is that these processes form a closed loop: the planning processes provide a plan that is realized by the executing processes, and variances from the baseline or requests for change lead to corrections in execution or changes in further plans.

2.2.4 Theory of Execution / Implementation

The theory deals with how the project plan executed. The PMBOK Guide is puzzlingly brief-worded. The only direct reference to the actual interface between plan and work is with regard to work authorization system, PMBOK Guide says that a work authorization system is a formal procedure for sanctioning project work to ensure that work is done at the right time and in the proper sequence. The primary mechanism is typically a written authorization to begin work on a

specific activity or work package. The design of the work authorization system should balance the value of the control provided with the cost of that control.

For example, on many smaller projects, verbal authorizations will be adequate. The underlying theory of execution turns out to be similar to the concept of job dispatching in manufacturing where it provides the interface between plan and work. This concept can be traced back to Emerson (1917). The basic issue in dispatching is allocating or assignment of tasks or jobs to machines or work crews, usually by a central authority. According to a modern definition, job dispatching is a procedure that uses logical decision rules to select a job for processing on a machine that has just come available (Bhaskaran & Pinedo 1991).

Obviously, dispatching consists of two elements: decision (for selecting task for a workstation from those predefined tasks that are ready for execution), and communicating the assignment (or authorization) to the workstation. However, in the case of project management, that decision is largely taken care in planning, and thus dispatching is reduced to mere communication: written or oral authorization or notification to start work. Here, the underlying theory seems to be the classical theory of communication (Shannon & Weaver 1949), where a set of symbols (voice or written speech) is transmitted from sender to receiver.

There are two types of critique against the dispatching theory of project management. The first strand of criticism addresses the assumption that the inputs to a task and the resources to execute it are ready at the time of authorization. This criticism starts from the theory of planning – management as planning. In that approach, the unproblematic realization of tasks pushed by the plan to the execution is assumed. However, it is very difficult to maintain an up-to-date plan, and thus the tasks pushed by the plan do not correspond to reality, i.e. their prerequisites in terms of predecessor tasks (or other inputs) do not necessarily exist. This leads to the situation that a major share of tasks to be commenced, when pushed by the plan, chronically lack one or more of their inputs. In fact, this phenomenon is so pervasive that Johnston and Brennan (1996) say of the management-as-planning approach: "that this approach works at all is largely attributable to tacit knowledge and improvisation at the operational level."

The second strand of criticism addresses the way action is thought to flow from authorization of a task. It is assumed that the task is fully understood, started and completed according to the plan once authorized.

The dispatching model could be compared to starting an engine, which will run at a known rate utilizing planned resources; commitment of those responsible is implicitly presumed. This starting is achieved through communicating the authorization. That is giving orders to the responsible person. However, this view has been challenged by the language/action perspective (Winograd and Flores 1986). They argue that the work in organizations is coordinated through making and keeping commitments. The commitment cycle begins with an offer or a request, followed by a promise, performance and declaration of completion. Thus action is coordinated by the commitments people make rather than by central control acting through commands. (In the language action view, orders are understood as strong requests and even here commitment arises from the promise to follow it.) The language action perspective reveals two basic shortcomings of the dispatching model. Firstly, in dispatching, there should be two-way communication between the controller and the executors. Secondly, it is necessary to consider the commitment of the executor; a job will actually be started and completed only if the executor is committed to realize it.

It is illuminating to contrast an engineering prescription for dispatching and an anthropological account of the situation when this prescription has been implemented. Fondahl (1980) recommends the following procedure for execution based on the implementation of a critical path network – it is easy note that this is the very idea of dispatching: Issue weekly memos to lower-echelon managers and subcontractors who have activities in progress during the week. These should provide updated start dates, details on methods and resource utilization, and current activity duration estimates.

Ballard and Howell (1998) found that in conventionally managed construction, a realization rate of 50 – 60 % is typically found for weekly tasks. Largely this low rate could be explained by missing inputs or resources during the execution of the task.

These observations are fully in line with the theoretical argument that in the management-as-planning approach execution must rely on informal management in order to succeed in general. Tasks pushed to execution lack chronically inputs. That execution is managed informally seems to be a direct consequence from the underlying theory of management.

2.3 Factors affecting project implementation

During the project life cycle the project manager encounters problems which may adversely affect the progress of the project in terms of time budget and expected quality (Garashie 1999). Garashie's investigation on determination factors influencing project delays in the ministry of water projects in the case of government funded projects found out that the quality of project management was the most influencing factor in determining project delay.

Project performance is determined, among other factors, by the efficiency of implementation arrangements. Factors that impinge on the implementation process include changes in scope, implementation delays and cost variations. (Asian development bank, 1994). Raluca (2011), investigating the deficiencies and difficulties of project management since the promotion stage of integrated waste systems noted that at level of the Project Implementation Unit level, the major deficiency was the lack of credibility and assertion of authority in report with the local authorities whose interests it represented – in promoting innovative ideas and solutions. Also, the project implementation unit did not manage to determine the local authorities to renounce their own divergences and interests and to adopt a common solution in the benefit of the entire community. Another shortcoming at the level of the project implementation unit was seen through the medium-to-low degree of skills qualification of the recruited staff concerning the responsibilities related to implementation of a major project, in most of the cases being outdone by the professional technical-economic issues, as well through the ignorance in terms of environment legislation.

During the start of the project, there should be complete definition of the project requirements. Karimi (1998) investigated the factors critical in the project cost overruns in the ministry of water resources projects the major objectives of the research were to identify the critical factors which contribute to cost overruns and to identify what needs to be done in the light of the factors. The results were the project organization, environmental conditions, quality of project management, project definition and infrastructure and logistics. She recommended complete definition of project requirements, improvement on the personnel policy, organization structure, better communication, better project management, external auditing, environmental sensitivity and provision of better infrastructure facilities.

Adequate communication is also very important in creating an environment for successful project implementation. Pinto and Slevin in 1988 researched on critical success factors in effective project implementation. They cited communication to be the most critical factor. Communication refers to the necessity to exchange information with both the clients and the rest of the project team and organization concerning the project goals, changes in procedures, progress reports and any other developments (Pinto and Slevin in 1988).

Another factor that has been shown to affect project implementation is the minimal use of project management tools. Mwadili (1996), investigated the major factors that affect project management in Kenya railways projects, His findings revealed that there was minimal use of project management tools in the management of the projects. The other factor that affected project management included poor communication, little experience of the project managers, late procurement of equipments, lack of training, ineffective monitoring and evaluation systems, lack of personnel motivation and slow project selection methods.

According to the Asian development bank sector synthesis of post-evaluation findings in the water supply and sanitation sector 1994, the changes in scope and design made during implementation generally do not affect project objectives; they contributed to implementation delays, which in turn result in cost overruns. The study further indicates that all post-evaluated projects experienced implementation delays. The average implementation period was 6.3 years, and the average delay was 2.5 years. Delays stemmed from significant changes in design and scope, right-of-way constraints, procurement problems, delay in recruitment of consultants, adverse soil conditions, poor performance of the contractors and unrealistic implementation schedules. Unfamiliarity of executing agencies with the Bank's policies and procedures, inadequate provision of local funds and changes in Government policies also contributed to delays. Significant changes in scope combined with weaknesses of the executing agencies contribute significantly to the delays of projects.

