FACTORS INFLUENCING THE SUSTAINABILITY OF COMMUNITY BASED WATER PROJECTS IN TANZANIA: A CASE OF ILALA MUNICIPAL, DAR ES SALAAM REGION

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation titled: **"*Factors Influencing the Sustainability of Community Based Water Projects in Tanzania: A Case of Ilala Municipal, Dar es Salaam Region",*** in partial fulfillment of the requirements for the degree of Master of Project Management (MPM) of the Open University of Tanzania.

……..

Dr. Salvio Macha

(Supervisor)

……..…

Date

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DECLARATION

I, **Yiniko Msuku,** do hereby declare that this dissertation is my own original work and it has not been presented for a similar or any other award to any other University.

…….

Signature

…….

Date

DEDICATION

This dissertation work is dedicated to my late father who had been encouraging and motivating me to study further.

ACKNOWLEDGEMENT

Firstly I would like to sincerely thank God for granting me life and abundant health that enabled me to accomplish my studies. I wish to acknowledge the helpful contribution of my fellow students and University instructors for their helpful support in my studies.

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ABSTRACT

This study was carried out to assess factors influencing sustainability of community based water project in Dar es Salaam. The specific objectives were to determine the extent to which community participation influences sustainability of community based water project at Ilala municipal, to find out the extent to which skills of water management committee influences sustainability of community based water projects in Ilala municipal and to establish the extent to which monitoring and evaluation influences sustainability of community based water project at Ilala municipal. Descriptive survey design was employed in this study whereby simple random sampling was used to select respondents. Correlation and multiple regression analysis were used to show the relationship between study variables as being the independent on the dependent variable. Findings of the study showed that all three study hypotheses are positive and significant statistically on sustainability of community based water projects as the dependent variable. This entails the fact that sustainability of community based water projects is influenced by community participation, skills of water management committee and monitoring and evaluation. It is concluded that sustainability of community based water projects in Tanzania is indeed facilitated by community participation, skills of water management committee and monitoring and evaluation as independent variables. Since the situation on sustainability of community based water supply system is limited regardless of several projects in place, the study recommends that first on water infrastructures the government must well invest in designing and set new water infrastructures both in urban and rural settings.

Keywords: Sustainability, Community and Water Project

TABLE OF CONTENTS

CERTIFICATION ..... **ii**

COPYRIGHT ..... **iii**

DECLARATION ..... **iv**

DEDICATION ..... **v**

ACKNOWLEDGEMENT ..... **vi**

ABSTRACT ..... **vii**

LIST OFTABLES ..... **xii**

LIST OF FIGURES ..... **xiii**

LIST OF ABBREVIATIONS ..... **xiv**

CHAPTER ONE **1**

INTRODUCTION **1**

1.1 Chapter Overview 1

1.2 Background to the Research Problem 1

1.3 Statement of the Problem 3

1.4 Objectives of the Study 5

1.4.1 Main Objective 5

1.4.2 Specific Objectives 5

1.5 Research Questions 5

1.6 Significance of the Study 5

1.7 Scope of the Study 6

CHAPTER TWO **7**

LITERATURE REVIEW **7**

2.1 Chapter Overview 7

2.2 Definition of Key Terms 7
2.2.1 Water 7
2.2.2 Community 7
2.2.3 Community Based Projects 8
2.2.4 Project Sustainability 8
2.3 Theoretical Literature Review 9
2.3.1 Related Theories 9
2.3.1.1 The Participatory Theory 9
2.3.1.2 Resource-Based Theory 11
2.3.2 Sustainability Dimensions for Water Projects 12
2.4 Empirical Literature Review 13
2.5 Research Gap 20
2.6 Conceptual Framework 21
CHAPTER THREE 22
RESEARCH METHODOLOGY 22
3.1 Chapter Overview 22
3.2 Study Paradigm (Philosophy) 22
3.3 Research Design 22
3.4 Area of the Study 23
3.5 Population of the Study 23
3.6 Sample and Sampling Techniques 23
3.6.1 Sample Size 23
3.6.2 Sampling Techniques 24
3.7 Types of Data 25

3.7.1 Primary Data 25

3.7.2 Secondary Data 25

3.8 Data Collection Methods 26

3.8.1 Questionnaires 26

3.8.2 Documentary Review 26

3.9 Reliability and Validity of Data 27

3.10 Data Analysis 28

3.11 Assumption of Econometric Theory 29

3.12 Ethical Consideration 31

CHAPTER FOUR 32

FINDINGS, ANALYSIS AND DISCUSSION 32

4.1 Introduction 32

4.2 Response Rate 32

4.3 Respondents Characteristics 32

4.3.1 Age of Respondents 33

4.3.2 Gender of Respondents 34

4.3.3 The Level of Education 34

4.4 Findings, Analysis and Discussion as per Study Hypotheses 36

4.4.1 Mean and Standard Deviation 36

4.4.2 Correlation and Multiple Regression 37

4.4.2.1 Correlation Analysis 38

4.4.2.2 Multiple Regression Analysis 39

4.5 Discussion of the Study Findings 40

4.5.1 Community Participation and Sustainability of Community Based Water Projects 40

4.5.2 Skills of Water Management Committee and Sustainability of Community Based Water Projects 41

4.5.3 Monitoring and Evaluation and Sustainability of Community Based Water Projects 41

CHAPTER FIVE 43

SUMMARY, CONCLUSION AND RECOMMENDATIONS 43

5.1 Introduction 43

5.2 Summary 43

5.3 Conclusion 44

5.4 Recommendations 44

REFERENCES 46

APPENDICES 52

LIST OFTABLES

Table 3.1: Sample Size Distribution 24

Table 3.2: Cronbach Alpha Test 27

Table 4.1: Age of Respondents 33

Table 4.2: Gender of Respondents 34

Table 4.3: Level of Education 35

Table 4.4: Mean and Standard Deviation 36

Table 4.5: Model Summary 37

Table 4.6: Correlation Analysis 38

Table 4.7: Multiple Regression Analysis 39

LIST OF FIGURES

Figure 2.1: Conceptual Framework 21

LIST OF ABBREVIATIONS

CBOs	Community Based Organizations
CBPs	Community Based Psychosocial
DAWASA	Dar es Salaam Water and Sewerage Authority
MDGs	Millennium Development Goals
NGOs	Non Governmental Organizations
RBV	Resources Based View
SPSS	Statistical Package for Social Science
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees

CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

Projects are designed and implemented to meet specific goals and achieve desired change (Ong'wen, 2014). Ochelle (2012) describes a project as a set of coordinated activities with a specific start and finish time, pursuing a specific goal with constraints on time, scope and resources. Some projects require that their activities be sustained over time to ensure continued flow of outputs and hence achievement of the desired change which could be social, cultural or economic. Therefore, the purpose of this study is to assess factors influencing sustainability of community based water project in Dar es Salaam. This chapter entails various components, which are background to the research problem, statement of the problem, research objectives, research questions, significance of the study and scope of the study.

1.2 Background to the Research Problem

Project sustainability is the ability of adopted projects to maintain their intended operations, services and benefits during the anticipated project life cycle (Ngetich, 2013). Therefore, project sustainability focuses towards the creation projects that are capable of continuously generating benefits even after external donor inputs have been withheld (Rimbera, 2013). Sustainable development is a concept that is used in our daily talks but difficult to define. The Brunt land Commission memorably defined it in its 1987 report (Our Common Future) as development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Most authors perceive Sustainable Community Based Development

Project differently (Githinji, 2015). Roy (2013) viewed development as for the people and by the people. His argument was that, the essence of sustainable development is determined by the people, which can be attributed to change of peoples' attitudes, leading to a change in their habits.

According to UNHCR, 2016 report, most of Community Based Projects in developed countries have long life cycle because they have well developed systems of monitoring project implementation (Persoon, 2017). About 40 percent of many new projects fall short of life after first few years since the termination of initial fund (Fabietti and Giovannoni, 2017).

