MAKERERE UNIVERSITY

STAKEHOLDER ENGAGEMENT, COMMUNITY PARTICIPATION, STAKEHOLDER COMMITMENT AND PROJECT SUSTAINABILITY: ACASE OF RURAL WATER SUPPLY AND SANITATION PROJECTS IN JINJA DISTRICT

BY

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(PLAN A)

DECLARATION

I **Lalam Elizabeth Yvonne** declare to the best of my knowledge that, this dissertation is my original Work and has never been published and /or submitted to any university for any award in any other university/ institution of higher learning.

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APPROVAL

This dissertation has been submitted with our approval as supervisors and our signatures are appended against the respective names below:

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DEDICATION

I dedicate this work to my Lord Jesus Christ, my Family, my Pastors, my Lecturers and my Friends for the over whelming supports, advice and encouragement that you gave me during the research process. You have been my reason for this achievement and I thank you very much for all your supports spiritually, mentally, materially and physically. May the Almighty God bless you abundantly according to His riches in Glory.

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LIST OF ABBREVIATIONS

ADF African development fund

CBD Community Based Development

CMs Community Members

FAO- Food and agriculture organization

JDLG- Jinja district local government

MDG- Millennium development goals

MWE- Ministry of water and environment

NGO- Non government organization

OECD- Organization for Economic Cooperation and Development

RWSS- Rural Water Supply and Sanitation

UNDP- United Nations Development Program

UN- United Nations

UNICEF- United Nations Children's Fund

WASH Water and Sanitation for Health Project

UWASNET- Uganda Water and Sanitation NGO Network

WEDC- Water, Engineering and Development Center

WHO- World health organization

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ABSTRACT

The purpose of the study was to establish the relationship between Stakeholder Engagement, Community Participation, Stakeholder Commitment and Sustainability of rural water Projects in Uganda. The study adopted a cross sectional and quantitative survey design. Correlational and regressional designs were adopted to explain the relationships between the variables of study and the extent to which the independent variables explain the dependent variable. The study sample consisted of 50 rural water projects undertaken in the 7 sub-counties of Jinja districts. The data was tested for reliability, analyzed using SPSS and results presented based on the study objectives.

The results from the study revealed that there is a positive and significant relationship between stakeholder engagement and community participation, stakeholder engagement and stakeholder commitment, community participation and stakeholder commitment, stakeholder commitment and sustainability of rural water projects, community participation and sustainability of rural water projects, stakeholder engagement and sustainability of water projects.

In addition, Stakeholder engagement was a better predictor of sustainability of rural water project than community participation and stakeholder commitment, this implies that to improve sustainability of rural water projects, emphasis should be put on ensuring that stakeholder are fully engaged in the projects activities from the beginning of the project and through all the project phases.

The study therefore recommended that before implementation of any community based project, there should be high level of stakeholder engagement and the practices of stakeholder identification, analysis and engagement should be taken as an essential process of the project performance. The Project Managers and community leaders or representatives should create an environment where community members or organization members, project coordinators and users meet, interact, make decisions, and engage project team into the project activities, in all tasks of the water project phases which will eventually improves the sustainability of the projects.

CHAPTER ONE

INTRODUCTION

1.1 Background

Sustainability is the continuous functioning of the system both hardware (physical) and software (non-physical), and the continuance of the derived benefits at the beneficiary level from that system once the external hardware and software assistance have been essentially phased-out (Prado, 2015; Webster et al, 1999). According to Abrams (1998), sustainability implies the ability to recover from technical breakdowns of water projects. He describes sustainability as "Whether or not something continues to work overtime", no time limit is set on those continued services and accompanying behaviour changes. Sustainability of water project therefore is the continued service of water supply project over time after the termination of the source of funding and still the functionality of the water points are for a long time of period. The water service is sustainable if the water sources are not over-exploited, facilities are maintained in a condition which ensures a reliable and adequate water supply, and that the benefits of the supply continue to be realized by all users over a prolonged period of time, and the service delivery process demonstrates a cost-effective use of resources that can be replicated (Harvey and Reed, 2007). Sustainability of access depends on the sustainable functioning of water infrastructure; this includes physical structure, functionality, operations and maintenance or willingness to sustain the system operational after the project closure.

Stakeholder engagement is the actions individuals must take to obtain the greatest benefit from the project services available to them (Gruman et al., 2010). A study conclusion drawn by Silva et al., (2013) on the sustainability of water supply projects shows that community engagement in planning as well as training capacity building and monitoring can help to meet the sustainability criteria. When stakeholders are engaged in the planning process and are more likely to select supply options that they are willing and able to operate and maintain the water source as they participate directly in planning their own water supply systems then sustainability can be achieved (Montgomery, et al. 2009; Ashbolt, 2010). Identifying and getting to know stakeholders early means that the project can involve the right people during implementation and throughout the project phases by earning their committed to project objectives. This emphasizes the role of the individual independent of changes aimed at improving the effectiveness of the project and by applying vigor, dedication and absorption

as measures of engagement in their project activities, will foster the design and implementation of project, ` to the project that can sustain the project benefits (Escudero & Googins, 2012; Ryan, 2014). On the other hand, Wasilawa, (2015) state that community participation is the process by which individuals, families, or communities assume responsibility for their own welfare and capacity to contribute to their develop own as well as community development by being involved in the decision making processes in determining goals and pursing issues of importance to them; such as the direction of services and the allocation of funds. Through interaction intensity, diversity of participant groups take control of local decisions and determine how available resources like capital contributions are used in maintaining communal project structures (Fowler, 2009; Aslama & Napoli, 2010; Mamburi, 2014; Mwakila, 2008). Therefore, when local communities participate directly in planning their own water supply systems, these systems are more likely to be sustainable than systems that are imposed by the government or donor organizations (Barnes and Ashbolt, 2010).

Furthermore, according to Maltin (2011), commitment is a force that binds an individual to a course of relevance to particular target and is measured in terms of affective, continuance and normative commitment (Daylo, 2008). Therefore Commitment is experienced in these different mindsets, that is; mindset of Affective commitment; mindset of obligation that's normative commitment and mindset of awareness of costs associated with the course of relevance to the target. Smith (2011) outlined that: "community water supply systems are engineered solutions that operated through social cooperation and when the stakeholders do not feel it represents their interests, or that they have any responsibility to respect its authority, their commitments will not be realized in the project (Beyene 2012). Stakeholder commitment is thus the driving force behind project performance whereby the interest always stem from the stakeholders' behaviour and the desirable work outcomes resulting from their commitments (Saudi, 2014).

However, project sustainability is still a major challenge in many water supply projects in various districts of Uganda. Large numbers of projects implemented at huge costs often tend to experience difficulties with sustainability. For example, the Uganda Water and Sanitation NGO Network (UWASNET) projects geared towards sustainable water sources intended to use a community based approach, targeting the sustainability of water infrastructures level of 80%, but achieved only 20%. After the project closure, the community viewed maintenance of such facilities to be the role of the organization, as such even the few structures that were established during implementation were not worth seeing (Namiyingo, 2013). This left many public lamenting of the difficulty in developing sustainable rural water supply projects. In

Jinja District there have been persistent trends for water systems breakdowns and the rate at which these facilities are breaking down into disuse or being abandoned is alarming. In the rural areas of Budondo, Butagaya, Buwenge, Buyengo, Kakira and Mafubira, 55 implemented water source projects were picked at random and out of the 55 projects, 20 were found not functional, 8 were partially functioning and some were even abandoned (Busoga Trust report, 2015). These figures underpin the negative impact on the project sustainability of the rural water supply sources in Jinja District.