Personnel expertise is another critical factor in project implementation. Adams in 1990 argues that the lack of trained operators and mechanics led to the repeated breakdowns in 1983-1984 in the Bura irrigation project. This resulted in shortage of water 25% of the time and this lead to delays and loss in production. (Adams 1990)

Environmental sensitivity is also central to successful project implementation. These include the natural environmental conditions, politics, monetary inflation and pressure from interest groups among others. (Hans 1990)

Majority of government building projects have major cost and time overruns. Time overruns are more frequent than cost overruns and there is no linear relationship between the two (Mbatha 1996). Big projects were shown to be more prone to both time and cost overruns than the smaller ones though project delays bear no relationship to project size. Mbatha further noted that the cause of poor time performance was the inadequacy of the initial contract periods. Inconsistent and erroneous estimation of the periods lead to time overrun during implementation. Time and cost performance was also found to be related to the type of projects. He also established that there is no linear relationship between size and time performance. He also identified late payments, bad weather, sub contracting, material shortage and work variations as other factors that cause delays in the building industry.

Adequate planning and scheduling using also affects project implementation. Some projects do not incorporate basic project planning techniques. Kayongo (1981) carried out a study on managing a project by network analysis, a case for a UNIDO project- Management Accountancy Consulting Project (MACP) Uganda. He undertook this research due to the fact that earlier observations had indicate that some UNDP projects implemented in Uganda took longer to accomplish than the estimated time. In some cases the projects were abandoned before they were completed. This research was therefore based on the assumption that lack of technical and adequate planning was the major factor responsible for the project delay. Hence he studied whether the project could be managed more efficiently by applying network analysis techniques; and whether through the use of a network analysis model the project could be completed in a predetermined time interval. He found out that by using network analysis the earliest possible time the project could be completed was five years nine months instead of the estimated two years. In view of this he recommended for the improvement in planning methods and adequate use of scientific methods like network analysis. He further observed that with network analysis, a better system of feedback controls is possible, hence corrective measures can be implemented whenever actual time overruns the estimated time interval. (Kayongo 1981)

Other project management tools such as bar charts, Gantt charts among others should also be employed to ensure successful project implementation. Inadequate use of these tools during planning and execution was identified to be a critical factor in several studies (Mwadali 1996, Grool et, al 1986)

2.4 Influence of Government Policies and Regulatory Guidelines

Water enterprises were usually government-owned and semi-autonomous public utilities. Their financial autonomy is limited by their dependence on government policies, especially those relating to tariff increases. As most governments view water enterprises as a social rather than a commercial undertaking, policies prescribed are not usually conducive to efficient operation of the water utilities. Most tariff increases were not sufficient to cover operating costs and debt service. This undermines the enterprises' financial viability. In addition, the lack of an efficient system of billing and collection further aggravates the financial condition of most utilities. (Asian development bank 1994)

It must be mentioned that most of the difficulties with major role in delaying the finalization of the applications for water projects are encountered at the level of the local decisions making factors (Raluca 2011) The main difficulty is represented by the lack of a unanimous decision from the local authorities concerning the association within IDA, in adopting and assuming a Statutes and an Articles of Association regarding the implementation of the project in total contradiction with their initial selection criteria. A certifiable deficiency was represented by the promotion of minor, local interests in the disadvantage of gaining some advantages at county level, by trying to obtain the placing of certain investment objectives on their territory, unjustified in relation to the recommendation given and technical solutions proposed by the consultant. Another difficulty was represented by the refusal of some of the local authorities to develop the sanitary landfill on their territory, expressed mostly by setting the inhabitants by the ears within the public consultation meetings, even though, from a technical point of view and from the point of view of the environment and health related legislation, the locations were correctly proposed by the Technical Assistance. In addition, the lack of coherence in adopting some local council decisions, manifested through their modification or withdrawal depending on the political context, led to considerable delays in the implementation of the project.

Furthermore, the involvement of the political factor in the implementation of the project and its unfavorable effects cannot be contested. Thus, it was observed in all five counties that some local authorities of the major cities, which had the local council/mayor of a different political party than the one of the President of the County Council have delayed or adopted decisions that led to the aggravation/stopping of the finalizing of the applications, totally ignoring the interest of the citizens in obtaining a waste management system both advanced and financed from extra-budgetary funds. (Raluca, 2011)

Lack of government support is one of the key challenges against successful implementation of toilet projects in slum areas. Lack of sustainable developments around slums has contributed greatly to the bad state of the infrastructure.

This situation has come about as a result of a number of factors linked to decades of government failure to recognize slums and settlements for city planning purposes. In addition, the government has failed to enforce relevant laws, such as those requiring landlords to ensure access to sanitation at the household level.

It is clear from experience and day to day activities that sanitation is usually placed as a side show when it comes to implementation of projects in the urban areas. Sanitation is always listed as one of the necessities but eventually ends up being the last league. Funds set aside to aid in improvement of sanitation are usually pinched for use in things like infrastructure development to enhance transport and sanitation put as a long term plan. For instance; the debt-swap agreement between the Italian and Kenyan Government aimed at financing projects using the debt Kenya owes the Italian Government ended up going the same way. These funds which accumulated to a rough estimate of 4.4 billion Kenya Shillings were set aside to facilitate social projects jointly by the two governments; the main focus being on education, health, water (which contributes greatly to sanitation) and slum upgrading (Diplomat East Africa, 2011). However, this bi lateral agreement signed in October 2006, and has been undergoing implementation since 2007, has only yielded to the construction of a footbridge, a football pitch and a road. All these were not part of the key plans but we can see that the Government chose to side step the key plans and go for the aforementioned even though they were not part of the major plan. This has in turn led to a delay in other projects meant to improve the slum dweller's socio-economic lives and living environment in the name of 'long term goals' (Diplomat East Africa, 2011). Though

these funds were mainly for the Korogocho slums, this scenario can make one assume that the same would have occurred even if the fund were set aside for different slums.

Kenya's national policies recognize the rights to sanitation and there are laws and standards in place. However, because of decades of failure to recognize slums and informal settlements, planning laws and regulations are not enforced in these areas. The lack of enforcement of these laws has ensured that landlords and structure owners in the slums can get away without providing any toilets or shower places for their tenants (Paris, 2008). The government admits to a lack of clear policies on sanitation issues as regards the country's slums. In most cities in Kenya, the local governments are less equipped structurally, fiscally, politically and administratively to tackle the provision of basic infrastructure and services. The government addresses the sanitation problem of the urban poor by building large number of houses to be sold on credit to interested households. Most of these, however, are located in suburban and peripheral areas where livelihoods opportunities, basic services, transportation and infrastructure facilities are lacking, thereby making them unattractive for slum dwellers who most times cannot afford them anyway (World Bank, 2002).

The Kenyan Government made a promise to ensure proper sanitation in the whole country so all citizens can benefit from it. However, the Government said they intend to implement this by the year 2015. In addition to that; the Kenyan Government also has a plan to ensure that the Kenyans have a slum-free country by the year 2030.This two visions/plans can be seen to be very eye-catching and very considerate. However, between now (2011) and the aforementioned year; 2015, Kenyan citizens continue to suffer under the harsh slum conditions and poor sanitation leading to illnesses due to poor hygiene which at times leads to death. Between now and the implementation year, the residents in the slum areas still use the same toilets in the slum areas as these slum dwellers have no option hence leading to illness and later death particularly in the young generation (Nesoba 2011)

Urban poor had not been granted the access to essential services until non-governmental organizations came in action. Initially, NGOs worked independently and sometimes working in cooperation with other interested NGOs. With the growing regulatory measures undertaken by the government to ensure transparency and accountability within NGOs and decrease in funds from foreign donors, the issue of public private partnership surfaced as a viable solution.