Implementation of most projects may be successful but their sustainability may be a challenge (Marobolo, 2016). Water is the most important natural resource, indispensable for life and at the same time the backbone for growth and prosperity for mankind (Gathiru, 2014). The General Assembly of the United Nations drew critical attention to the importance of water to sustainable development and poverty alleviation by declaring 2003 The International year of Fresh water with one of its aims being to reassert the Millennium Development Goals (MDGs) target for water of reducing by half the proportion of people without the access to safe drinking water and stop the unsustainable exploitation of water resources (Nyamu, 2015).

Despite there being a universal recognition for the importance of safe water in poverty alleviation and socio-economic development globally, the access to safe drinking water remains low and this is attributed to many water supply systems not being

sustainable (Yahaya, 2014). Smith and Marin (2017) state that, worldwide, about two million people struggle daily for access to safe and sufficient water. In the entire world, Africa is the region that suffers most from inadequate access to water supply with only 62% of its population having access to potable water supply. Furthermore, 55 of the countries in the world whose domestic water supply is below 50 litres per capita per day, 35 of them are in Africa (Munyao, 2017).

In Dar es Salaam, there are total of 280 water schemes, among them 36 schemes are disengaged because DAWASA has connected the areas with a normal water supply system; so now they have remained 244 water schemes, among them only 189 are functioning and 91 water schemes are not functioning. (DAWASA Annual Performance Report, 2019/20). Some of the CBPs which has not sustain includes; wells and boreholes conducted in Matumbatu village, Dodoma which was financed by International donor Agencies. The question of its sustainability was due to poor technology choice, poor supervision and lack of expertise and experience (International Project Leadership Academy Report, 2016). Therefore, the purpose of this study is to assess factors influencing sustainability of community based water project in Dar es Salaam.

1.3 Statement of the Problem

Water plays a significant role in all realms of the human development and provision of clean and adequate water as universally provided in the Millennium Development Goal remain a key challenge to governments and development partners (Gathiru, 2014). Adequate domestic water supply is necessary for productive life among

residents in Dar es Salaam. However, majority of residents of Dar es Salaam region have been experiencing acute water shortage due to limited water supply mechanisms in their community since independence. These shortages have exposed local communities to vulnerability to threats such as water borne disease, waste of time and distance finding water and therefore affect local productivity.

In order to address this problem in 2002 the Dar Es Salaam Water and Sewerage Authority (DAWASA) implemented water supply project. However, the project ceased operating few years later and later on, the project was re-established in 2007/2008 (Ponera, 2017). Despite several studies have been conducted in Tanzania with regard to the community based water projects, but have failed to establish factors influencing sustainability of community based water projects in Dar Es Salaam. For example, Temba (2015) assessed the role of stakeholder's participation on sustainability of donor funded project in Tanga, however the study ignored the factors influencing sustainability of community based water projects in Dar Es Salaam. Kayaga (2015) examined the role of monitoring and evaluation in improving sustainability of water projects in Bagamoyo district, Pwani Region leaving behind the factors that could influence sustainability of water based projects and Mrangu (2018) assessed factors affecting sustainability of community based projects in rural areas in Bagamoyo district, Tanzania.

Therefore, this study has been an attempt to fill that gap and establish knowledge to inform better practices regarding factors influencing sustainability of community based water projects in Dar Es Salaam.

1.4 Objectives of the Study

1.4.1 Main Objective

The general objective of the study was to assess factors influencing sustainability of community based water project in Dar es Salaam.

1.4.2 Specific Objectives

(i) To determine out the extent to which community participation influences sustainability of community based water project at Ilala municipal

(ii) To find out the extent to which skills of water management committee influences sustainability of community based water project at Ilala municipal

(iii) To establish the extent to which monitoring and evaluation influences sustainability of community based water project at Ilala municipal

1.5 Research Questions

(i) To what extent does community participation influences sustainability of community based water project at Ilala municipal?

(ii) To what extent do skills of water management committee influences sustainability of community based water project at Ilala municipal?

(iii) To what extent does monitoring and evaluation influences sustainability of community based water project at Ilala municipal?

1.6 Significance of the Study

The study findings of this research are useful since they establish factors influencing sustainability of community based projects since many studies have come across to the factors affecting sustainability of community based projects particularly in rural

areas. The study also assists policy makers in policy selection and decision making as through it, they are able to understand well factors influencing sustainability of community based projects particularly in water projects.

Furthermore this study contributes more to the library of knowledge especially by updating already available information since the study includes current statistics which are unavailable in other studies. Lastly, the study also helps researcher to gain knowledge and understanding in attainment of the partial fulfillment of the requirements for the award of a Master's Degree in Project Management (MPM).

1.7 Scope of the Study

This study was confined to assess factors influencing sustainability of community based water project in Dar es Salaam specifically in Ilala Municipal. There are so many factors that influence sustainability of community based water project, but this study restricted to community participation, skills of water management committee and monitoring and evaluation on the sustainability of community based water project.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Overview

Literature review is very important in any social science research. Therefore, this chapter presents literature review of the study. It involves definition of key terms, theoretical literature review followed by empirical literature review, research gap knowledge and then conceptual framework.

2.2 Definition of Key Terms

2.2.1 Water

Water is a natural resource that is necessary for sustenance of life, ecological systems and a key resource to social and economic development (Samuel, 2016). Governments, Non-governmental organizations, local and international organizations from all over the world have implemented water projects to promote safe water supply and sanitation over the years (Gathiru, 2014).

2.2.2 Community

A community refers to a social group of organisms sharing an environment, normally with shared interests. There are three types of community: community of place, community of interest and community of persons organizing around a particular issue on an ad hoc basis (Nyamu, 2015). This study is mainly concerned about the community of place and the term will therefore be used as such in the rest of the document.

2.2.3 Community Based Projects

These are projects undertaken with and for the community and are addressing their interest, local needs and aspirations. These are projects where the local people play an active role in them (Tafara, 2013). Similarly, Oino (2015) explains Community Based Projects (CBPs) are core initiatives for intervention of common problems while enhancing development in most communities. With this in mind, different projects are formulated and carried every year with different purposes such as ensuring clean water supply, improving community health, reducing poverty, promoting human rights and peace, managing natural resources, climate change adaptation and many more.

2.2.4 Project Sustainability

Project sustainability is the ability of adopted projects to maintain their intended operations, services and benefits during the anticipated project life cycle (Ngetich, 2013). Therefore, project sustainability focuses towards the creation projects that are capable of continuously generating benefits even after external donor inputs have been withheld (Rimbera, 2013).

Sustainability is generally based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations (Samuel, 2016). Sustainability is important to making sure that we have and will continue to have, the

water, materials, and resources to protect human health and our environment. CBOs need to have sustainability of their projects in all areas they exist (Tifow, 2013).

2.3 Theoretical Literature Review

2.3.1 Related Theories

The purpose of theoretical literature review is based on the review of theories related to the study. Therefore, for the purpose of this study, participatory theory and resources based theory will be used.

2.3.1.1 The Participatory Theory

The theory has been defined by different scholar in the light of project and program development. According to Jennings (2005) participation is the total involvement by a local population and at times, addition stakeholders in the creation, content and conduct a program or policy designed to change their lives, built on the belief that, citizens can be trusted to shape their own future. So participatory development always makes use of local communities' decision making and capacities to guide and define the nature of an intervention. Jennings added that, participatory requires recognition and much use of local capacities and avoids the imposition of priorities from the outside. It increases the odds that, the program will be on target and its results will be more sustainable.

Reid (2005) as cited in Kayaga (2015) notes that, community participation is one of the key ingredients of an empowered community as is the heart that pumps the community's life blood into the community business. So it is more wisely for project

management to in cooperate local community in project implementation so as to realize sustainability. There are principles, which should be adhered by the project management as it is of participation at any level of community. Duraiappah *et al* (2005) presented six principles with regard to effective participation as follows:

Inclusion: It refers to the involvement of all people or representative of all groups who will be affected either direct or indirect by the projects outputs and outcomes. **Equal partnership:** Here is when every person has skills, ability and initiative and has equal right to participate in the process regardless of their status.

Transparency: All participants of the project must help to create the environment conducive to open communication and building dialogue.