1.2 Statement of the Problem

Despite government and other stakeholder's efforts to increase access to safe water in rural areas by constructing sustainable water projects, long-term sustainability of these water facilities continues to be a challenge. The high rate of water facility breakdowns due to damaged physical structure, unwillingness of the users to sustain the system and lack of O&M that covers the efficient day-to-day running of the water supply facilities has led to widespread non-functionality of the water sources (JDLG report, 2015). Visits to the sub-counties point to the fact that access to clean and safe water is still a major challenge in most outer parts of Jinja District, with coverage of 61%, and functionality of 33.3% only. In Kamwokya Trading Centre, Musisi village, Buyengo Sub-county, residents travel miles to reach the nearest clean water source and out of the 5 water sources in the village, only 1 is functional. The community members also reported that servicing of these water sources was never done and the area councilors did not take any action (Asimo, N., et.al, (2015).). It is against this that the researcher intends to investigate and find out why the water projects have not registered successful sustainability and transformed rural community even when there is strong developmental support. Basing on such catastrophe, the study seeks to investigate whether stakeholder engagement, community participation and stakeholder commitment influence project sustainability in Uganda.

1.3 Purpose of Study

To examine the relationship between stakeholder engagement, community participation, stakeholder commitment and sustainability of rural water supply and sanitation projects in Jinja District.

1.4 Research Objectives

a) To investigate the relationship between stakeholder engagement and community participation to the project.

b) To analyze the relationship between stakeholder engagement and stakeholder commitment.

c) To establish the relationship between community participation and stakeholder commitment.

d) To determine the relationship between stakeholder commitment and sustainability of rural water supply and sanitation projects.

e) To find out the relationship between community participation and sustainability of rural water supply and sanitation projects.

f) To establish whether there is relationship between stakeholder engagement and sustainability of rural water supply and sanitation projects.

1.5 Research Questions

a) Is there any relationship between stakeholder engagement and community participation?

b) Does stakeholder engagement positively relates to stakeholder commitment?

c) Does community participation positively affect to stakeholder commitment?

d) Is there a positive relationship between stakeholder commitment and sustainability of rural water supply and sanitation projects?

e) Is there a positive relationship between community participation and sustainability of rural water supply and sanitation projects?

f) Does stakeholder engagement affect sustainability of rural water supply and sanitation projects?

1.6 Scope of Study

Geographical Scope

The study was limited to the sustainability of rural water projects in the sub-counties of Jinja District.

Subject Scope

The researcher focused on the sustainability of rural water supply and sanitation projects and the predictor variables: stakeholder engagement, community participation and stakeholder commitment.

1.7 Significance of Study

The findings of the study would be used as a reference for future scholars embarking on a similar study, hence enhancing existing literature in the area of project sustainability.

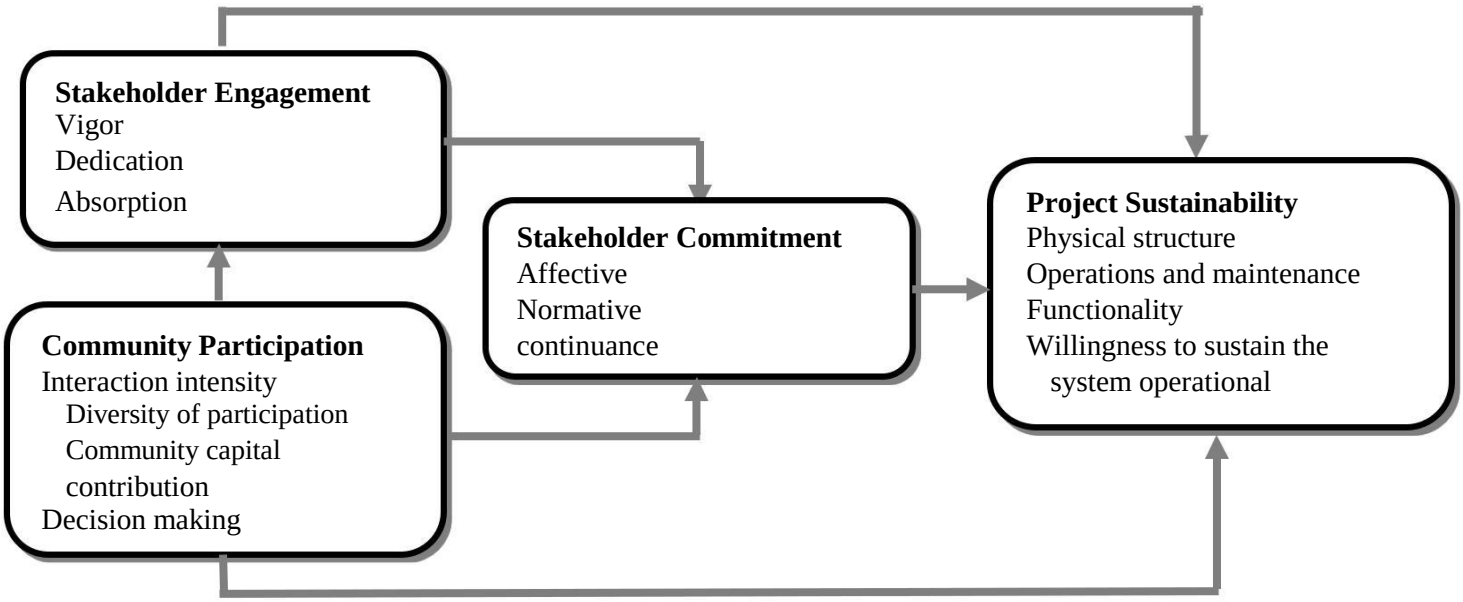
This study would contribute to the existing body of knowledge on stakeholder engagement, stakeholder commitment, community participation and its relationship with project sustainability of water supply and sanitation.

The study would help policy makers to devise decisions relating the sustainability of projects to enable the community enjoy the benefits of safe water projects in Uganda.

The study would act as a basis of literature to other scholars to further their studies on project sustainability.

1.8 Conceptual model for the variables

Conceptual framework



Source: *Developed from the work of Seppala et. al., 2008;Bakker et. al, 2010; Fowler, 2009, Aslama & Napoli, 2010, Mamburi, 2014; Daylo (2008), Maltin, 2010, Harvey 2010, Ngoja, 2015 and Beyene 2012.*

The model was derived from the literature indicating that stakeholder engagement explained using constructs vigor, dedication and absorption positively relates to community participation, to stakeholder commitment and to project sustainability. Community participation measured by interaction intensity, diversity of participants, community capital contribution and decision making positively relates to stakeholder commitment and to project sustainability; stakeholder commitment explained by affective, normative and continuance commitment positively relates to project sustainability.

The stakeholders in the conceptual framework are the Government (represented by the local government-JDLG, example Water Engineers &Technicians, Coordinators), the Private sector (represented by National Water and Sewages Corporation-NWSC, example monitoring and evaluation teams and technicians at JDLG and at the sub-counties); the Non-governmental organizations & Donors (examples: Italian Institute for Co-operation & Development -IICD, Water Aid, Busoga Trust, Action Aid among others) and the Beneficiary represented by User communities (user representative in the project team) examples- Chairperson, treasure, secretary) and the users-example households).