Although no conclusive studies have been done to prove that fiscal decentralization slows down the progress of development in a country (Terminassian, 1979); studies done by the UN Habitat suggest that it does have an effect in a country's development. According to the UN Habitat; autonomy is required by the local authorities so that they can act independently and have control over their own affairs. In order for the local government to succeed, the central government should decentralize their actions to municipalities. This will in turn ensure that the municipal council will exercise their own governance and hence ensure faster action on their projects and activities (UN Habitat, 2011). Since local authorities are more conversant with their projects and what requires immediate attention, it is in order that they take charge of development in their own areas of governance. Studies have also revealed that sub-national governments; Kenya included; observe autonomy in limitation. Though it is said that of all countries with sub-national governments, Kenya is the one that experiences most autonomy as compared to others including Malawi, Botswana and Rwanda; there is still a problem as councils rarely make decisions without the approval of the ministerial sector (UN Habitat, 2011).

2.5 Availability of Financial Resources

In Mukuru Kayaba slums, the poorly established latrines are housed in dilapidated structures which have cracked stone floors, rusty sheets of iron for walls and roofs made up of torn plastic and cartons. This is because they have no financial means to acquire toilets that are professionally or formally surveyed, built and serviced. (NETWAS, 2010)

The situation is worsened by the absence of an organized community framework for assessing credit for development purposes, which in the absence of provision of basic services, would enable communities to access finance for improving their living conditions. Such a financial framework could also provide for an opportunity to effectively enhance capacity of the community for self-governance and collective decision-making. (KENSUP, 2004)

Private sector responded only to provide services to peoples who can pay for the services and came up with innovative solutions to fill the gap in the service delivery sector. Understandably, the majority of urban poor are excluded from these types of service provision. NGOs working under service contact with the government did not attempt to extend services to urban poor

communities within slum mostly due to misconception on their (urban poor) ability to pay for services and governments failure to understand the adverse consequence of exclusion from access to essential services on urban poor communities. (Heller N, Acumen Fund, 2008)

N.G.O 's are receiving less and lesser foreign aids since the last ten years and many of the N.G.O 's are limiting themselves in income generation projects which surely will result a social catastrophe in near future if government does not come forward as a partner with financial, legislative and administrative support package through local governments(UN-Habitat, 2007).

2.6 Availability of Personnel Expertise

Inclusion of urban poor within waste management projects will certainly help them to keep their households and neighborhoods clean and will have positive impact on improving environmental health and financial condition. Most project implementers fail to conduct public education on proper disposal and use of sanitation services therefore leading to the misuse and abuse of the toilets in the slum areas.

Most projects aimed to be implemented in slum areas are not properly funded by donors. This is because donors fail to see the importance of these projects in terms of return of investment. Therefore, due to underfunding, these projects do not get the best in terms of personnel and human resources. This results in projects which are not expertly done and implemented.

Personnel also fail to take into account all the factors affecting the slum dwellers before implementing the toilet projects. Some of these factors include cultural practices that could prevent them from using the toilets or finances or lack of it. Personnel expertise should be employed in conducting research on the area where the project is to be implemented thereby reducing the incidences of factors that could prevent the toilet users from effectively using them.

2.7 Community Participation and Empowerment

Studies on development especially in the 1960s and 1970s have confirmed two basic truths. First, that the people are the makers of their own destiny. Second, and as a consequence of the first, that the empowerment of the people must be the central subject of any development effort.

Ignoring these two truths could be costly. Julius Nyerere (1967) laments the failure of the first attempts on rural development in Tanzania thus:

"When we tried promoting rural development in the past, we sometimes spent huge sums of the money on establishing a settlement, and supplying it with modern equipment, and social services, as well as often providing it with a management hierarchy .....

What we are doing in fact, was thinking of development in terms of things and not of people.....

As a result, there have been very many cases where heavy capital investment has resulted in no increase in output where the investment has been wasted. And in most of the officially sponsored or supported schemes, the majority of people who went to settle lost their enthusiasm, and either left the scheme altogether, or failed to carry out orders of the outsiders (administrators from other communities) who were put in charge – and who were not themselves involved in the success or failure of the project." (From Arusha Declaration 1967)

Therefore for the projects to be implemented successfully the people in the given locality must be allowed to develop their own initiative, the things that they feel they need most. The project by this notion is seen as something which must be sparked by the flames of the people (Mutulili 2004). Anything imposed is seen as failure bound. To affect the projects the people to be affected by them must be involved in their identification and implementation i.e. the people should own the project for it to be successfully implemented.

The researcher will seek to identify why sanitation projects in slum areas failed to take off. The researcher will also investigate the issues affecting the slum dwellers thereby making it difficult for them to effectively put to use the toilet projects. Examination of slum dwellers perception of the quality of their environment, government's assistance, access to infrastructure services and sanitation showed that: poor households prefer to use flying toilets rather than pay Ksh.5 to use a clean well functioning toilet and bathroom facility, are unwilling to take part in projects that fail to take into consideration their local circumstances and practices, that most toilet projects fail to take off due to lack of donor support financially, that the lack of an organized coordination mechanism at the community, local authority and national levels severely affect the success of these projects.