Sharing power: All authority and power must be balanced equally between major stakeholders so as to avoid the domination of one party. Sharing responsibility: All Stakeholders must have equal responsibility for decisions that are made within the Project.

Empowerment: Participants with special skills should be encouraged to take responsibility also to motivate others so as to promote mutual learning and empowerment.

Co-operation: It involves sharing everybody's strength for the purpose of reducing people's weaknesses. So these Principles for effective participation can be applied to all aspects of the development processor projects aiming at creating the environment for sustainability.

The Importance of Participatory Theory in this Study

The importance of participatory theory in this study lies on the fact that, in order to ensure the sustainability of community based projects, the local community should be highly engaged since they are the ones who surround the projects that exist within their local areas.

2.3.1.2 Resource-Based Theory

Resource-based theory has been developed to understand how organizations achieve sustainable competitive advantages. In order for an organization to compete in the global market, there is need to develop new business strategies and employ new technologies (Camison, 2005). A better understanding of the ways to adopt and implement new technologies like information technology is necessary due to their short life cycle which increases the changing cost of using the Information Technology (Barney, 1995).

According to resource-based theory, competitive advantage occurs only when there is a situation of resource heterogeneity (different resources across firms) and resource immobility (the inability of competing firms to obtain resources from other firms) (Barney, 1995). The resource-based view (RBV) argues that firms possess resources, a subset of which enables them to achieve competitive advantage, and a subset of those that lead to superior long-term performance. Resources that are valuable and rare can lead to the creation of competitive advantage. That advantage can be sustained over longer time periods to the extent that the firm is able to protect against resource limitation, transfer, or substitution. In general, empirical studies using the theory have strongly supported the resource-based view.

As Hoopes *et al*, (2003) explain, the essence of a resource-based theory is that given resource heterogeneity and resource immobility and satisfaction of the requirement of value, rareness, imperfect imitability, and non-substitutability, firms' resources can be a source of sustained competitive advantage. Resource based theory treats as potential creators of value- added capabilities. Understanding the development of such capabilities and competences involves viewing the assets and resources of the firm from a knowledge-based perspective.

The Importance of Resources Based Theory in this Study

The sustainability of community based water projects depend on various resources such as manpower and financial rescores so as to maintain the sustainability of such project. For example, engage local communities to ensure these projects continue to survive will enhance the sustainability of projects, or using financial support to support the projects, for example to make repairing, will enhance the sustainability of the projects.

2.3.2 Sustainability Dimensions for Water Projects

Basing on the objectives set by stakeholders of the project, there are different views of looking at the sustainability aspect of the project. According to Bhattarai *et al* (2008) Sustainability aspect of the project is viewed as an amalgam of Technical, Social and Economic, Financial and Institutional criteria's, so the project is evaluated while basing on the above criteria's for their sustainability. On the other hand, in connection to water project sustainability, Harvey and Reeds (2004), identify major eight sustainability factors, these factors are presented as building blocks and includes, policy context, institutional arrangements, financial and economic issues, community

and social aspects, technology and natural environment, spare parts supply, maintenance, and monitoring. For each of these factors, issues relating to planning, effective demand, financing and management are explored along the guidance for addressing sustainability.

Carter *et al* (2009), offers the ‘‘Sustainability chain’’ consisting of Motivation, cost recovery and a continuing support as a means to evaluate and sustain water and sanitation supplies in developing countries. In the light of water point’s sustainability, the NAWAPO (2012) in Kayaga (2015) identifies major seven, interrelated components in which sustainability of water projects depends on all of them, and the program should not only consider them but also put them into practice. They includes, Management at the lowest appropriate level, Communities owning and managing their water schemes, Availability of spare parts and technical knowhow, Full cost recovery for operation and maintenance of water schemes, The protection of water sources, Balancing between the technology, service level and the capacity of the beneficiaries, and lastly the recognition of women as the key players and the inclusion of the poor.

2.4 Empirical Literature Review

Tadesse, *et.al* (2013) conducted study titled rural water supply management and sustainability with reference central Ethiopia. The study assesses the important of community participation in water project whereas qualitative and quantitative methods are used to collect data. The findings indicated that the community participation in planning and implementation was very good while monitoring mechanism of operation and management as well as community participation on choice of

technology was poor. The findings also reveal that there is lack of control mechanisms in monitoring and evaluation of water project lead the poor management of water projects properly for its sustainability.

The study by Sakala (2016) was taken to establish factors, which influence sustainability of boreholes managed by communities in Chadiza district. The study used both primary and secondary data. Primary data was collected using the interview schedule, focus group discussions and an oral interview. Secondary data was sourced from processed data from the Local Authority, the internet, books, reports, articles and journals related to community participation in the implementation of water projects. The study showed that, community participation at initial stage of construction instills the spirit of self-reliance in the community members throughout the project cycle. The communities perceived community contribution as a positive way to sustainability of boreholes as it symbolized ownership and hence the authority to make decisions related to water. The communities which had trained water committees did not have problems with contributions and hence maintenance of the boreholes, as compared to those whose water committees were not trained.

Samuel (2016) assessed evaluation of factors influencing sustainability of water projects in Gahondo, Rwanda. The study employed descriptive survey design. The target population of this study was 140 household. Simple random sampling was used in this study. Through random sampling 103 household were selected for the study. Primary data for the study was collected using structured questionnaires that were administered to the respondents by the researcher. Data collected was edited, coded

and analyzed using SPSS. Findings were presented using tables. The findings of the study indicated that community participation, project financing, project management practices and community training do influence sustainability of community water projects. It was also found out that the accountability and transparency among the committee members who manage the water resources is also a key factor, which influences sustainability. If there is a perceived lack of transparency and accountability, community members tend to withdraw their support for the water projects. The study recommends that community participation in the whole project cycle should be enhanced, there should be high level of transparency and accountability in the management of water projects, donors should have adequate budgets for any water projects designed for implementation and organizations should strongly support monitoring and evaluation of their water projects beside ensuring that community responsible for management and operation of water projects are well trained in operation and maintenance

The research by Githinji (2013) was set out to find out factors that affect the sustainability of CBPs in Mutomo District of Kitui County. The research took the form of descriptive analysis and both qualitative and quantitative data were collected. The target populations were CBPs managers, project donors and facilitators and the projects beneficiaries. The respondents were selected through both purposeful and random sampling. Both the finding of the literature and the quantitative and qualitative results were analyzed with the aid of SPSS software. The study found that, the greatest factor affecting the sustainability of the community based projects lies with the controllers and implementers. This was followed by geographical factors and

finally the community. The main controllers and implementers were identified as the donors, CBOs and NGOs. These carry the greatest impact on the sustainability of the CBPs. Geographical factors highlighted include natural resources and the environment. The most dominant role played by the community was security and provision of human resources to the CBPs. These answered the concerns raised regarding the factors affecting sustainability of CBPs in the study area.

Tifow (2013) made investigation on factors that moderate the effect of various community capacity development efforts to enhance sustainability of community based and managed rural water supplies in Kenya. A descriptive sample survey of 777WASH Committees and household representatives' from 259 rural water facilities in 3 districts- Kisumu and Siaya in Nyanza and Busia district in Western Province of Kenya were surveyed. A 10% sample using stratified random sampling was used to select respondents. Data was collected by the use of questionnaire method using two sets of questionnaires, one each of the water management committee members and the other for households. The participation of women groups and community leaders is desirable for achieving sustainability. More importantly, both men and women were found to be involved in decision-making on water at the household. This finding suggests changing attitudes on gender based role assignments at the household where decisions on water at the household were traditionally associated with women and girls. The increased participation of men in household water management has significant implications for enhancing future sustainability of rural water supplies. More importantly the study shows sustainability is a sector issue requiring interdependent actions of many stakeholders at all levels including national and

regional governments, the private sector, development partners and the community itself.

Similarly, the purpose of the study by Marobolo (2016) was to examine the factors that influences programme sustainability of organizations for persons with disability in Kenya with a case of Kenya Society for the Blind. The researcher used descriptive research design in the attempts to describe the relationship between the various identified factors and project sustainability. The target population was all the employees of Kenya Society for the Blind involved in project implementation as well as community members who have previously benefited from the society.