The Government through the local government (districts, sub counties and other authorities carry out planning, budgeting and resource allocation, community mobilization and ensure their effective participation and involvement, follow up implementation by private sector and support the operation and maintenance of water services, monitoring prompt accountability and reporting. Private Sector are involved in viable resource for design, construction, operation, maintenance, training, capacity- building and commercial services. The donors are usually the major source of funding and contributing to costs for policy development and capacity building.

Non-Government Organizations and Community Based Organizations are mainly involved in point source protection and in borehole drilling and rehabilitation especially for institutions and in the emergency areas, and are very instrumental in developing and implementing community mobilization projects.

User Community is responsible for the planning, implementation and sustainability of water and sanitation activities which are heavily dependent on participation of these user communities. These activities require an organized community to enable full participation in

planning and implementation stages through to operation and maintenance (O&M) of the facilities. The user communities which include Water User Groups, Water User Association and Water and Sewerage Authorities as community level organizations/institutions will ensure proper management of the facilities and sustainability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the existing scholarly literature for stakeholder engagement, community participation, stakeholder commitment and their relationship with sustainability of project. While acknowledging the works of earlier researchers, the review brings out gaps that require redress.

2.2 Stakeholder engagement

2.2.1 Overview of Stakeholder engagement

Everyday connotations of engagement refer to involvement, commitment, passion, enthusiasm, absorption, focused effort, and energy. In a similar vein, the Merriam-Webster dictionary describes engagement as "emotional involvement or commitment" and as "the state of being in gear". That is, in engagement, fulfillment exists in contrast to the voids of life that leave people feeling empty as in burnout. Rather than a momentary, specific emotional state, engagement refers to a more persistent and pervasive aff ective-cognitive state. However, no agreement exists among practitioners or scholars on a particular conceptualization of (work) engagement. It is widely agreed that engagement arises from both personal and environmental sources (Macey & Schneider, 2008). In this current global economy, stakeholder engagement has progressively become a part of many project practices for excellent project outcomes delivery. For instance stakeholder identification, a key component of the initial scoping phase ought to occur before an engagement plan is formulated and consultations begin. Each stakeholder normally has their own interest in the project that may cause different priorities, conflicts and dramatically increase the complexity of the situation. In practical terms, engagement within an organization or work-group is in part a function of the characteristics of stakeholders selected for membership. In addition to possible enhancement of engagement from improved project design, typical engagement levels can be increased through personnel selection procedures that focus on the identification of emotional stability and activated forms of extraversion and conscientiousness (Inceoglu and Warr, 2012). A well-managed stakeholder engagement process helps the project stakeholder to work together to increase comfort and quality of life, while decreasing

negative project impacts and increasing the economic sustainability of the project (Achman, 2013). Stakeholder engagement ought to be taken as a core element of any "sustainable development" plan. Therefore a project is more likely to be successful especially in the long-term, if it takes into consideration the expectations of the stakeholders and endeavors to meet their needs. Stakeholders engagement in any project improves the progression of the project and as project monitoring consists of collection of the data and reporting information according to the project plans, budget and requirements, stakeholder involvement and interaction is needed, The stakeholder engagement always provides opportunities to further align business practices with community needs and expectations aiding to drive long term sustainability and shareholder value (Tammer, 2009). Stakeholder engagement is dimensionally explained by Vigor, Dedication and Absorption and when well utilized results into improved performance (Seppala et al., 2008). Engagement at work has been described by Ferrari et. al.,(2008) as an employee's interest in, enthusiasm for and investment in the job. Maslach, Schaufeli, and Leiter (2002) defined engagement as having energy, involvement, and efficacy. However, this definition differs from that of Leiter and Bakker (2010) defined job engagement as "a positive, fulfilling, affective-motivational state of work- related well-being" that is characterized by vigor, dedication and absorption.

2.2.2 Vigor

Vigor is described as, "being fully charged with energy and resilient in one's work even during a regular 'dull' day when nothing particular happens (Schaufeli &Bakker, 2003). Vigor was defined as having high levels of energy even in challenging situations (Hallberg, 2005).These high levels of energy and mental resilience while working, the willingness to invest eff ort in one's work, and persistence even in the face of difficulties, are the very characters needed for community projects like the rural water project which are full of challenging issues. The emotional vigor component of worker well-being has proven to be especially important in explaining why employees give effort at work (Robinson, Perryman and Hayday, 2004; Perrin, 2007). They also discussed the vigor dimension of work engagement as being theoretically related to the exhaustion dimension of job burnout. Similarly, Schaufeli et al, (2003) suggested that the multidimensional facets making up job burnout, such as emotional exhaustion, were similar in conceptualization to the lack of energy and fatigue experienced by employees, and that the depersonalization dimension of burnout was akin to feelings of "alienation, disengagement, or cynicism" experienced by employees at work.

2.2.3 Dedication

Dedication is, "being proud of one's work and convinced that what one performs is significant (Hallberg, 2006). It refers to being strongly involved in one's work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Dedication is being theoretically related to the ineffectiveness dimension of burnout. Robinson, Perryman and Hayday (2004); Perrin (2007) discussed the dedication dimension of work engagement as being theoretically related to cynicism. Work engagement is unique from extra-role behaviour because engaged employees bring something different to their jobs, they do not just do more. Likewise, although engaged stakeholders most likely experience flow (i.e., a state of optimal experience that is characterized by focused attention, effortless concentration and a loss of self- consciousness), which is considered as a short-term experience but work engagement is a more pervasive state (Schaufeli & Bakker, 2010). Therefore, stakeholder engagement can be considered to be a distinct and separate entity from these other concepts when one is decided to the project work.

2.2.4 Absorption

Absorption is the concept of, "being carried away by work, forgetting everything in one's surroundings, looking at your watch and finding that you have missed your coffee break without even noticing (Hallberg, 2006). It is characterized by being fully concentrated and happily engrossed in a project activity whereby time passes quickly and one has difficulties with detaching oneself from these activities. In practical terms, engagement within an organization or work-group is in part a function of the characteristics of stakeholders selected for membership. Thus, in addition to possible enhancement of engagement from improved project design, typical engagement levels can be increased through personnel selection procedures that focus on the identification of emotional stability and activated forms of extraversion and conscientiousness (Inceoglu and Warr, 2012). It is widely agreed that engagement arises from both personal and environmental sources (Macey & Schneider, 2008). This type of well-being can be complemented by the more energized form referred to as stakeholder engagement. Engaged stakeholders feel positively about their situation, but beyond mere satisfaction they are motivated to expend energy on a task become totally absorbed in the project activities.

Therefore, Vigor, dedication and absorption represent three distinct dimensions associated with stakeholder engagement which when demonstrated by those who have an interest in the

project, positively impact on the overall project sustainability. All the dimensions of engagement are associated with specific behavior which has an impact on the degree to which project achieves its objectives (Noland & Phillips, 2010). Thus this affirms with Leiter and Bakker (2010) that work engagement as "a positive, fulfilling, affective-motivational state of work- related well-being", and the review by Bakker, Albrecht, and Leiter (2011) who identified a "growing consensus that engagement can be defined in terms of high levels of energy and high levels of involvement in work. Therefore, engaging stakeholders as active collaborators and partners is vital in mitigation of risks and a more forward thinking perspective for the sustainability of any development and lack of doing so is a critical risk to the project and restrains a forward thinking perspective for sustainability of any development.