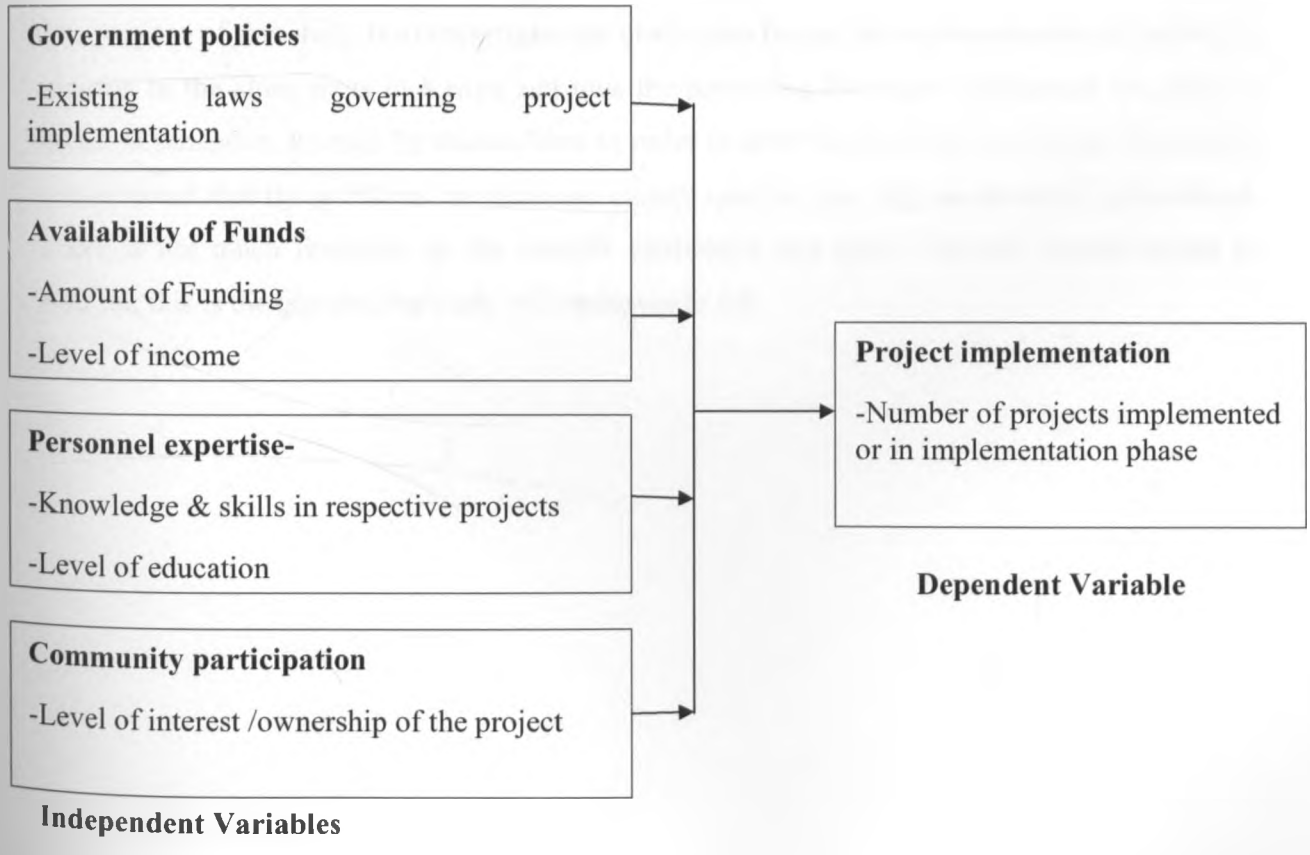
2.8 Conceptual Framework of the Study

A conceptual framework is a type of intermediate theory that attempt to connect all the aspects of an inquiry (e.g., problem definition, purpose, literature review, methodology, data collection and analysis). It acts like a map that gives coherence to empirical inquiry.

In view of the discussion above, it is inferred that implementation of sanitation projects in the slum areas is dependent upon several core factors such, availability of financial resources, availability of personnel expertise and community participation. Also the government affects the above factors by way of policies and regulatory guidelines that are in place. This forms our understanding of inherent conceptual framework for the study.

The figure below shows the conceptual framework that will be adopted for this study. The system presents the logical relationships between the identified moderating, independent and dependent study variables that this research study will investigate.

Figure 1 Conceptual Framework



2.8.1 Operational definition of the variables in the conceptual framework

The above conceptual framework shows the identified variables and their interrelatedness that mitigate in the research framework. Government regulatory guidelines that favor project implementation include taxes levied on building materials hence the greater the tax, the higher the chances of implementation having a problem.

The availability of financial resources can seriously affect any venture making it a hindrance to achieving the set goals. Thus lack of enough capital will affect project implementation.

Availability of personnel with the required expertise includes the relevant human skills and more so technical skills for technical tasks. These skills are important in monitoring of projects and subsequent effective implementation.

Community participation is important so that the slum dwellers own the project and help in its successful implementation.

2.9 Summary

The purpose of this study is to investigate the challenges facing the implementation of sanitation projects in the slum areas in Kenya and thus the prevailing literature emphasized the need to invest in sanitation services by stakeholders in order to uplift the livelihoods of slum dwellers. It is also noted that the problems in slums are mostly specific and may not be easily generalized. There is not much literature on the specific challenges that affect Mukuru Kayaba slums in Nairobi; this is the gap that the study will endeavor to fill.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was used to answer the research questions. The chapter describes research design, the target population, sampling design, data collection and various questionnaires that were administered to various respondents. It also explains validity and reliability of the research instruments, data collection procedures and finally the data analysis procedures.

3.2 Research Design

This study adopted a descriptive research design to investigate the challenges facing the implementation of toilet projects in slum areas. According to Best and Khan (1992), descriptive research seeks to establish factors with certain occurrences, outcomes, continuous or type of behavior. Abagi (1995) argues that descriptive Research attempts to describe what was or what is in a social system. It is aimed at helping the research have an in-depth study of the problem under investigation. I used open ended and structured questionnaires and interviews to gather data.

3.3 Location of the Study

Mukuru Kayaba is a slum in Makadara Constituency, located in the east of Nairobi city. It is situated in the neighborhoods' of industrial area and South B estate. This area of study has been selected because the researcher is familiar with the geographical settings and can easily access the respondents. Hence, Mukuru Kayaba has been chosen owing to the fact that it is accessible and that there is some rapport between the researcher and the area in question.

3.4 Target Population

Mugenda and Mugenda (1999) describes the target population as the complete set of individual cases or objects with some common characteristics to which the resources used to generalize the results of the study. There are five sanitation projects funded by various donors, government agencies and various NGO's. I targeted the total population of stakeholders in the projects

including community leaders, project implementers and the slum residents. Among these, a sample size was picked through stratified sampling to obtain the research sample. I used stratified sampling since the target population had several groups that had to be separated in order to get a clear understanding of the situation. Stratified sampling also allows for a more representative sample of the respondents.

3.5 Sample Design

The study adopted the stratified random sampling design. Stratified random sampling involves a process of stratification or segregation of the population in homogenous groups with similar characteristics. This is then followed by random selection of subjects from each stratum. This is justified because the target population is heterogeneous. It was therefore sub-divided into strata according to the various sources. The sample was then randomly taken from each stratum. This ensured that biasness is reduced within each stratum.

The population of interest comprise of all the stakeholders from Mukuru kayaba slum area. A sample size of 10 percent of the slum population (sanitation project users approximately 1,500 people) was chosen. This was considered to be an adequate and representative sample because a representative sample is one that is at least 10 percent of the target population (Kothari, 2008). This was applied to the project users since they have a high population (Approximately 1500) and a representative sample will be enough to get results. However the total population of the project implementers and community leaders was included in the research as they are fewer in number.

Table 3.1 Sample size

Category of respondents	*Total population*	*Sample*	*percentage*
Community leaders	50	50	22%
Project implementers	30	30	13%
Users	1,500	150	65%
Total	**1,580**	**230**	**100%**

3.6 Data Collection Instruments and Procedures

Questionnaires were administered to all the respondents. A questionnaire is a technique of data collection in which the respondent completes a list of questions at his/her convenience. They are usually delivered by mail or directly to the respondent. It allows the respondent to take more time to collect facts, talk to others or consider replies at length. In this research, the respondents were given one week within which to fill them. The delivery was made to the site of the projects. Through the co-ordination of the project managers they were distributed to the respondents.

Interviews were also carried out. An interview is a two-way conversation initiated by an interviewer to obtain information from the respondent. Interviewing is the careful asking of relevant questions to a respondent. It has been described as the most important data-collection technique a qualitative researcher possesses. The purpose of interviewing people is to find out what is on their minds, what they think or how they feel about something. This involves collection of data through face to face interaction with individual and group respondents. Key information interviews (KII) were held with some of the respondents. Key information from the most knowledgeable or experts was collected through this method. The advantages of interviews are that respondents answer the same questions, thus increasing comparability of responses; data are complete for each person on the topic addressed in the interview. Interviews also reduce interviewer effects and bias when several interviewers are used and permits evaluation of users to see and review the instrumentation used in the evaluation.