The study consequently used a sample size of 20% from every employee sub-category involved in project implementation. The researcher used primary data collected via the use of structured questionnaires. The researcher also collected qualitative data from the field via the usage of interview guides. The study found out that systemic collection of project data improves on external and internal accountability of invested resources translating to the realization of planned activities hence positively influencing sustainability, community involvement in project implementation benefits the intended projects since all stakeholders will be willing to mobilize resources thus ensuring project continuity leading to sustainability, monitoring and evaluation affects programme sustainability at the Kenya Society for the Blind and the incorporation of sustainable thinking in community development projects ensures continuity of these projects hence enabling local communities to reap social benefits even after such projects are completed.

The study concluded that project managers with good management skills are regarded as good leaders, internal accountability of invested resources translates to the realization of planned activities, monitoring assesses progress and project objectivity if current project phase is on course leading to the detection of deviation from set plan and rectification, community participation has a great positive effect on programme sustainability and incorporation of sustainable thinking in community development.

Tafara (2013) assessed factors influencing sustainability of community based water projects so as to make an appropriate recommendation for enhancing sustainability of water projects especially in a rural setting of the Mtito Andei. This study employed descriptive survey. The study population constituted of the household heads. The respondents were reached through household survey and purposive identification of the subject matter or key informants across relevant local institutions. The study used a combination of both probability and non-probability sampling techniques. This study collected quantitative data using a questionnaire from the respondents.

The data was analyzed using descriptive statistics generated from statistical tools (SPSS V.17.0 and Excel). From the findings, the study revealed that the level of stakeholders' participation in the water projects was low which affected the sustainability of water project. The stakeholders' participation was critical in the implementation of the water projects. Stakeholders were involved in the water project through contribution of funds/other resources, through designing and in management. The stakeholders' participation positively enhanced the sustainability of the rural community based water projects to a great extent.

Kayaga (2015) conducted a study on the role of monitoring and evaluation in improving sustainability in water projects Bagamoyo district, Pwani Region. Both quantitative data obtained through prepared questionnaires and qualitative data from interviews done with villagers, district officials and village government members were used together with documentary evidences. Findings of the study showed that the most applied monitoring and evaluation practices in water projects is field visit and meeting. It well known that regular monitoring and evaluation can help track any intervening changes in many CBPs, even though the research above has revealed that there is little consideration of monitoring and evaluation of water projects in the district, therefore this study engages more findings on monitoring and evaluation related factors which in one way or another affect the sustainability of community based projects, it also recommends more action points to which all CBPs stakeholders consider for more improvements.

Kilonzo and George (2017) conducted the study on the sustainability of community based water projects in Dodoma. Stratified random sampling was employed to get 30 CBWP for the study and simple random sampling was used for obtaining 390 households. Purposive sampling was also employed to obtain the key informants for in-depth interviews and Focus Group Discussions Quantitative data obtained were processed and analyzed using Statistical Package for Social Sciences (SPSS 16v.) while qualitative data were transcribed and content analysis was employed in analyzing them. In examining the power structure, the study shows that institutions and empowerment have significant correlation with sustainability status of the CBWP. The study also shows that global and national actors have high influence/power in

effecting the CBWP critical activities. The local actors are perceived to be powerless; however, the study indicates importance of recognizing them because their position as powerless actors may limit their participation in the CBWP and thus jeopardizing the chances of yielding sustainable CBWP

Mrangu (2018) assessed factors affecting sustainability of community based projects in rural areas with reference to Bagamoyo district, Tanzania. 190 respondents were randomly sampled. Questionnaires were administered to 170 respondents while interview was adopted to collect data from the rest 20 participants. Quantitative approaches were deployed to analyse data involving descriptive and inferential statistics using Statistical Package for Social Science (SPSS) 23rd version. The study revealed that, most of the CBPs in Bagamoyo does not meet expected impacts and goals since they are conducted with ineffective community participation, poor monitoring and evaluation and funded solicited are mostly not released on time or mismanaged. Researcher recommends that, government and other stakeholders should enforce proper mechanisms that will encourage mutual benefits to the local communities in CBPs; and CBPs should be designed with self-financing mechanisms in order to ensure their survival even after phasing out of donors funds.

2.5 Research Gap

There is no doubt that several studies have been conducted on the issues related to the community based water projects inside and outside in Tanzania. However, there is no empirical evidence on the reviewed literatures that show the similar study on the factors influencing sustainability of community based water projects in Dar es Salaam

particularly at Kiwalani ward, Ilala district. Therefore, this study was carried out to address the identified gap.

2.6 Conceptual Framework

The conceptual framework of this study was guided by independent variable and dependent variable. The importance of conceptual framework in this study is that, it shows the relationship of the variables, which are independent variable and dependent variable. In order to ensure the sustainability of community based water projects various factors should be taken into consideration. Among of the identified factors are community participation, skills of water management committee and monitoring and evaluation on the sustainability of community based water project. On the other hand, sustainability of community based water projects stand as dependent variable.

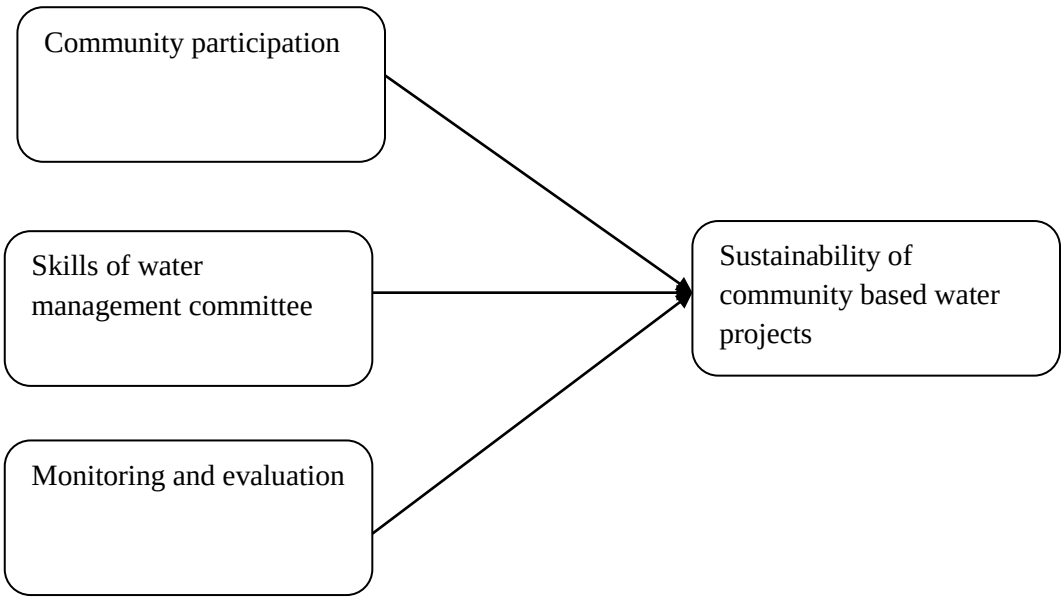

Figure 2.1: Conceptual Framework

Source: Author's own construction (2019)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Chapter Overview

The purpose of this chapter is to provide detailed information on how the study was conducted in the field. This is a plan or framework on how the research was carried out. In that regard, it comprises of research design, area of the study, population of the study, sample and sampling techniques, types of data, data collection methods, data validity and data reliability, data analysis and ethical consideration.

3.2 Study Paradigm (Philosophy)

For the purpose of this study, research philosophy used is positivism. That is to say, the researcher used quantitative design to obtain different measurements of data due to the fact that this is the quantitative research in nature.

3.3 Research Design

Research design entails the arrangement of the prevailing data, collection and analysis conditions in a manner oriented to bring relevance to the research objectives (Sounders, 2000). This study employed descriptive survey design. A descriptive study attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events, through the collection of data and tabulation of the frequencies on research variables or their interaction as indicated by Cooper and Schindler (2003). Thus, this approach is appropriate for this study as it helped to describe the state of affairs as they exist without manipulation of variables, which is the aim of the study. Descriptive survey design was considered most appropriate

because subjects are normally observed in their natural set up and can result in accurate and reliable information.