2.3 Community participation

2.3.1 Overview of Community participation

Community participation in development projects has become an important element in the design and implementation of development projects, such as community-based programmes, which adopt participatory methods and have been promoted by development organizations, particularly the World Bank to address the inefficiency of highly centralized development approaches mostly in the developing world (Baral and Heinen, 2007). Participation of the community is in the form of Community Based Development (CBD) and is among the fastest growing mechanism for channeling development assistance. The aim of community participation in CBD projects is not only to reverse the existing power relations in a manner that creates agency and voice for the poor but also to allow the poor to have more control over development assistance. It is expected that this will result in the allocation of development funds in a manner that is more responsive to the needs of the poor, better targeting of poverty programs, more responsive government and better delivery of public goods and services, better maintained community assets, and a more informed and involved citizenry that is capable of undertaking self-initiated development activity (Lein and Tagseth, 2009). Evidence on the performance of community participation approach is scant, but the work that is available suggests that practioners may be over optimistic and naive about the benefits of the approach (Ngoja, 2015). Various scholars have attempted to develop useful models that conceptualize community participation in the context of development studies in general, but not related particularly to any economic sector (Tosun, 2006). Brett (2007) states that, the role of participatory theory in managing development projects and programmes in

poor countries, he points out that participation can succeed for specific kinds of projects and programmes in favorable circumstances, but is unsuitable for many others. It commonly fails in contexts where local conditions make co-operative and collective action very difficult, or where it is manipulated by implementing agencies to justify their own actions or poor performance. The rationale for community participation has been thought to be a means of enhancing empowerment, enhancing responsiveness to people's real needs, instilling a sense of ownership of projects by the local people and promoting sustainability (Muhangi (2007). The objectives of community participation are mainly to strengthen interpersonal relations, improve decision-making, ensure representation of a diversity of social groups, help clarify and stabilize communication between stakeholders and encourage local ownership and commitment and accountability.

2.3.2 Interaction intensity

Participation is understood as a right, not just the means to achieve project goals. The process involves interdisciplinary methodologies that seek multiple perspectives and use systemic and structured learning processes whereby community participates in joint analysis, development of action plans and strengthening of local projects through various interactions (Fowler, 2009). Pretty (2000) urge that through interactions, groups take control of local decisions and determine how available resources are used, so they have a stake in maintaining structures and practices. This creates the sense of ownership of the development project by the community. Often there is interaction at the beginning of the project but no dialogue or any other form of interaction occurs during the project. This ultimately creates a big gap between the proponents of the development projects and the communities, and consequently, the local people abandon a project based on such an idea. Communities should be involved in all stages of the project, from the planning through to the building and managing, of systems, by doing this, long term solutions can be found that are suited to their own needs and locally available resources. Therefore, it is suggested that there should be ongoing communication and interaction throughout the project period (Fowler, 2009). Todaro and Smith, (2012 argue) states that Managers of high performing companies interact and consider interests of all major stakeholder groups as they make decisions. Therefore, for sustainability, there's need to explore the complexity between the three dimensions of project; organizations and stakeholders, how they interact with each other since interactions are strengthened by communication and personal relationships. Additionally, those within the community and stakeholder group would be developing leadership skills, learning through experience and

through the transfer of knowledge. By utilizing their own skills and resources communities are able to take their first steps out of poverty and move towards sustainable development. And once these basic services are in place and communities develop the skills and resources for changing their environment as they continue to further their development (Keen, 2007). All these features instill a sense of ownership and enhance sustainability of development projects (Harvey and Reed, 2006; Beyene, 2012).

2.3.3 Diversity of participants

Diversity of participants is the diversity within the user community which is reflected in the project set up. This means the group is set up of broad diversity categories of people such as gender, status, ethnicity, age, and differences such as occupation, educational level and geographical location are taken into account to be part of any community activity. The inclusion and empowerment of rural people has become increasingly important in many countries as governments and community development practitioners seek new community-based solutions to the sustainability of rural and remote water projects (Ogilvie et al 2008). Participating communities make no distinctions among various groups and types of personalities who offer themselves to community involvement. All persons are actively welcomed, regardless of color, age, race, prior community involvement, level of education, occupation, personal reputation, handicap, religion, or any other factor. Participating communities do not sit by passively, waiting for a diverse group of community members to present themselves, they realize that past discrimination and other factors can stop people from stepping forward, and they actively reach out to all the citizens to encourage their participation (Aslama & Napoli, 2010).Communities seeking to empower themselves can build participation by welcoming other members, open to involvement by all groups and responsibilities are divided up so that the special talents and interests of contributing community persons are engaged. This can help in creating valuable roles for each person to play actively reaching out to build inclusive participation, creating and supporting meaningful volunteer opportunities. Active community participation by diverse members is key to building an empowered community and not only is participation a requirement for any empowerment programs, but it is also critical to community success in terms of sustainability (FAO, 2010). It is very important to understand and appreciate diversity of participants in any project, however one needs to develop effective strategies to reach out to those individuals and groups who are usually left out of decision-making or have very little say in the life of the community (Nikkhah & Redzuan, 2010). When different people participate, it assists

them in identifying key issues of concern that need to be considered. Due to a diversity of opinions and perspectives from different role players, diversity of participants helps to obtain a balanced perspective of key issues and to identify creative solutions to problems.

2.3.4 Community capital contributions

In rural community water supply, most national policies require a capital contribution from the users, either in-kind (labor and local materials) or, if in cash, in the region of five percent of the capital cost. This is rarely recovered however, and so improved services are by default a gift (albeit often with some community participation in construction) from the government or NGO to the community. This is in line with (Gleitsmann, 2005) who argues, that the key issue in water supply in developing countries is gauging the willingness of community members to manage their water sources and infrastructures through contribution of time and resources. However, there is disagreement among practitioners about whether user cash contributions to capital costs help to cement community ownership of rural water supply systems and so contribute to sustainability. There are cases in which a cash contribution to capital cost is raised but then ring-fenced for the water supply, for instance by putting it into an operation and maintenance account on behalf of the community. In this way it is of direct benefit to the users. Ngoja, (2015) established that operation and maintenance water services worldwide costs money but insufficient funds limits the purchase and spare parts. He argues that External Agencies have been reluctant to finance operation and maintenance activities while Governments often accord it less priority yet the service users (community water users) who are the potential source of finance on the same, do not typically see water as a commodity for sale and so many a times they are unwilling to pay for it. Community capital contributions could take the form of community levies-where individuals or households in the community agree to contribute a given fee toward running and maintenance of the water system. The contributions could also take the forms of: donations from CMs during harvest and fines paid by community members who break community rules. The community capital contributions collection could be affected or hampered by the methods used for the same. The community must be willing to invest in capital and recurrent costs. The involvement of community members in terms of financial contribution, planning, execution, operation and maintenance ensure the sustainability of development projects, such as water supply schemes (Gebrehiwot, 2006). Therefore, success of rural water supply schemes in terms of project sustainability is largely linked with community participation and their capital contribution (Hassan et al., 2010).