3.6.1 Validity of Research Instruments

Validity refers to the appropriateness, meaningfulness and usefulness of the inferences a researcher makes. Validity depends on the amount and type of evidence there is to support the interpretations the researcher wishes to make concerning data they have collected. The most important question we should ask ourselves as researchers is whether the results of the assessment provides useful information about the research questions or the variables being measured. To avoid errors of impression whereby the respondents lies to impress the researcher, the same results were compared by other respondents to decide which answer is most accurate. The researcher also avoided certain direct questions which would have made the respondents uncomfortable.

3.6.2 Reliability of Research Instruments

Reliability refers to the consistency of scores or answers from one administration of an instrument to another, and from one set of items to another. That is how consistent the scores are for each individual from one administration of an instrument to another and from one item to another. Reliability will be tested by asking the same question but in different ways to allow the researcher to make comprehensive decision on the same. A pre-test questionnaire was tested on 5% of the population for the purposes of reviewing the instrument using feedback from the pre-test.

3.7 Methods of Data Analysis

The statistical method used in the research was descriptive statistics; statistical package for social sciences (SPSS) was used to code, enter and compute the measurements of the multiple regressions for the study. Karl Pearson's coefficient of correlation (r) was used to study the correlation between the study variables and the findings. Multiple regression analysis of the data was also conducted.

3.8 Operational Definition of the Variables

Table number 3.2 explains on the operationalization of the variables of the concepts that will be used in the research. The independent variables have direct relationship with the dependent variable. An index of measurement and observation has been identified for each variable in the parameter of ordinal and nominal scales. Finally, descriptive analysis has been identified for each of the variables.

Table 3.2 Operationalization of the Variables

Objective	*Variable*	*Indicators*	*Measurement Scale*	*Tools of Analysis*	*Type of Analysis*
	Independent Variable				
How does availability of financial resources affect project implementation in Mukuru Kayaba?	Availability of Financial Resources	1. level of income 2. Amount of funding	Ordinal scale.	-Percentage -Regression & correlation analysis	Descriptive analysis.
To what extent does personnel expertise affect project implementation in Mukuru Kayaba?	Availability of Personnel Expertise	1. Knowledge and skills in respective projects. 2.Level of education	Ordinal scale.	-Percentage -Regression & correlation analysis	Descriptive analysis.
How do the government policies and regulatory guidelines affect project implementation in Mukuru Kayaba?	Government Policies and Regulatory Guidelines	Existing laws and regulations governing implementation of projects.	Ordinal scale.	-Percentage -Regression & correlation analysis	Descriptive analysis.
How does community Participation affect project Implementation	Community Participation	1. Level of interest of the community in owning the projects. 2.Level of education	Ordinal scale.	-Percentage -Regression & correlation analysis	Descriptive analysis.
	Dependent Variable				
	Project Implementation	Number of projects implemented or in implementation phase	Nominal scale.	Mode	Descriptive analysis.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter the results and the findings from the conducted study in Mukuru Kayaba slums in Nairobi County are presented. The chapter presents the results of the study and a discussion of the study findings. The general objective of the study was to determine factors that affect implementation of sanitation projects in Kenya with specific focus on Mukuru Kayaba slums in Nairobi County. The study was guided by the following objectives:

i. To ascertain how availability of financial resources affect implementation of sanitation projects in Mukuru Kayaba slums.
ii. To determine how availability of personnel expertise affect implementation of sanitation projects in Mukuru Kayaba slums.
iii. To establish how stakeholder involvement affect implementation of sanitation projects in Mukuru Kayaba slums.
iv. To establish how government policies and regulatory guidelines affect implementation of sanitation projects in Mukuru Kayaba slums.

4.2 Response Rate of the Respondents

Table 4.1 illustrates the response rate of the respondents that participated in the survey. The study targeted 230 respondents (Community leaders, Project implementers and Users) at Mukuru Kayaba slum in Nairobi County. However, out of 230 questionnaires distributed 144 respondents completely filled in and returned the questionnaires contributing to 63.7%. This complied with Mugenda and Mugenda (2003) who suggested that for generalization a response rate of 50% is adequate for analysis and reporting, 60% is good and a response rate of 70% and over is excellent.

This response rate can be attributed to the data collection procedure, where the researcher involved the project managers and the community leaders to distribute the questionnaires and waited for respondents to fill in, and assisted them in clarifying any query they had. The 37% questionnaires that were not returned were due to reasons like, the respondents were not

available to fill them in at that time and with persistent follow-ups there were no positive responses from them. The response rate demonstrates a willingness of the respondents' to participate in the survey that the study sought.

Table 4.1 Response Rate

Response Rate	*Frequency*	*Percentage*
Response	144	63
Non response	86	37
Total	**230**	**100**

4.3 Demographic Characterization of the Respondents

The study found it crucial to ascertain the broad data of the respondents since it structures the charity under which the study can fairly entrance the pertinent data. The analysis relied on this data of the respondents so as to classify the different results according to their knowledge and responses.

4.3.1 Respondents by Gender

Figure 4.1 is an indication of the gender content in the survey. The total number of male respondents was 58% while the number of female respondents was 42%.From the study it can be concluded that the number of male respondents was higher than the number of female respondents. This also implied that most of the residents in Kayaba slums are male.

Table 4.2 Gender of the Respondents

Gender	*Frequency*	*Percentage*
Male	84	58
Female	60	42
Total	**144**	**100**

4.3.2 Age of Respondents

The researcher requested the respondents to indicate their age bracket in which they were. From the findings, as in table 4.2, 3% of the respondents were below the age of 20 years, 16% were between the ages of 20-25, 25% were between the ages of 26-30, 10% were of the age bracket 36-45 while 24% were of the ages of above 46 years. Based on the study it can be inferred that majority of the respondents were between the age of 26-30, of those who are expected to spend most of their life span in the area as they are sustained by their working place.

Table 4.3 Age Bracket of Respondents

Age Category	*Frequency*	*Percentage*
Less than 20 years	4	3
20-25 years	23	16
26-30 years	36	25
31-35 years	15	10
36-45 years	31	22
Above 46 years	35	24
Total	**144**	**100**

4.3.3 Marital Status of the Respondents

Table 4.4 above indicates the analysis of marital status. Based on the findings 29% of the respondents were single, 59% of the respondents were married, 4% were divorced while 8% were widowed. This implies that the married respondents were the majority.

Table 4.4 Marital Status of the Respondent

Marital Status	*Frequency*	*Percentage*
Single	42	29
Married	85	59
Divorced	6	4
Widowed	11	8
Total	**144**	**100**

4.3.4 Respondents Level of Education

Table 4.3 above shows the level of education of various respondents. According to the table, 34% of the respondents had primary level education, 51% secondary level, 6% had a collage diploma and 9% were university graduates. From the study majority of the respondents had either primary or secondary school education. This implies low literacy level.

Table 4.5 Education Level of the Respondents

Level of Education	*Frequency*	*Percentage*
Primary	49	34
Secondary school certificate	73	51
Diploma	9	6
Degree	13	9
Totals	**144**	**100**

4.4 Government Influence on Project Implementation

The response was as follows on the analysis of the governments influence;

4.4.1 Government Influence on Projects Implementation

Table 4.6 indicates the level of influence that the government has on the implementation of sanitation projects. 25% of the respondents indicated very low, 61% indicated low, 7% indicated fairly high, 1% indicated high while 6% indicated very high influence. Majority of the respondents clearly do not think that the government affects implementation in any way.