3.4 Area of the Study

The study was conducted at Kiwalani ward located in Ilala municipal, Dar es Salaam region, Tanzania. This is among of the wards, which are located in Ilala municipal. The choice of Kiwalani ward as study are is due to the fact that, Kiwalani ward is among the wards in which there are community based water projects and also DAWASA has the projects in progress. Like other similar settlements, access to reliable and sustainable basic services remains has always been a major challenge that faces the suburbs residents. Hence, the researcher wanted to ascertain on how these projects are operated by DAWASA can have been sustained.

3.5 Population of the Study

The population of the study was 311,740 people; this population involved the residents of Mongolandege, Kipunguni B and Kiwalani ward, as well as DAWASA staff.

3.6 Sample and Sampling Techniques

3.6.1 Sample Size

According to Rwegoshora (2006), sample size refers to the numbers of elements to be included in the study. Therefore, the sample size of the study was 100 respondents. According to Magigi (2015) proposes the use of Slovene's formula to calculate appropriate sample of the study, which is optimal. Therefore, the Slovene’s formula can be stated as,

n = N / (1 + Ne^2). Whereas:

n = number of sample, **N** = total population, **e** = Level of precision error

Then: **N** = 311,740 people, **e** = 10%, **n** =?

From the formula:

n = 311,740 / (1+ 311,740 *0.1^2) = **99.9679323** (because you can't sample a fraction of person or thing)

Therefore: n = **100**

To achieve this sample size, Table 3.1 provides the summary of sample size distribution as follows:

Table 3.1: Sample Size Distribution

Respondents	**Frequency**	**Percentage %**
Water management committee	20	20
Community members	60	20
DAWASA staff	10	10
Other stakeholders	**10**	**10**
Total	**100**	**100**

Source: Researcher's information (2019)

3.6.2 Sampling Techniques

Sampling procedure may be defined as a systematic process of individuals for a study to represent the larger group from which they are selected (Sekaran, 2003). This study used simple random sampling technique to get members of sample size.

Simple random sampling technique was used to obtain community members. This is a probability sampling whereby all members in the population have equal chance of being selected to form a sample (Adam and Kamuzora 2008). The use of this method gave each participant an equal and independent chance of being selected. The technique is good when the population is made up of members of similar characteristics.

3.7 Types of Data

To ensure the accuracy of work, this study employed both primary data and secondary data. The use of both types of data helped the researcher to come up with the concrete findings and information related to the factors influencing sustainability of community based water projects.

3.7.1 Primary Data

The Primary data are those, which are collected afresh and for the first time, and thus happen to be original in character (Kombo and Tromp, 2006). This study used questionnaire.

3.7.2 Secondary Data

Secondary data refers to the data that are already exist, the data that were collected by someone else (Kumar, 2007). Therefore, this study is going to use both soft copy and hard copy secondary data to access the relevant information related to the factors influencing sustainability of community based water project.

3.8 Data Collection Methods

3.8.1 Questionnaires

Questionnaire refers to an instrument of data collection that consists of a set of predetermined and structured questions given to the subject to respond to in writing (Adam and Kamuzora, 2008). The questionnaires were distributed to community leaders, community members and other stakeholders. The questionnaires were pilot tested to determine their suitability to the respondents. The researcher administered questionnaires both in person and through the help of field assistants by visiting the respondents. This intended so as to offer assistance especially to those with low literacy levels and this helped to increase response rate (See appendix I).

The use of questionnaires is justified because they are an effective way of collecting information from a large sample in a short span of time and at a reduced cost than other methods. Further, questionnaires facilitate easier coding and analysis of data that were collected.

The information that were collected through questionnaires reflected the influence of stakeholders' participation, institutional capacity, management skills, financial capacity and monitoring and evaluation on the sustainability of community based water project.

3.8.2 Documentary Review

This involves the review of various documents so as to get second hand information to support the information collected through primary data (Magigi, 2015). In this study, the researcher made a thorough review of various documents such as journal, articles,

theses, report and books related to the factors influencing sustainability of community based water project.

3.9 Reliability and Validity of Data

Reliability is the extent to which results of a study are consistent over time and there is an accurate representation of the total population under study (Amin, 2005). To ensure reliability, the research instrument was enhanced through a pilot study that was done by selecting a pilot group of 20 respondents. The pilot data were not included in the actual study. The pilot study allowed for pre-testing of the research instrument.

On the other hand, validity is the degree by which the sample of test items represents the content the test is designed to measure (Bridget and Lewin, 2005). To establish the validity of the research instruments the researcher sought the opinions of experts in the field of study especially the researcher's supervisors. This facilitated the necessary revision and modification of the research instruments thereby enhancing validity. In addition to that, reliability test was performed with the results shown in table 3.2.

Table 3.2: Cronbach Alpha Test

Study Variables	**Cronbach Alpha Values**
Community Participation	0.864
Skills of Water Management Committee	0.908
Monitoring and Evaluation	0.852
Sustainability of Community Based Water Projects	0.823

Source: Field Data (2019)

Table 3.2 shows the information on reliability test on all study variables both independent and dependent ones whereas they are all consistent and reliable; as they are subject to inferential analysis performance in disseminating the causal relationship between study variables. This is well acknowledged by the fact that Ritter (2010) further suggests that reliability test on study variables is best performed using Cronbach Alpha analysis whereas once the values are 0.7 and above; then the constructs are reliable and vice versa. However, the values of the constructs are all above 0.8 as they range between 0.823 – 0.908 which is certain that they are all reliable and consistent.

3.10 Data Analysis

According to Mugenda and Mugenda (2003), data analysis is the processing of data to obtain answers to research questions. Therefore, the researcher edited completed questionnaires completeness and consistency. Data clean-up followed; this process involves editing, coding, and tabulation in order to detect any anomalies in the responses and assign specific numerical values to the responses for further analysis. Data were analyzed quantitatively using correlation and multiple regression analysis

In that note, the study is described in model as stipulated by Schwarz (2006) which states as follows:

$$SCBWP = \beta o + \beta 1CP + \beta 2SWMC + \beta 3ME + e$$

Where by

SCBWP = Sustainability of Community Based Water Projects

βo = Constant Factor

β1CP = Community Participation

β2SWMC = Skills of Water Management Committee

β3ME = Monitoring and Evaluation

e = Error term (left overs/other factors).

The assumptions of multiple linear have been followed as mentioned in appendix I; The variables are community participation, skills of water management committee and monitoring and evaluation.

3.11 Assumption of Econometric Theory

The use of correlation and regression depends on some underlying assumptions. The observations are assumed to be independent. For correlation both variables should be random variables, but for regression only the response variable y must be random. In carrying out hypothesis tests or calculating confidence intervals for the regression parameters, the response variable should have a Normal distribution and the variability of Y should be the same for each value of the predictor variable. The same assumptions are needed in testing the null hypothesis that the correlation is 0, but in order to interpret confidence intervals for the correlation coefficient both variables must be normally distributed. Both correlation and regression assume that the relationship between the two variables is linear.

For the above multiple regression models to be effective applied when it comes to regression output interpretation the following assumption should be taken into consideration.

(i) The chosen sample is representative of the population. In our research a sample of 100 respondents will act as the representative of the study area

(ii) There is a linear relationship between the independent variable(s) and the dependent variable where variance of errors is constant across all levels of the independent variable, this is called homoscedasticity, like wisely our econometric model indicates the sense of linearity since it obeys y = a + bx form

(iii) All the variables are normally distributed; The normal distribution is a very common distribution and it's very useful to statisticians, in particular because of the central limit theorem which states that the mean of many independent random variables, X1,X2,…,XnX1,X2,…,Xn from the same distribution is approximately normally distributed. Where from our research the independent variables are community participation, skills of water management committee and monitoring and evaluation that are many and random.

(iv) There are no *outliers,* An *outlier* is an observation in a data set which is far removed in value from the others in the set. It is an unusually large or an unusually small value compared to the others, also from our research as seen the mean of independent variable are 3.220,3.610,3.504,3.476 where there is no any large values all of them range only in 3.