2.3.5 Decision making

Community participation is a process by which people from all sects of community (rich, poor, Men, women, uneducated, educated, and so on) can influence or control those decisions, which affect their lives. This involves participation of project beneficiaries, women and men in decision making, design, construction and operation and maintenance of community projects. The community must be empowered to make decisions to control the system and community participation in rural water supply and sanitation projects provides members of the community the opportunity to influence the decision-making process. Effective external support must be available from governments, donors, and the private sector e.g. training, technical advice, credit, and construction (Sun et. al., 2010). According to Harvey and Reed (2007), the process of involving people extends to decisions about installation of water points, where these should be sited, what technology should be chosen, what management arrangements should be introduced, as well as contribution to costs. Participation broadens social development ideals as by participating fully in the decision-making process, ordinary people experience fulfillment, which contributes to a heightened sense of community and a strengthening of community needs. As such, to promote public participation it is vital for service providers and project implementers to know the traditions and social customs of the community. Attention should be given to the community involvement in all the stages of projects implementation (Gicheru, 2012). Projects may fail in the long run if the community participation approach in project management is not adopted with members being fully immersed in decision making plans. Mwakila (2008) asserts that a decision should be made if communities are genuinely to own their water resources, some contribution in terms of cost would have to be made to reinforce a feeling of ownership. Dissemination of information, community member's involvement in all stages of water project implementation and use of local knowledge in implementation of water projects are very crucial, as this would make the projects more sustainable in the long run (Mwakila, 2008). The success of a project depends on people understanding; accepting and using systems they have selected for themselves. Thus, they should be considered in all levels of decision making during the project implementation.

2.4 Stakeholder commitment overview

According to Maltin (2011), commitment is a force that binds an individual to a course of relevance to particular target. A person who has committed himself to a task will pursue it until its completion even if he experience obstacles during the process. It is his commitment

that will drive him to rise above the challenges. Stakeholder commitment is therefore a state in which the stakeholder identifies with a particular project and its goals, and wishes to maintain membership in the project (Robbinson, 2004). Commitment is believed to be the strength for success in the stakeholders' acceptance of project values and goals and their loyalty to the project which is reflected by their continual desire to remain in the project activities and this is what binds the stakeholder to the project (Tolentino, 2013). A stakeholder with high level of commitment at a project sees himself as a true member of the project and is more likely to embrace the project success values and beliefs, by such level of commitment, and the project activities can become more sustainable after the closure. Thus stakeholder commitment can used as a driving force for project performance, whereby the interest will stem from the stakeholders' behaviour and the desirable work outcomes resulting from the commitment (Saudi, 2014). OECD (2012), affirms that the increase in access to drinking-water can be achieved through sustained commitment, additional resources and effective implementation approaches. Many researcher such as Allen & Meyers (2004) and Daylo (2008) measured commitment in terms of affective, continuance and normative commitment. These three are characterized by three different mindsets – desire, obligation, and cost. It is said that stakeholders with a strong affective commitment stay because they want to, those with strong normative commitment stay because they feel they ought to, and those with strong continuance commitment stay because they have to do so."

2.4.1 Affective commitment

Affective commitment is measured by the individual's desire to stay with the project. A stakeholder's affective commitment is dependent on the stakeholder's positive feelings towards the project and is often the result of project policies and activities that promote a positive connection with the work group (Liou, 2008). Meyer & Allen (1991, 1997) claimed that "members with a strong affective commitment stay because they want to and are more likely to carry out their duties well. A strong willingness of stakeholders to carry out project activities influences their expectations and perceptions towards the project and this leads to emotional attachment of these stakeholders to the interests of the project and willingness to achieve the project goals

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2.4.2 Normative commitment

Normative commitment on the other hand is obligation-based and is measured by the individual's feeling that they have to stay with the project. Manion (2004) claimed that this kind of commitment arises from the person's sense of obligation to the organization. It is also a reflection of how much a person's values and beliefs are aligned to the project's core values. (Allen & Meyer, 2004) said that normative commitment is positively related to performance. A stakeholder with high level of commitment for the project sees himself as a true member of the project and is more likely to embrace project values and beliefs and will be more tolerant of minor sources of dissatisfaction (Li, Y., & Lerner, R. M. 2011).

2.4.3 Continuance commitment

Continuance commitment is cost-based. This kind of commitment is grounded on the value that the stakeholder derives from the project. With this kind of commitment, stakeholders stay primarily to avoid losing something of value (income, benefits, seniority). Stakeholders with high continuance commitment stay because they feel that they have few alternatives outside. Liou (2008) attributes the success of the water project to the stakeholders' commitment and participation and further a high-commitment environment improves project's retention rate, reduces operating costs and promotes project performance and efficiency (Quevedo, 2006). Therefore a strong stakeholder commitment causes members to work harder in order to achieve the objectives of the project.

2.5 Sustainability

2.5.1 Concept of Sustainability

Water can only contribute to social development for communities if water supply facilities are sustainable, without which water would only be available for a short period of time. Whereas the concept has substantial appeal, consensus on the meaning is lacking, especially concerning what combinations of resources or practices that should be sustained. Although the concept sustainability has only emerged in the past few years, the proposition that particular human practices in the world have proved unsustainable has cropped up in literature going all the way back to ancient Greece. Sustainability has been somewhat more frequent and sweeping in the two hundred years since the work of Malthus, more so in the period since the World War II. However, there is a broad range of definitions of sustainability in RWS projects used in reports, field surveys and books on the topic. The literatures is full with definitions and with most of them being similar and often times

referring to common sources as their starting point but some differences exist with some being quite significant in emphasis. How we define sustainability is of course important in setting the parameters, which are then used for measuring it and in understanding the determinant factors which may contribute to, or work against, the likelihood of sustainability. Hodgkin (1994) noted that "One of the problems for objective quantification of sustainability is the fact that the adjective "sustainable" has strong normative connotations". That is to say, that different people, or different groups of people such as the users of water, donors, national governments, local private sector companies, research institutions and many others, will have different perceptions of sustainability based on the relative value of achieving the various goals" (Hodgkin, 1994). Thus, each organization may choose to look at sustainability from a different perspective and attach significance to different aspects; these can include a focus on technical performance, Management, empowerment, social equity or the environment to name just a few.

2.5.2 Sustainability in rural water supply and sanitation projects

Numerous examples of the definition of sustainability exist in the literature and many authors start out by citing the various definitions of sustainability as developed by Bamberger and others over several years. These have at their core, the concept of the capacity of a RWS project to continue delivering a flow of benefits for a long period of time after project inputs have ceased (Hodgkin, 1994). This definition resonates with another, frequently cited version based on the work of the Organization for Economic Cooperation and Development, (OECD) which describes a development project as being sustainable, "when it is capable of supplying an appropriate level of benefits during an extensive period after the withdrawal of all forms of support from the external agency" (OECD, 2012). Many authors go on to build from this basic definition, noting that the concern in terms of sustainability is not so much to do with the "project" per se, but rather the water supply system itself and the service it provides (Carter et al 2011). One significant exception to this is a recent Water, Engineering and Development Center (WEDC) study of sustainable hand pump projects in Africa, specifically designed to focus on the level of the project and includes aspects such as effectiveness, efficiency and replicability as part of defining a project's sustainability (Harvey et al, 2007). This definitional problem can be clearly illustrated by considering the ultimate goal of providing RWS services. For many, although not all, donor agencies the perceived benefit of projects will be a subsequent positive impact on the broader welfare of beneficiary community. Therefore, the logical definition of sustainability from the perspective of these

institutions may be one that includes sustained health impacts. However, for many rural households, the perceived benefit of a project may simply be the continued convenience of having (running) water nearby, or within, the household. Hence, their definition may be closer to one that simply describes sustainability as: "whether or not something continues to work over time" (Abrams, 1998, Prado 2015); meaning in this case, whether or not water continues to flow over time. Therefore, when the project activities and benefits can be maintained more than five years beyond the project period, the project is considered as sustainable in the long term (Escarpe, 2016), this may be achieved by putting into consideration the following indicators of sustainability.