Table 4.6 Level of the Government Influence on Projects Implementation

Government influence on project implementation	*Frequency*
Very Low	36
Low Influence	88
Fairly High Influence	10
High Influence	2
Very High Influence	8
Total	**144**

4.4.2 Steps the Government has Taken Step to Solve Sanitation Problem

Based on the question if the government has taken enough steps to solve the sanitation problem, 14% of the total respondents indicated that government had taken enough steps to solve the sanitation issues in the slums. 86% of the total respondents stated that government did not help to solve the problems that the slum area was facing. From the analysis it can be concluded that government has not taken enough steps to solve the sanitation issues in the slums.

4.5 Availability of Funds

From the analysis of the influence of finance, the response was as follows;

4.5.1 Difficulties of implementing project as lack of funds

On whether it is difficult to implement projects due to lack of funds the response was as follows:

Table 4.7 Does availability of funds affects project implementation

	Frequency
Strongly Agree	18
Agree	88
Neutral	15
Disagree	20
Strongly Agree	3
Total	**144**

From Table 4.9, 13% of the total strongly agreed, 61% agreed, 10% percent were neutral, 14% disagreed while only 2% strongly disagreed. From the study it can be concluded that majority of the respondents think that availability of funds had an effect on the implementation of toilet projects in the Mukuru Kayaba slum.

4.6 Personnel expertise

From the analysis of the influence of personal expertise, the response was as follows;

4.6.1 Influence of Personnel Expertise

On whether personnel expertise affected project implementation, the response was as follows;

Table 4.8 Personnel Expertise Rating

Personnel expertise affect implementation	*Frequency*
Strongly Agree	30
Agree	69
Neutral	20
Disagree	20
Strongly Disagree	5
Total	**144**

Table 4.10 above indicates how personnel expertise affects sanitation project implementation. 21% strongly agreed, 48% agreed, 14% were neutral, 14% disagreed while 3% strongly disagreed. From the analysis it can be concluded that majority were of the opinion that the expertise of the implementers definitely affect project implementation.

4.6.2 Project implementers knowledge of the slum situation

On whether implementers are well versed in the slum situation, 43% of the respondents said that the implementers were well versed in the slum situation while 57% said that the implementers were not well versed in the slum situation. Hence a fairly high number of the slum dwellers think that the implementers are not well versed in the slum situation.

4.6.3 Skill level of Project Implementers

On whether the implementers have enough facilities and skills for success of projects, 65% of the respondents agreed while only 35% said that the project implementers lacked facilities and skills for successful sanitation project implementation

4.7 Community Participation

From the analysis of Community participation in project implementation, the response was as follows;

4.7.1 Involvement of the community in Project implementation

On whether the community members are involved in the implementation

Table 4.9 Community Participation in Project Implementation

Community participation in implementation	*Frequency*	*Percentage*
Yes	140	97
No	4	3
Total	**144**	**100**

Table 4.12 indicates how the respondents rated community participation. Based on the analysis, 97% of respondents said that the community is involved in project implementation while only 3% disagreed.

4.7.2 Consideration of Critical Issues Affecting Slum Dwellers by Project Implementers'

On the critical issues affecting slum dwellers, 75% of the respondents indicated that the issues affecting them were considered by the implementers while only 25% indicated that their views were not considered.

4.8 Qualitative Analysis

Qualitative research is designed to reveal a target audience's range of behavior and the perceptions that drive it with reference to specific the issues being investigated. It uses in-depth studies to guide and support the construction of hypotheses.

4.8.1 Government Policy

Majority of the respondents indicated that government policy affected the implementation of toilet projects in Mukuru Kayaba slums. The respondents indicated that the government policies and regulations especially in the existence of slum areas and their development are very stringent. Taxation and elaborate licensing, procedures were cited as some of the impediments to the implementation of toilet projects in Mukuru Kayaba slums.

4.8.2 Availability of funds

Majority of the respondents indicated that availability of funds affected the implementation of toilet projects in Mukuru Kayaba slum. The respondents indicated that the availability of funds during the implementation slowed down the progress. Some sponsors pulling out and unexpected expense were cited as some of the impediments to the implementation of toilet projects in the Mukuru Kayaba slum. Respondents indicated that funds were being sourced from different donors and not one particular source was being concentrated on. This they argued would ensure better flow of funds.

4.8.3 Personnel Expertise

Majority of the respondents indicated that the personnel expertise affected the implementation of toilet projects in Mukuru Kayaba slums. Respondents indicated that personnel expertise was a necessary tool in the implementation of toilet projects in the slums as this they thought, would lead to better performance by the staff, hence a higher chance of successful implementation

4.8.4 Stakeholder involvement

Majority of the respondents indicated that they were involved in the choice of the projects and that their views were considered in choosing a specific sanitation project. Most of the ideas actually came from the community based organization on what particular project to undertake. However in the planning, modification of project specification, implementation of the projects was carried out without much consultation from the community members. This was done by the implementers and some CBO officials.

4.9 Inferential Analysis

To quantify the strength of the relationship between the variables, the study used Karl Pearson's coefficient of correlation. It is a measure of linear relationship between two variables. It lies between -1 and 1. Pearson's co-efficient of correlation gives the knowledge about the direction of relationship whether it is positive or negative. This method also indicates the size of relationship between the variables i.e. correlation ranges between +1 and -1.It is an ideal measure of correlation because it is based on most important statistical measures like mean and standard deviation.

Table 4.10 Coefficient of Correlation

		Implementation of Sanitation Projects	*Availability of funds*	*Government influence*	*Stakeholder involvement*	*Personnel Expertise*
Implementation Of Sanitation Projects	Pearson Correlation	**1**				
	Sig. (2-tailed)					
Availability of funds	Pearson Correlation	.0230	1			
	Sig. (2-tailed)	.0024				
Government influence	Pearson Correlation	.3570	.3500	1		
	Sig. (2-tailed)	.0016	.0013			
Stakeholder involvement	Pearson Correlation	.2770	.1040	.0660	1	
	Sig. (2-tailed)	.0037	.0032	.0041		
Personnel Expertise	Pearson Correlation	.3210	.3560	.0000	.1880	1
	Sig. (2-tailed)	.0019	.0033	1.000	.0028	

Sig. - Significance

The Karl Pearson's coefficient of correlation (r) to study the correlation between the study variables and the findings. From the findings, it was clear that there was a positive correlation between project implementation and availability of funds as shown by a correlation figure of 0.23, it was also clear that there was a positive correlation between project implementation and government influences with a correlation figure of 0.327, it was also clear that there was also a positive correlation between project implementation and stakeholders involvement with a correlation value of 0.277 and a positive correlation between project implementation and organizational personnel expertise with a correlation value of 0.321. This shows that there was positive correlation between project implementation and availability of funds, government influences, stakeholders influences and personnel expertise.

In addition, a multiple regression analysis to determine factors affecting implementation of sanitation project and the four variables of the factors affecting implementation of sanitation project. The applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

Table 4.11: Coefficient of Determination (R^2)

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	.920	.846	.610	.80139

Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (project implementation) that is explained by all the four independent variables (availability of funds, government influences, stakeholders influences and personnel expertise).