(v) The independent variables are all linearly independent (no variable dependents of the other variables, as already explained there is only one dependent variable that is Sustainability of Community Based Water Projects that will only be determined by community participation, skills of water management committee and monitoring and evaluation.

3.12 Ethical Consideration

Ethical considerations are important for any research. Ethical issues that are taken into consideration include proper conduct of the researcher and confidentiality of the information to be obtained from the respondents (Mugenda and Mugenda, (2003). An introductory letter to meet the respondents was obtained from the University and the local government authority. Respondents were encouraged to participate voluntarily and before administering the questionnaire, the researcher sought informed consent from respondents. The researcher ensured anonymity and confidentiality of all the information that were collected.

CHAPTER FOUR

FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

The chapter highlights the findings of the study as information obtained from the field with relevant analysis of the findings and the discussion of the facts as collected from the field. The presentation of findings, analysis and discussion is in line with the study hypotheses to assure the knowledge gap filling process through causality testing. Therefore, the study is well described in the following manner.

4.2 Response Rate

The study generated information through primary sources with a sample size of 100 respondents supposed to provide relevant primary data on the study being undertaken. Since that is the case, the rate of response was such that all 100 respondents were obtained in the respective study area selected for the study such that the rate was positive by 100%. In addition to that the researcher gathered information through questionnaire whereas the respondents were required to state their level of agreement through Likert 5 of Scale.

4.3 Respondents Characteristics

Respondents' key aspects which consisted of features were well assessed to generate information on the overview and insight of the Dar es Salaam Water Authority (DAWASA) members as employees of the entity through key characteristic elements of age, gender and the level of education of the respondents. In that case, they are described in a manner that constitutes the following:

4.3.1 Age of Respondents

Age of respondents was the first characteristic of the respondents' general information to be investigated in the study. This was to establish whether the study was representative in relation to age of the respondents. Therefore the study required respondents to generate information on their age which were well described and illustrated in table 4.1.

Table 4.1: Age of Respondents

Age	Frequency	Percent
21-35	37	37.0
36-50	47	47.0
50+	16	16.0
Total	100	100.0

Source: Field Data (2019)

Table 4.1 shows findings on age of the respondents, which were certain that 37 respondents (37%) were aged between 21-35 years; while 47 respondents (47%) were aged between 36-50 years; and 16 respondents (16%) were aged above 50 years. This implies that employees in Dar es Salaam Water Authority (DAWASA) composed of all age categories as being the youth and the young, mid aged and the aged ones. The view corresponds with Harper (2013) suggesting that the Dar es Water Authority (DAWASA) former DAWASCO is a large public entity which consist of employees in all age groups and categories including the young ones, mid-aged and the aged ones. Despite that, the aged ones are phasing out as a result of retirement in different sections, departments, units and branches.

4.3.2 Gender of Respondents

The gender of the respondent explains about male and female class of the respondents with the aim of showing gender balance to the place in which study is done. In other words, it can be said that, gender distribution was considered in order to establish the gender composition of the respondents. Besides that, the respondents provided facts on their gender with the findings being shown in table 4.2.

Table 4.2: Gender of Respondents

Gender	Frequency	Percent
Male	67	67.0
Female	33	33.0
Total	100	100.0

Source: Field Data (2019)

Table 4.2 highlights findings on gender of respondents whereas male respondents were 67 (67%) while female respondents were 33 (33%). This implies that Dar es Salaam Water Authority (DAWASA) as a public organization is open and free to all people regardless of their sex orientation to become employees and practitioners. The statement aligns with Lyne (2013) stating that all public organizations in Tanzania including the water authority adhere to equality on employing people whereas everyone regardless of gender orientation is free to work and being employed despite.

4.3.3 The Level of Education

Education level was considered as an important attribute to the study. It was because, education was assumed to have a crucial role in enabling respondents to understand

different questions on the subject matter. In that regard, the respondents were required to provide information on the level of education, which are well, described in table 4.3.

Table 4.3: Level of Education

Level of education	**Frequency**	**Percent**
Secondary Education	27	27.0
Certificate	13	13.0
Diploma	42	42.0
First Degree	18	18.0
Total	100	100.0

Source: Field Data (2019)

Table 4.3 describes the findings on education level of the respondents, which are certain that 27 respondents (27%) were secondary education holders; 13 respondents (13%) were certificate holders; 42 respondents (42%) were diploma holders; 18 respondents (18%) were first degree holders. The implication of the findings is that most employees in the entity as being water authority in Dar es Salaam consist of basic and limited education with less practitioners possessing high education skills and competence.

The view is claim is well asserted by Wolfgang (2008) states that in Tanzania specifically in public entities most employees have limited education levels with most being basic education holders whereas some occupying positions above the skills and knowledge they possess. The situation also encounters water authority as well though with the current education reforms the entity has now start to possess skilled and well educated practitioners.

4.4 Findings, Analysis and Discussion as per Study Hypotheses

The findings, analysis and the discussion pattern is well presented using measures of central tendency as being mean and standard deviation; as well as correlation and multiple regression analysis. In that case, the presentaiton and elaboration is performed in the manner which is as follows:

4.4.1 Mean and Standard Deviation

The analytical tools as measures of central tendency were performed to show the variable among the independent ones with the highest influence on the dependent variable through the mean; together with the level of respondents' opinion in terms of the level of variation using standard deviation. Therefore, findings are shown in table 4.4.

Table 4.4: Mean and Standard Deviation

	Mean	**Standard Deviation**	**N**
Sustainability of Community Based Water Projects	3.220	1.4253	100
Community Participation	3.610	1.4656	100
Skills of Water Management Committee	3.504	1.4400	100
Monitoring and Evaluation	3.476	1.4506	100

Source: Field Data (2019)

Table 4.4 shows the values of mean and standard deviation on study variables both independent and dependent ones whereas the highest mean among the three study predicting variables is on community participation with the value of 3.610. This implies that sustainability of community based water projects is largely influenced by

community participation, which shows the variable to possess highest influence than others. Standard deviation on the other hand shows that the variance of values between variables of the study is not very minimal and low signifying that respondents opinion were nearly close to each other.

4.4.2 Correlation and Multiple Regression

The analysis as the inferential undertaking is performed to vividly show the existing relationship between study variables as between independent ones on the dependent variable. Despite that, the inferential analysis on the relationship between variables is first led by the inclusive testing of all study hypotheses on the dependent variable which is well described using model summary test shown in table 4.5.

Table 4.5: Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Standard Error of Estimate**	**Change Statistics**			**Durbin-Watson**
1	.763	.780	.775	61.112	.605	89.746	.000	1.701

Source: Field Data (2019)

Study Hypotheses: Community Participation, Skills of Water Management Committee and Monitoring and Evaluation

Dependent Variable: Sustainability of Community Based Water Projects

Table 4.5 shows findings on the inclusive testing of all study hypotheses on the dependent variable, which is well determined by the respective of R^2. This entails that sustainability of community based water projects is well influenced by community

participation, skills of water management committee and monitoring and evaluation by 78% with the other remaining influence propagated by other factors besides the study hypotheses. This signifies that the study assumptions are all positive and qualified for undertaking further inferential analysis.

4.4.2.1 Correlation Analysis

Correlation analysis is articulated to show the variable among study hypotheses, which correlate best with sustainability of water supply system as the dependent variable. The analysis is well described in table 4.6.

Table 4.6: Correlation Analysis

		Sustainability of Community Based Water Projects	Community Participation	Skills of Water Management Committee	Monitoring and Evaluation
Person corr.	Sustainability of Community Based Water Projects	1	0.561	0.469	0.334
	Community Participation	0.561	1	0.07	0.040
	Skills of Water Management Committee	0.469	0.04	1	0.112
	Monitoring and Evaluation	0.334	0.009	0.009	1
Sig. (1-tailed)	Sustainability of Community Based Water Projects	1	0	0	0
	Community Participation	0	1	0.008	0.04
	Skills of Water Management Committee	0.534	0.003	1	0.007
	Monitoring and Evaluation	0	0.03	0.007	1
N	Sustainability of Community Based Water Projects	100	100	100	100
	Community Participation	100	100	100	100
	Skills of Water Management Committee	100	100	100	100
	Monitoring and Evaluation	100	100	100	100

Source: Field Data (2019)

Table 4.6 shows values of correlation analysis on the study variable, which denotes that the highest correlation lies between community participation and skills of water management committee. Despite that, the highest correlation is on community participation which shows that sustainability of community based water projects is mostly influenced by community participation. Since the correlation is significant the coefficient is still small implying that there is no multicollinearity. This is a problem, which is well tackled using multiple regression analysis.