2.5.2.1 Physical Structure.

This assesses the overall physical structure of the water system based on factors such as of construction quality (no design flaw, no leaks or defects in the system and sufficient pressure level), and type of technology used (selection criteria, complexity of system, capacity to respond to demand, skill required and spare parts), the final choice of technology should be made by the community from a range of feasible options (Abditifow 2013, Beyene, 2012). System design of the structure and the complexity of the technology will clearly have relative weighting on physical structure of the water point. These will require standardization of pump type and if a hand pump for instance, spare parts and support from the stakeholders which are seen as vital factors in the sustainability of projects in Africa (Harvey et al, 2009). Communities need to be encouraged to select feasible options rather than fashionable options, they must be given real freedom to select their own technology while taking into consideration the low cost and not pushed towards the implementer's preferred choices. Leakages from exposed pipes may be relatively high which could cause difficulties in laying main lines and would frequently be subjected to damages which may finally affect sustainability of the projects. Poor construction quality or the use of low- grade materials may lead to the failure of the water system before the end of its design life. Similarly, design flaws including shallow wells or boreholes, and overestimates of the water sources may cause a system to fail from the outset. A perfect physical structure score indicates that a water system has high quality construction without visible defects in the wells, catchment or masonry. For piped systems, it must have sufficient pressure in all points of the system and no leaks in exposed pipes, standpipes or house connections. If the condition of the water sources is not monitored thorough well, sustainability of these projects may be all in vain (Castro, 2009).

2.5.2.2 Operation and maintenance

The effective operation and maintenance of rural water supply is crucial element for sustainability of the water project. At each water point, money is collected every month of year for O&M for the scheme in terms for breakdowns, guarding, fencing, and other necessary issues (Ahmed, 2013). Community management of rural water system on O&M is not successful if financing resources are not available and frequently supports are not provided (Binder, 2008; Beyene, 2012). One aspect of decentralization is that rural water services have entailed a shift from being social good to economic good and water users are being made responsible to pay for the cost of O&M through user fees. Additionally, local communities became responsible for the management of efficient and equitable service delivery. (Jimenez & Perez-Foguet, 2010; Mandara et al. 2013). Castro (2009) examines factors such as existence of a designated system operator and its capacity, community's capacity on repairing, access to tools and spare parts, and condition of water supply affect sustainability. In projects where local communities have a role in maintenance activities of the water schemes, training (management and technical aspects) and backup from the government, NGOs and private sectors is necessary for sustaining the projects are considered very important for the sustainability. The effective operation and maintenance (O & M) of rural water supply systems is crucial element for the sustainability of the water project. The community management of rural water supply systems on operation and maintenance (O &
M) is not successful, if financing resources are not available and frequent supports are not provided (Binder, 2008). Generally, water and sanitation projects experience their most serious problems with operation and maintenance and with cost recovery aspects, therefore, it is imperative to plan for operation and maintenance. In many cases, in order to ensure the sustainability of the projects and improved water solution, it is necessary to have a community ownership and management approach, making the end-users directly responsible for the operation and maintenance of the installed facilities (Haysom & Alexia, 2006). In order to address the underlined causes of system failure and achieve sustainability and effectiveness, scholars in the Rural Water Supply Sector have increasingly emphasized the importance to follow an integrated approach to Operation and Maintenance.

2.5.2.3 Functionality

A water project is described as functional if it is in use by the local community at a particular point in time and this is the first step to check the sustainability of a certain scheme. This

refers to a condition whereby the system provides water to the users and the scheme is said to be fully functional when the quantity and quality of the water point is sufficient so that the people can fetch water from it (Muhammad A. A, 2013). A poorly sited water point that still technically works but which the community has decided not to use is therefore considered non-functional (Reed, 2007). People also take into consideration proper management because it improves the functionality and sustainability of the water sources. Accordingly, water sources are not to be over-exploited, facilities are to be maintained in a condition which ensures a reliable and adequate water supply, and the benefits of the supply should continue to be realized by all users over a prolonged period of time, and the service delivery process should demonstrate a cost-effective use of resources that can be replicated (Harvey and Reed, 2007).Therefore, ensuring functional sustainability of water throughout the design period is vitally necessary since it helps to identify the main causes of non-functionality and indicate the troubleshooting for non-functionality per scheme system components at the stage of design, construction and service period. Habtamu, (2012) asserts that non-functionality of water sources could be resulting from lack of maintenance, irresponsibility of users and 'free-riding', all of which cause management failures. Sustainability is normally achieved by reducing frequent and long breaks in supply and consequently through improving service delivery. This is because if there is poor service, users are usually unwilling to pay for poor service. This may cause further deterioration in services as finance is not available for repairs and maintenance. But if there are proper systems functioning, users are prepared to pay for a reliable service.

2.5.2.4 Willingness to sustain the system

Many researchers point to willingness as one of the keys to sustained project benefits and for the community to meet the cost of maintenance, the community members must be willing to pay for the services. This measures community for sustaining the water system and it has to assess the degree to which members feel responsible for their maintenance of their system. (Beyene, 2012), asserts that if the community are willing to contribute cash or labour useful for the management of the water source then the services that they obtain for the source is valued and it's a means of promoting its sustainability. Kiiza & Basheka, (2017) also affirms that sustainability is a balance between willingness to contribute towards support, human capital, and environmental factors to reinforce continuity. They said, it is only common sense that willingness to contribute to the maintenance of a system is based on a perceived benefit. In the case of a communal water supply system, motivation and willingness must be

generated on both an individual and collective basis, amongst both individual and household users who pay a tariff and community members who volunteer time and are involved in system management (Bhandari and Grant, 2007). The sustainability of a rural water system depends on the willingness of users to provide the necessary time, money and labor to keep the system functioning however, this willingness may be affected by socio-economic factors such as income level, ethnic homogeneity, or the willingness of villagers to work together, More commonly, however, the willingness will depend on consumer satisfaction with the service, usually compared to the previous water source in a community, when communities perceive a significant improvement in water services, they are usually more willing to pay for operation and maintenance (Mbata, 2006). Sustainability rate of rural water supply systems increases as a result of communities' owning and managing their schemes, existence of management organization at the village level, protection of the water point, communities cost recovery for operation and maintenance. Generally, this does not come alone but instead comes along with an aspect of willingness to sustain inform of cash, materials, labor, and idea can be taken as a useful indicator of the demand for improved and sustained water services (Bhandari and Grant, 2007).

2.6 Relationship between variables

Literature shows that there is a relationship between stakeholder engagement and community participation, stakeholder engagement and stakeholder commitment, community participation and stakeholder commitment, stakeholder commitment and sustainability of rural water projects, community participation and sustainability of rural water projects and stakeholder engagement and sustainability of rural water projects. This is discussed below.