Table 4.12: Multiple Regression Analysis

	Un standardized Coefficients		*Standardized Coefficients*		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.926	0.291		5.75	0
availability of funds	0.045	0.022	0.015	2.045	0.0044
government influences	0.586	0.159	0.541	3.686	0.0003
stakeholders influences	0.313	0.151	0.319	2.065	0.0032
personnel expertise	0.394	0.112	0.376	3.534	0.0011

The researcher conducted a multiple regression analysis so as to determine the relationship between the project implementation and the four variable factors. As per the SPSS generated table 4.16, the equation ($\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$) becomes:

$$\mathbf{Y= 0.926 + 0.045\chi_1 + 0.586\chi_2 + 0.313\chi_3 + 0.394\chi_4}$$

Where Y is the dependent variable (effective project implementation), X_1 is the effects of availability of funds independent variable, X_2 is government influences independent variable, X_3 is stakeholders influences independent variable, while X_4 is personnel expertise independent variable.

According to the regression equation established, taking all factors (availability of funds, government influences, stakeholders' influences and personnel expertise) constant at zero, the project implementation would be 0.926 or 92.6%. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in funds availability would lead to a 0.045 or 4.5% increase in sanitation project implementation. A unit increase in government influence would lead to a 0.586 or 5.86% increase in sanitation project implementation; a unit increase in stakeholders influence will lead to a 0.313 or 3.13 % success in sanitation project implementation, while a unit increase in personnel expertise will lead to a 0.394 or 3.94% increase in sanitation project implementation in slum area. This infers that government influence

contributes more to effective implementation of sanitation project followed by personnel expertise.

At 5% level of significance and 95% level of confidence, government influence had a 0.0003 level of significance, personnel expertise had a 0.0011 level of significance, innovation showed a 0.0032 level of significant; while availability of funds showed a 0.0044 level of significance hence the most significant factor influencing implementation of sanitation projects development.

CHAPTER FIVE
SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of the study is to analyze factors affecting the implementation of toilet projects in Mukuru Kayaba slums. This chapter presents findings of the study, conclusions and recommendations.

5.2 Summary of Findings

Majority of the respondents indicated that government policy affected the implementation of toilet projects in Mukuru Kayaba slums. The respondents indicated that the government policies and regulations especially in the development of slums was a hindrance to the freedom of investment. Taxation and elaborate licensing, procedures were cited as some of the impediments to the implementation of water sanitation and hygiene campaign in slums.

Majority of the respondents indicated that availability of funds affected the implementation of toilet projects in Mukuru Kayaba slums. The respondent indicated that the availability of funds during the implementation slowed down the progress. Some sponsors pulling out and unexpected expense were cited as some of the impediments to the implementation of sanitation and hygiene campaign in slums.

Majority of the respondents indicated that the personnel expertise affected the implementation of toilet projects in Mukuru Kayaba slums. Respondent indicated that expertise was a necessary tool in the implementation of toilet projects in Mukuru Kayaba slums. This they thought would lead to better performance by the staff. Adams in 1990 argues that the lack of trained operators and mechanics led to the repeated breakdowns in 1983-1984 in the Bura irrigation project. Majority of the respondents were of the opinion that planning had an effect on the implementation of toilet projects in Mukuru Kayaba slums. Respondent indicated that proper planning was vital in that it would greatly ease the implementation of the projects. Respondents indicated that good planning was necessary.

Based on the analysis 74% of the total respondents indicated that availability of funds had an effect on the implementation of toilet projects in Mukuru Kayaba slums, while 16% of the total

respondents stated that availability of funds had no effect on the implementation of toilet projects in Mukuru Kayaba slums, 10% of the respondents were neutral. From the study it can be concluded that availability of finances had an effect on the implementation of toilet projects in Mukuru Kayaba slums. Similarly, sanitation has not been linked to income generation and is therefore not sustainable after the life of the project.

Based on the analysis 69% of the total respondents indicated that personnel expertise had an effect on the implementation of toilet projects in Mukuru Kayaba slums, while 17% of the total respondents stated that personnel expertise did not affect the implementation of toilet projects in Mukuru Kayaba slums. From the study it can be concluded that personnel expertise had an effect on the implementation of toilet projects in Mukuru Kayaba slums.

5.3 Discussion of findings

Majority of the respondents indicated that government policy affected the implementation of toilet projects in Mukuru Kayaba slums. The respondents indicated that the government policies and regulations especially in the existence of slum areas and their development are very stringent. Taxation and elaborate licensing, procedures, lack of enforcement of laws in the area were cited as some of the impediments to the implementation of toilet projects in Mukuru Kayaba slums. This concurs with other studies that have been previously conducted by other researchers in slum areas.

Majority of the respondents indicated that availability of funds affected the implementation of toilet projects in Mukuru Kayaba slum. The respondents indicated that the availability of funds during the implementation slowed down the progress. Some sponsors pulling out and unexpected expense were cited as some of the impediments to the implementation of toilet projects in the Mukuru Kayaba slum. Respondents indicated that funds were being sourced from different donors and not one particular source was being concentrated on. This they argued would ensure better flow of funds. NETWAS, in 2010 carried out a study of the slum and established that there are poorly established latrines in dilapidated structures which have cracked stone floors, rusty sheets of iron for walls and roofs made up of torn plastic and cartons. This is because they

have no financial means to acquire toilets that are professionally or formally surveyed, built and serviced.

Personnel expertise also affected the implementation of toilet projects in Mukuru Kayaba slums. Respondents indicated that personnel expertise was a necessary tool in the implementation of toilet projects in the slums as this they thought, would lead to better performance by the staff, hence a higher chance of successful implementation. Inclusion of urban poor within waste management projects will certainly help them to keep their households and neighborhoods clean and will have positive impact on improving environmental health and financial condition. Most project implementers fail to conduct public education on proper disposal and use of sanitation services therefore leading to the misuse and abuse of the toilets in the slum areas.

Most projects aimed to be implemented in slum areas are not properly funded by donors. This is because donors fail to see the importance of these projects in terms of return of investment. Therefore, due to underfunding, these projects do not get the best in terms of personnel and human resources. This results in projects which are not expertly done and implemented.

Majority of the respondents indicated that they were involved in the choice of the projects and that their views were considered in choosing a specific sanitation project. Most of the ideas actually came from the community based organization on what particular project to undertake. However in the planning, modification of project specification, implementation of the projects was carried out without much consultation from the community members. This was done by the implementers and some CBO officials.

5.4 Conclusions

The study findings indicate that there are many factors that affect the implementation of toilet projects in Mukuru Kayaba slums. These factors alone may not help provide quick fix solutions to the pertinent issues surrounding this project; however, when these study factors are critically analyzed independently, the relationship between these variables begin to provide some relative framework that provokes thought. The skillfully articulated schematic presentation enabled the research to interrogate the specified objectives and make inferences.

It was quite evident as stated by the majority of the respondents that when a project fails, it would be partly due to poor government policies, unavailability of funds, lack of expertise, and poor planning. Effective implementation of toilet projects in Mukuru Kayaba slums can mean better sanitation in slums due to better waste management. It is in this regard that research acknowledged its limits and further encourages comparative studies.

5.5 Recommendations

Based on the study findings the following recommendations were made:

5.5.1 Government Policy

The study recommended that the government institute a participatory regulatory framework that encompasses all stakeholders in the industry. Further, slum policies should be integrated with broader, people-focused urban poverty reduction policies that deal with the varied aspects of poverty, including employment and incomes, shelter, food, health, education and access to basic urban infrastructure and services.

Official reluctance to acknowledge the slum settlements is reflected in laws governing the Nairobi City Council, a key provider of sanitation services, which do not allow it to work with informal settlements. It is recommended that these laws, which pre-date independence in 1963, are obsolete and need to be revised so that officials can address current trends and plan for slum areas.