4.4.2.2 Multiple Regression Analysis

Multiple regression analysis is well performed to show the influence of each study hypotheses on the sustainability of community based water projects as the dependent variable with findings shown in table 4.7.

Table 4.7: Multiple Regression Analysis

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	Std. error	Beta		
(constant)	-26.112	7.658		-1.221	.133
Community Participation	3.051	.210	.531	12.336	.000
Skills of Water Management Committee	3.374	.266	.540	12.590	.000
Monitoring and Evaluation	3.198	.249	.509	12.253	.000

Source: Field Data (2019)

Table 4.7 shows findings on multiple regression analysis which shows that all study hypotheses as independent variables as being community participation, skills of water

management committee and monitoring and evaluation are positive and significant on statistical note on sustainability of community based water projects as the dependent variable. This entails that sustainability of community based water projects is influenced by community participation, skills of water management committee and monitoring and evaluation.

4.5 Discussion of the Study Findings

4.5.1 Community Participation and Sustainability of Community Based Water Projects

The study through table 4.7 has findings which show that community participation as the study hypotheses and independent variable is positive and significant statistically on sustainability of community based water projects as the dependent variable. This denotes the fact that sustainability of community based water projects is facilitated by community participation whereas the claim is also in line with Harper (2013) stating that water projects in communities tend to be stable and assured with stability provided that the participation of the community to foster sustainability is certain, adequate and positive.

Kendall (2014) also states that water projects in any country and or jurisdiction may be sustainable or less sustainable depending with the community in the area as the beneficiaries. This is certain with the fact that communities are the one to preserve as assure that the established facilities exist and remain in good conditions through securing and protecting the infrastructures established.

4.5.2 Skills of Water Management Committee and Sustainability of Community Based Water Projects

The study indicated that skills of water management committee as the independent variable is positive and significant on statistical ground at .000 level on sustainability of community based water projects as the dependent variable. This entails the fact that sustainability of community based water projects is influenced by skills of water management committee. The view aligns with Petterson (2002) that in areas where management committees in handling water projects consist of skilled personnel and reliable labour force; the projects are highly expected to foster performance and vice versa. Shen (2016) also provide that community water projects in different areas are likely to attain sustainability provided that the participants responsible in exercising management of the projects are skilled and efficient for that matter.

4.5.3 Monitoring and Evaluation and Sustainability of Community Based Water Projects

The study indicated that monitoring and evaluation as the study hypotheses and independent variable is positive and significant on statistical note at .000 level on sustainability of community based water projects as the dependent variable. This implies that sustainability of community based water projects is facilitated by monitoring and evaluation. The statement is supported by Hashim (2009) suggesting that in project undertakings there can be shortcomings and challenges which are necessary to be predicted and assessed before the planning of the project starts for ensuring positive outcomes. In that case, this is useful in this since it facilitates the selection and consideration of several alternatives in case of tragedies and

shortcomings which makes the pattern of monitoring and evaluation being something of great importance.

In that note, the study is described in model as stipulated by Schwarz (2006) which states as follows:

$$SCBWP = \beta o + \beta 1CP + \beta 2SWMC + \beta 3ME + e$$

Where by

SCBWP = Sustainability of Community Based Water Projects

βo = Constant Factor

β1CP = Community Participation

β2SWMC = Skills of Water Management Committee

β3ME = Monitoring and Evaluation

e = Random Variable

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter highlights the inclusive summary of the study in line with the causal relationship which has been performed to assure the generation of new knowledge on assessment of factors influencing sustainability of community based water projects in Tanzania. The chapter also describes the conclusion of the study and the recommendations in line with the study hypotheses. In that case, the chapter highlights all components of the chapter in a manner that is as follows:

5.2 Summary

This is an inclusive summary of the study on assessing factors influencing sustainability of community based water projects in Tanzania. The study was guided by three hypotheses as predicting variables to sustainability of community based water projects which were community participation, skills of water management committee and monitoring and evaluation. The study was conducted using explanatory study design through causality testing approach between study variables. Data were obtained from Dar es Salaam Water Authority (DAWASA) and the community through questionnaires as the data collection tool from the selected sample size of the study. Data collected were well assembled and filled in the SPSS data sheet version 21.0 to produce adequate and relevant analytical tools to describe the entire causal relationship analysis in generating sufficient knowledge to fill the identified study gap. Descriptive statistics were first produced from the SPSS to show the profile of the

respondents. Moreover, correlation and multiple regression analysis were described to show the relationship between study variables as being the independent on the dependent variable. Findings of the study showed that all three study hypotheses are positive and significant statistically on sustainability of community based water projects as the dependent variable. This entails the fact that sustainability of community based water projects is influenced by community participation, skills of water management committee and monitoring and evaluation.

5.3 Conclusion

Sustainability of community based water projects in Tanzania is indeed facilitated by community participation, skills of water management committee and monitoring and evaluation as independent variables. This is attributed by the concern that the three independent variables are all positive and significant on statistical note on sustainability of community based water projects in Tanzania. Despite that, water availability including in areas with established infrastructures is still limited and problematic. This is a major problem in the area whereas most areas are highly suffering from water shortage both in urban and rural settings whereas drastic measures must be taken to overcome the situation since it is worse at the moment; and as time goes on it escalates to worst.

5.4 Recommendations

Since the situation on sustainability of community based water supply system is limited regardless of several projects in place, the study recommends that first on water infrastructures the government must well invest in designing and set new water

infrastructures both in urban and rural settings to match with the current demand in the area since the available infrastructures do not match with the current demand in the area. The view corresponds with Harper (2013) suggesting that water infrastructures are limited than the urbanization which has taken place to assure sufficient water supply in the area. This is a concern which needs to be well addressed through massive investment to be undertaken by the government to set new infrastructures and facilities in place for the provision and acquisition of adequate water supply.

Despite that, the study recommends that the government should increase subsidies in the water authorities to assure that they perform well in service delivery. This is because the charges in reality to the customers are very minimal to provide service which do not match with the realities in service provision. The view is supported by Hashim (2009) suggesting that the government should subsidize water entities to compensate deficits on the charges imposed on water services to assure that the water authority as the entity collects sufficient revenue to foster the delivery of water services effectively.

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APPENDICES

Appendix I: Questionnaires

Dear Participant,

I am the student of Open University of Tanzania carrying out the study titled "**Factors Influencing Sustainability of Community Based Water Project in Dar es Salaam: A Case of Ilala Municipa**l" as the partial fulfillment of the requirement for the degree of masters of project management of Open University of Tanzania.

Therefore, I humbly request you to participate in this study as the respondents. I assure you to hold confidentiality.

Yours,

Researcher

Section A: General Information

1. Gender
   (a) Male ( )
   (b) Female ( )

2. Age
   (a) 18-30 ( )
   (b) 31-45 ( )
   (c) 45-60 ( )
   (d) 61-above ( )

3. Education level
   (a) Primary level and below ( )
   (b) Secondary level ( )
   (c) Certificate ( )

(d) Diploma ( )
(e) Degree ( )
(f) Master's ( )
(g) PhD ( )
(h) Others, specify_____

4. Marital status
   (a) Single ( )
   (b) Married ( )
   (c) Widow ( )
   (d) Divorced ( )

Section B: To determine the extent to which community participation influences sustainability of community based water project at Ilala municipal

1. The following questions deal with the extent to which community participation influences sustainability of community based water project at Ilala municipal, therefore, you are required to put a cycle where you think it is appropriate to you.