2.6.1 Stakeholder engagement and Community participation

According to Gruman et al., (2010), stakeholder engagement is the actions individuals must take to obtain the greatest benefit from the project services available to them. These actions will emphasize the role of the individual; independent of changes aimed at improving the effectiveness of the project system and also will encompass providing strategies, processes and infrastructures to enable the success for the project. Engaging stakeholders make them discover what really matters to the project; involve their efforts in providing feedback on project strategies, performance and in identifying what and how things could be changed; monitor and manage their contributions to project satisfaction levels. Schaufeli et al., (2012) asserts that engaged stakeholders are primarily intrinsically motivated as they work for the

fun of it. The stakeholders are managed based on their interest, relevance and influences that may cause different priorities, conflicts and increase the complexity in the project issues. In my view apply vigor, dedication and absorption within the project is in part a function of the characteristics of the stakeholders selected for membership. On the other hand, community participation is the process by which individuals, families, or communities assume responsibility for their own welfare and develop capacity to contribute to their own and the community's development, by being involved in the decision making processes, in determining goals and pursing issues of importance to them (Wasilawa, 2015). In my view, this would mean that through the active involvement of the local community in decision-making concerning their development projects or in the implementation stage, the community members with legitimate interest in the project will take action to influence decisions which affect them in the project and the only way to ensure that these individuals have the power to attack the root causes of underdevelopment is to enable them to influence all decisions at all levels that affect their lives. At this stage, the participating community members will develop strong interest for interactions with the project agencies and becomes fully engaged stakeholders in the project tasks and with the practice of interacting with and influencing the project team, the stakeholders becomes mentally resilient to the overall benefit of the project and its advocates. Therefore community participation enhances relationship management through which the community becomes fully engaged or increase the level of stakeholders with effort to align their mutual interest to reduce risk in these projects. Regular communication of project issues between the development project stakeholders (governments, private sector, donors NGOs, SBOs) and participating community members (user stakeholders) have the tendency to create positive perceived project transparency and increased trust among community members (Sango, 2014). Sonnentag et al., (2010) in their study findings, argued that having the full, three-dimensional state of engagement (that's vigor, dedication & absorption) can be more of a transient state. This 'positive crossover' aspect of engagement shows how an engaged individual can influence those interacting with and working around them. Therefore, an engaged stakeholder can transfer that individual work engagement to new members such as the participating community member. Community participation hence motivates people to work together where people feel a sense of responsibility and recognize the benefits of being fully engaged as active stakeholder in the project.

2.6.2 Stakeholder engagement and Stakeholder commitment

Engaging stakeholders is a formal process of relationship management through which stakeholders engages with a set of primary and secondary stakeholders, in an effort to align their mutual interest to reduce risk in projects; this process makes the whole team of the projects stakeholder to be commitment to the project activities for positive results. Woodhill (2009), points out that engaging stakeholder is an ongoing process promoting the development of public investment and economic commitment towards the project as it involves establishing partnerships within the local community and society at large. Saudi (2014), states that stakeholder commitment is the driving force behind the project performance whereby the interest always stem from the stakeholders' behaviour and then the desirable work outcomes resulting from the commitment. Several studies carried out, found that all three components of commitment correlate with the three components of engagement: affective commitment positively (Demerouti, Mostert, & Bakker, 2010; Parzefall & Hakanen, 2010), normative commitment positively (Louison, 2007; Wefald, 2008), and continuance commitment positively in one study (Wefald, 2008). Bourne (2008)'s argument does not differ from the arguments of earlier researchers as he contends that one winning strategy for project commitment would be to develop a culture of stakeholder engagement by developing and nurturing a strong relationship with key stakeholders.

2.6.3 Community participation and stakeholder commitment

Community participation is a multidimensional and complex concept which has many forms and can take place in different stages of a project cycle, at different levels of society along a continuum from; that's contribution of inputs to a predetermined project, information sharing, consultation, decision-making, partnership and empowerment (Mamburi, 2014). Community participation ensures that projects designed borrow from opinions of end users and this factor influences community ownership of water projects. Therefore this will enhance their willingness to effectively manage these projects after construction (Ochelle, 2012). The rationale for community participation has been thought to be a means of enhancing empowerment, enhancing responsiveness to people's real needs, instilling a sense of ownership of projects by the local people and promoting commitment towards project sustainability (Muhangi (2007). Stakeholder commitment is a state in which the stakeholder identifies with a particular project and its goals, and wishes to maintain membership in the project (Robbinson et. al., 2004). The community members have to maintain this membership by means of participation in the project activities, such as training and equipment supply e.g.

computers, office supplies and motor bikes, which in turn brings commitment through loyalty to the project. All these are geared towards enhancing the members' role in improving community ownership of water projects in rural areas (Fielmua 2011). This is in line with Liou (2008) who attributes the success of the water project to the stakeholders' commitment and participation and further, a high-commitment environment improves project's retention rate, reduces operating costs and promotes project performance and efficiency. Therefore, allocating adequate time and resources for participatory analysis and responding to demand-led approaches are important ways to improve community participation, however this cannot be achieved alone; stakeholders are needed to be commitment and take part actively in the project. These findings indicate that making the community participates in the project activities leads to a high level of stakeholder commitment.

2.6.4 Stakeholder commitment and sustainability of water supply projects

The critical factor in promoting sustainability is the role of the stakeholders' commitment. Several researchers have argued that fostering commitments to foci like projects may be of immense benefit to both organizations and their stakeholders, so long as those targets have compatible goals (Meyer, 2009; Meyer et al., 2004; Meyer & Maltin, 2010). Stakeholders can and do develop commitments towards targets such as their projects**,** coordinators and work groups**,** and goals, and these commitments have consequences for organizationally-relevant outcomes (Vandenberghe, 2009; Becker, 2009; Neubert & Wu, 2009). This will lead to greater chances of support in implementation and realization of community development goals (Lachapelle, 2008). He further asserts that interests of stakeholders need to be dealt with to support sustainability of project deliverables since stakeholder input can lead to higher levels of stakeholder commitment throughout the project life. According to Meyer and Allen (2002) stakeholder involvement leads to increased affective commitment where stakeholders adopt the project's goals as their own and, therefore, desire to remain with the organization to help it achieve its goals. Commitment has been shown to reduce turnover and increase performance (Neumann et al., 2012; Meyer & Allen, 2004). It is this that leads to increased project performance and Tolentino (2013), also notes that stakeholders who have high levels of role contribution can reciprocate in the form of greater affective commitment to the organization leading to increased performance and thus sustainability. Cleland's (1999) findings coincides with the findings of the earlier studies, he asserts a strong willingness of stakeholders to carry out project activities influences their expectations and perceptions towards the project and this leads to emotional attachment of these stakeholders to the

interests of the project and willingness to achieve the project goals. Identifying and getting **to** know stakeholders early means that we can involve the right people while implementing the project and throughout the project in order for them to be committed to project objectives, to achieve desired outcomes and sustainability of the project.

2.6.5 Community participation and sustainability water supply projects.

Community participation and project sustainability are contested concepts which have multidimensional interpretations (Bredillet, 2006). Community participation has long been believed to be a critical factor influencing the sustainability of development interventions. Various scholars show that projects with active participation are more sustainable than projects with less or no participation (Vos, Renfro, Pollnac & Pomeroy, 2005). Community participation is seen as one of the solutions to the problems of project sustainability and not only would participatory approaches assist project sustainability but it is also argued that participation would make projects more efficient and effective (Mark, 2008). There is a strong argument that community involvement, even at the lower intensities of participation, is a "prerequisite for sustainability" **(**Harvey & Reed, 2006). The participation of communities based on their willingness to contribute increases effectiveness, efficiency, empowerment, equity, coverage and the overall sustainability of water supply projects (Gleitsmann,2005). (Kakumba 2010) states that the key to project sustainability is to meaningfully involve the users in the planning, implementation, operation, protection and maintenance of water supply systems according to their needs and potentials. Katumba (2010), further observed that water supply services provided without active community participation in planning, decision-making, and management are often not properly operated and maintained, hence not sustainable. Therefore, the beneficiaries as part of the community are important aspect of any project and these key people provide the key to project sustainability, (Koning, 2009). Community participation can contribute to the success of a project but lack of effective community participation can contribute to the failure of a project. (Mansuri and Rao, 2004).