5.5.2 Availability of Funds

More organizations and individuals should come out and help campaigns that are helping the society. This would enable the organization to have more campaigns and help towards a better society.

There is need for the private sector, government and civil society organisations to work together in accessing funds in order to improve the lives of all those living in slum areas.

Programmes such as the government initiated Kenya Slum Upgrading Programme (KENSUP) to address sanitation in informal settlements should be encouraged. This project is being run jointly with the United Nations Human Settlements Programme.

It is recommended that slum toilet projects should be run by the communities themselves. Well run toilet projects would help contain poverty in the slums as they would be managed by self help groups in the respective settlements. Community projects will help empower the inhabitants in these places because they will also be used for generating income.

5.5.3 Personnel Expertise

When one is more aware of what they are supposed to do, they will do it better than if they are assuming what is right. Training should be encouraged in all organizations so as provide better performance and also keep the staff up to date.

Toilet project implementers should also consider the resident's situation when deciding on the charges for using the toilets. Residents have to pay a fee of between 2 to 5 shillings to use the toilet, and bathrooms. According to official statistics, 56 percent of Kenyans live on less than a dollar a day.

Personnel fail to take into account all the factors affecting the slum dwellers before implementing the toilet projects. Some of these factors include cultural practices that could prevent them from using the toilets or finances or lack of it. Personnel expertise should be employed in conducting research on the area where the project is to be implemented thereby reducing the incidences of factors that could prevent the toilet users from effectively using them.

5.5.4 Community Participation

At the project implementation level, better planning of projects would greatly improve the implementation of toilet projects in the slum areas.

Better urban management would result on less pressure on urban centers particularly in essential service delivery sectors. At the core of efforts to improve the environmental habitability of slums and enhance economically productive activities is the need to invest in infrastructure – to provide water and sanitation, electricity, access roads, footpaths and waste management.

Low-income housing and slum-upgrading policies need to pay attention to the financing of citywide infrastructure development. Having said that, however, the main focus of policy makers must be on poverty reduction and the up-grading of slum communities.

5.6 Suggestions for Further Research

Implementation of toilet projects in Mukuru Kayaba slums is not the first nor is it the last of its kind. More and more organizations are aiming to undertake such projects in the various slums around the world in order to boost the standards of living of the residents. There still exist enormous gaps that require extensive research and in-depth analysis on what should be the optimum outcome of this project.

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APPENDICES

Appendix I: Introduction letter

Brian Otieno Odhiambo

P.O Box 23192-00100

Nairobi

Dear respondent

Re: Collection of Survey Data

I am a postgraduate student at the University of Nairobi, school of Continuing and Distance education. In order to fulfill the degree requirement, I am undertaking a research project on the factors that affect the implementation of sanitation projects in slum areas in Kenya, a study of Mukuru Kayaba slums. You have been selected to form part of this study. This is kindly to request you to assist me collect the data by filling out the accompanying questionnaires, which I will collect from your premises

The information you provide will be used exclusively for academic purposes .My supervisor and i assure you that the information will be treated with strict confidence. Your name appear in my report, a copy of this final paper will be availed to you upon request

I thank you in advance for your cooperation

Yours faithfully

Brian Odhiambo

MA Project Management student

University of Nairobi

Appendix III: List of interview questions for the project managers

1. What project management tools were used in planning schedules?
2. Was the project time allocated realistic?
3. If NO, what were the major causes of delay?
4. Were you involved in the planning phase of the project?
5. Do you think it is important to involve all the stakeholders in the planning of sanitation projects?
6. What drawbacks do you encounter in implementation of the projects
7. What other factors do you think cause delays in implementation of sanitation projects?

Appendix IV: Questionnaire

Disclaimer;

This questionnaire is a survey to collect information on the factors that affect the implementation of sanitation projects in the slum areas in Kenya.

NB: Kindly fill in all the blank spaces provided and tick / circle ( ) where appropriate.

Date……..

PART A- Personal details

Please append a tick where appropriate

1) Gender

a. Male ☐

b. female ☐

2) Age bracket

a. Less than 20 years ☐

b. 20-25 years ☐

c. 26-30 years ☐

d. 31-35 years ☐

e. 36-45 years ☐

f. Above 46 years ☐

1. How long have you been living in Mukuru Kayaba?

a. Less than 1 year ☐

b. 1-2 years ☐

c. 3-4 years ☐

d. 5-6 years ☐

e. Over 7 years ☐

4. Marital status

a) Single ☐

b) Married ☐

c) Divorced ☐

d) Widowed ☐

5. What is your academic qualifications ☐

a) Degree

b) Diploma ☐

c) Secondary School Certificate ☐

d) Primary School Certificate ☐

e) Other ☐

PART B- Availability of funds

1. In your opinion, how do you view the current funding of sanitation projects in Mukuru Kayaba slums?

2. It is difficult to implement sanitation projects due to lack of funds. To what extent do you agree with this statement?

a) Strongly Agree

b) Agree

c) Neutral

d) Disagree

e) Strongly disagree

3. Please indicate in your opinion the extent of how the following ways are used by the project to raise funds

	1	2	3	4	5

Members contribution					
Government					
Use of loans from banks					
Donors					
NGO's					
Other institutions					

PART B- Government influence

1. Do you think the government has taken enough steps to solve the toilet and sanitation problems in Mukuru Kayaba?

   a) Yes

   b) No

2. What do you think the government should do to solve the sanitation problems in this area?

3. Do you think that proper planning by the government will solve the inaccessibility problem in Mukuru Slums?

   a) Yes

   b) No

4. Please indicate the level of influence that the government have on project implementation

   a) Very low influence

   b) Low influence

c) Fairly High influence

d) High influence

e) Very high influence

PART C- Stakeholder involvement

1. Are community members involved in project implementation?

   a) Yes

   b) No

2. Do you think the project implementers take into account the various issues affecting the slum dwellers?

   a) Yes

   b) No

3. Please indicate the level of influence of the community on the following aspects of project management

	Very low	**Low**	**Fairly High**	**High**	**Very High**
Choice of projects					
Planning of projects					
Modification of project specifications					
Implementation					
Evaluation of projects					

PART D- Personnel Expertise

1. Do you consider the implementers well versed with the situation of the slum area?
    a. Yes
    b. No
2. Do you think that the project implementers have enough facilities and skills to guarantee the success of the toilet project?
3. Do you think personnel expertise affect implementation of sanitation projects in Mukuru Kayaba slums?
    a) Strongly Agree
    b) Agree
    c) Neutral
    d) Disagree
    e) Strongly disagree

PART E: FOR PROJECT IMPLEMENTORS

1. Name of the project.....
2. Designation of Respondent.....
3. Experience of respondent prior to this project assignment (years).....
4. Estimated time duration for the project (in weeks).....
5. Actual duration of the project (in weeks).....
6. Number of critical activities.....

a) Were there any delays? .....

b) If yes, what were the reasons for the delay?

7. Was the initial estimated cost exceeded? Yes/No

8. If yes what do you think was the major causes for this escalation in project cost?

9. What do you consider to be the main challenges facing the implementation of sanitation projects in Mukuru Kayaba? Kindly list

10. How important are the following factors in determining successful project implementation

	1	2	3	4	5
Government regulations					
Personnel expertise					
Community involvement					
Availability of funds					

Key: 1- Unimportant

5-Very Important