Key Note: **1**=Strongly Agree, **2**=Agree, **3**=Undecided, **4**= Disagree, **5**= Strongly Disagree

S/N	Parameter	S/agree	Agree	Undecided	Disagree	S/disagree
1	Community members were involved in the project for sustainability purpose					
2	Community members were involved in the security of the water project					
3	Community members were involved in the provision of human resources					

4	Community members were involved in all six stages of the project (conception, planning, implementation, monitoring, evaluation and closure)					
5	Community members were willing to participate in the water project					
6	Community participation influences project sustainability					
7	Community participation enhances project efficiency					
8	Community participation has enhanced the continuity of the water project					
9	Community participation enhances collective effort in project control					
10	Community participation enhances sustainability of the project					

Section C: To find out the extent to which skills of water management committee influences sustainability of community based water project at Ilala municipal

2. The following questions deal with the extent to which skills of water management committee influences sustainability of community based water project at Ilala municipal, therefore, you are required to put a cycle where you think it is appropriate to you.

Key Note: **1**=Strongly Agree, **2**=Agree, **3**=Undecided, **4**= Disagree, **5**= Strongly Disagree

S/N	Parameter	S/agree	Agree	Undecided	Disagree	S/disagree
1	Water management committee members adequately respond to concerns					
2	Skills of water management committee members are adequate in sustainability of water project					
3	Water management committee members have sufficient technical experts to manage water projects					
4	Water management committee has clear and achievable estimates in project schedule					
5	Leadership skills of water management committee members is satisfactory					
6	Advise about technical architecture was made available for the project					

Section D: To establish the extent to which monitoring and evaluation influences sustainability of community based water project at Ilala municipal

3. The following questions deal with the extent to which monitoring and evaluation influences sustainability of community based water project at Ilala municipal, therefore, you are required to put a cycle where you think it is appropriate to you.

Key Note: **1**=Strongly Agree, **2**=Agree, **3**=Undecided, **4**= Disagree, **5**= Strongly Disagree

S/N	Parameter	S/agree	Agree	Undecided	Disagree	S/disagree
1	Project readiness assessment was conducted prior project implementation					
2	Evaluation was conducted during project implementation.					
3	Community was involved in the setting up the goals of the project					
4	Community was involved in the formulation of action plan of the project					
5	All participants are provided with right information and reports when needed					
6	Education materials were distributed					
7	Leaders organize and conducts project meetings timely					
8	There is openness in income statements to communities for the projects conducted					
9	Enough budget is allocated to conduct monitoring and evaluation					
10	Field visit by evaluation team was done on time					

THANK YOU VERY MUCH

Appendix II: Research Clearance Letter

THE OPEN UNIVERSITY OF TANZANIA

DIRECTORATE OF POSTGRADUATE STUDIES

P.O. Box 23409
Dar es Salaam, Tanzania
http://www.openuniversity.ac.tz

Tel: 255-22-2668992/2668445 ext.2101
Fax: 255-22-2668759
E-mail: dpgs@out.ac.tz

Our Ref: HD/B/966/T.13

Date: 06th December 2019

Director
DAWASA
Box 1573
DAR ES SALAAM

RE: RESEARCH CLEARANCE

The Open University of Tanzania was established by an act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No. 55 in the official Gazette. The act was however replaced by the Open University of Tanzania charter of 2005, which became operational on 1st January 2007. In line with the later, the Open University mission is to generate and apply knowledge through research.

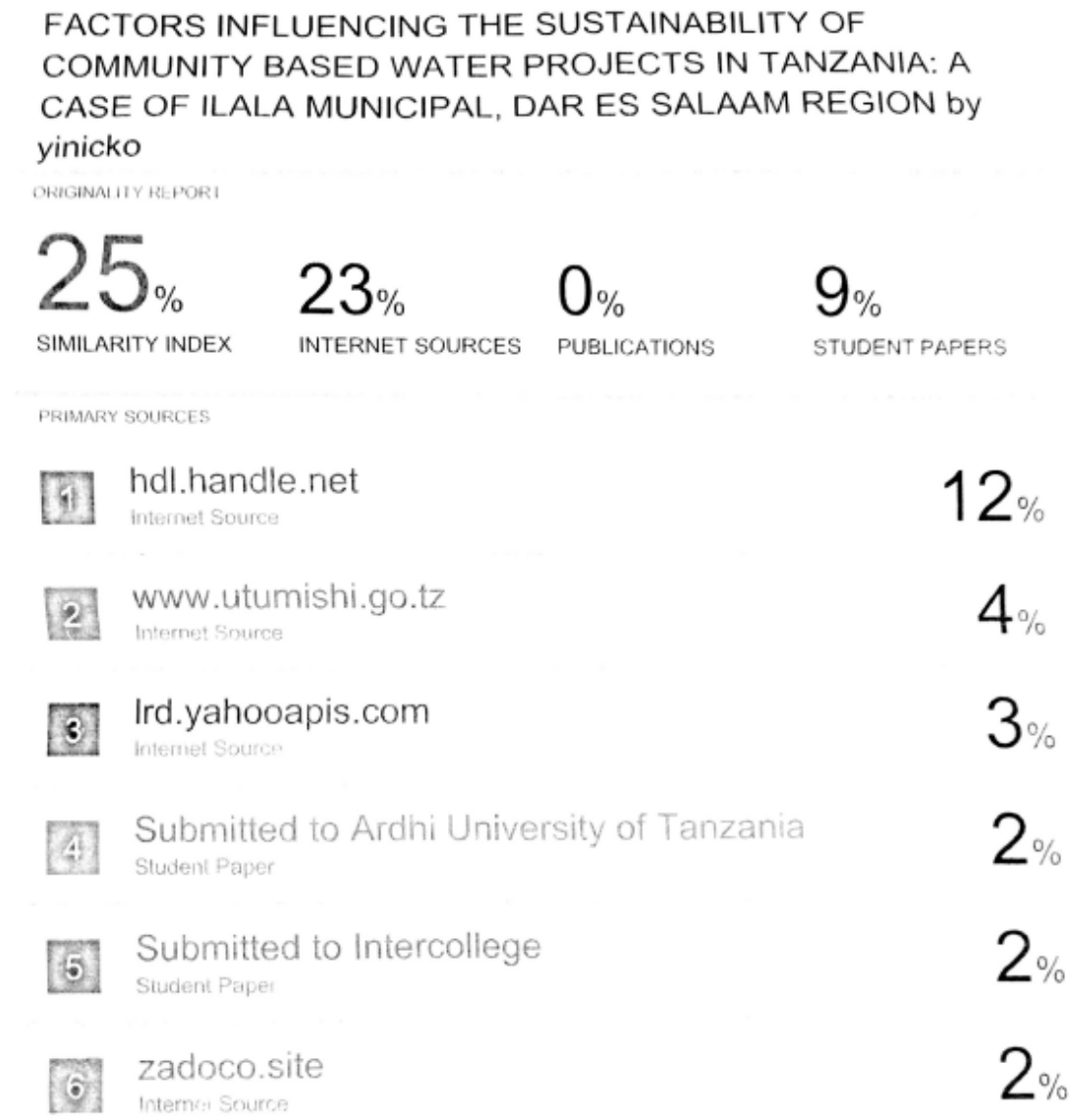
To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief background, the purpose of this letter is to introduce to you **Yiniko Charles Msuku Reg No: HD/B/966/T.13** pursuing **Master Degree of Project Management.** We hereby grant this clearance to conduct a research titled: **"Factors Influencing the Sustainability of Community Based Water Projects in Tanzania: A Case of Ilala Municipal, Dar es Salaam Region",** she will collect her data in Dar es Salaam, Tanzania from 10th December 2019 to 7th February 2020.

In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O. Box 23409, Dar es Salaam. Tel: 022-2-2668820. We lastly thanks you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

Prof. Hossea Rwegoshora
For: VICE CHANCELLOR
THE OPEN UNIVERSITY OF TANZANIA

Appendix III: Plagiarism Report



FACTORS INFLUENCING THE SUSTAINABILITY OF COMMUNITY BASED WATER PROJECTS IN TANZANIA: A CASE OF ILALA MUNICIPAL, DAR ES SALAAM REGION by *yinicko*

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