2.6.6 Stakeholder engagement and sustainability of water supply projects

Stakeholder engagement is the practice of interacting with, and influencing project stakeholders to the overall benefit of the project and its advocates. The successful completion of a project usually depends on how the stakeholders view it. The energy behind stakeholder engagement is that it has positive consequences for the sustainability of the project (Inceoglu, I., & Fleck, S. 2010). Wildermuth and Pauken (2008) established that because engaged

stakeholders are fully psychologically present, they give their all to the project and are willing to go an extra mile to achieve project sustainability. Their requirements, expectations, perceptions, personal agendas and concerns will influence the project, shape what success looks like, and impact the outcomes that can be achieved. Successful stakeholder engagement is therefore a vital requirement for the water project and its sustainability. Pritchard (2008) found out that project managers need to understand that having stakeholders that are engaged results into better project sustainability, therefore their needs should not be neglected. However, achieving project sustainability-related targets in projects has becoming a key performance driver. Yet sustainability is a complex concept in projects since there are many diverse stakeholders and hence a need for a systematic approach to engage with them especially those stakeholders with high salience in relation to sustainability (Freeman, 2004)**.** Any successful developmental project seeks to engage national and local stakeholders since they are increasingly becoming a part of any project practice in order to deliver excellent project outcomes. Stakeholder engagement should therefore be taken as a core element of any sustainable outcome (FAO, 2010). With stakeholder's engagement, not only can the most important needs be identified, but by having the stakeholders play a role with commitment in the entire project cycle (formulation, adoption, implementation and monitoring), ownership can be ensured which results into the sustainability of the project **(**Grunig, 2007). Therefore, a project is more likely to be successful especially in the long-term, if it takes into consideration the expectations of the stakeholders and endeavors to meet their needs (Kwangware et.al 2014).

2.7 CONCLUSION

In line with the above theoretical review, it is clear that vast literature related to the study variables have been conducted. It has been observed however, that most of the established relationships have been conducted in developed environments. Also, no aggregative study had been conducted to examine their collective impact on sustainability of rural water projects which are continuing to increase. It is pertinent that the pattern of their relationships is tested in a context of a developing country for more logical and worldwide conclusion as well as the application of these relationships.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section was focuses on the methodology that was used in conducting this research. It entails the research design, the target population, the sampling procedures and sample size, the measurements of variables, tests of reliability and validity of research instruments, data collection methods and techniques, data processing and analysis procedures and limitations of study.

3.2 Research design

The study used quantitative approach and cross sectional survey to draw findings on the relationships between stakeholder engagement, community participation, stakeholder commitment and sustainability of rural water supply and sanitation projects.

3.3 Study Population

The study population comprised of 55 Water Supply and Sanitation Projects in Jinja district that are being implemented (Busoga Trust report, 2015).

3.4 Sampling Procedure and Sample Size

The research sample size consisted of 48 projects out of the population of 55 projects which was determined using the sampling table of Krejcie and Morgan (1970). The study adopted a simple random sampling procedure where each water project had the same chance of being selected as a unit of analysis in order to get representative views of the various stakeholders on sustainability of water supply and sanitation projects in Uganda. The units of inquiry were 5 people selected from each project. These were the planners, implementers, persons from the monitoring and evaluation team and the beneficiaries (users and user committees) and were sampled to represent all the population for the water projects.

3.5 Data Sources

Primary Data

The required primary data was collected directly from the respondents (project stakeholders) of water supply and sanitation projects. This was done through administering a structured

questionnaire with the help of two research assistants. Respondents were guided through the questionnaires to ensure high level of accuracy in the data collection process.

3.6 Data Collection Instrument

Primary data related to stakeholder engagement, community participation, stakeholder commitment and sustainability of water supply and sanitation projects was captured through administering a Questionnaire. The questionnaires enabled the reader to understand the questions and it also used the 5-likert scale (Strongly disagree, Disagree, Not sure, Agree, Strongly agree). Secondary data was obtained through literature review of previous research findings and existing literature on each study variable.

3.7 Measurement of Variables

Stakeholder engagement and community participation are the independent variables, stakeholder commitment was a meditating variable and sustainability is the dependence variables which were measured using a five point likert Scale.

Stakeholder engagement was dimensionally measured by vigor, dedication and absorption (Seppala et al, 2008; Bakker et al., 2010; Michelle, 2014).

Community participation was measured using dimensions of interaction intensity, diversity of participants, Capital contribution and Decision making (Fowler (2009); Aslama & Napoli (2010); Gebrehiwot, (2006), Harvey & Reed (2007).

Stakeholder commitment was measured using affective commitment, normative commitment and continuance commitment (Allen & Meyers, 2004) and Daylo, 2008).

Sustainability of water supply and sanitation project was dimensionally measured by physical condition, operations and maintenance, functionality and willingness to sustain the system operational (Castro, 2009; Binder, 2008; Reed, 2007; Bhandari and Grant, 2007).

3.8 Validity and Reliability

To reduce errors that pertain to the research questionnaire, content validity was measured using the Content Validity Index (CVI). Results for this measure all indicated values above 0.700. Results are indicated in the table below.

Table 3.1 Validity and Reliability of the instrument

Variable	*Anchor*	*Cronbach Alpha Coefficient*	*Content Validity Index*
Stakeholder Engagement	5 Point	.921	.921
Community Participation	5 Point	.762	.842
Stakeholder Commitment	5 Point	.745	.765
Sustainability of Water Projects	5 Point	.948	.738

Reliability of the questionnaire was carried out to determine reliability, a measure or test was repeated several times, on the same participants. Reliability results ensured that the research items were worthy using since they adopted Cronbach's alpha values above 0.7. This implied that the scales to be used to measure the study were consistent and reliable. Results were compared and correlated with the previous tests to give a measure of reliability. Pretesting of the research instrument in conditions as similar as possible to the research, but not in order to report results but rather to check for glitches in wording of questions, lack of clarity of instructions and anything that could impede the instrument's ability to collect data in an economical and systematic fashion from potential respondents.

3.9 Data Editing and Presentation

When data was collected, it was necessary to process it for proper presentation. Editing the data was preparatory work before the tabulation and statistical analysis were carried out. This process specifically ensured that questionnaires were complete and that all questionnaires were answered. For contradicting responses from the same respondents, they were dealt with to avoid inconsistencies or any errors due to arithmetic treatment. As the data was processed by a computer, then it was also converted in computer language for qualitative characteristics.

3.10 Data Processing and Analysis

After collecting the data using a pre-coded questionnaire, it was edited, the researcher carried out tests for assumptions of parametric data and missing values of the data set. Statistical package for social scientists (SPSS) version 23.0 was used for data entry and analysis. Pearson Correlation analysis was used to establish the strength of the linear relationship between stakeholder engagement, community participation, stakeholder commitment and sustainability of water supply and sanitation projects. Multiple Regression analysis was also

used to determine the predictive potential of stakeholder engagement, community participation, and stakeholder commitment on sustainability of water supply and sanitation projects.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter presents and explains the results and the interpretation of the survey findings. The presentation is guided by the research objectives and the statistics were generated with the aim of ascertainment of responses to the research hypotheses set earlier. The chapter begins with the presentation of the descriptive statistics and later inferential statistics for measureable relationships according to the study objectives below.

a) To investigate the relationship between stakeholder engagement and community participation to the project.
b) To analyze the relationship between stakeholder engagement and stakeholder commitment.
c) To establish the relationship between community participation and stakeholder commitment.
d) To determine the relationship between stakeholder commitment and sustainability of rural water supply and sanitation projects.
e) To find out the relationship between community participation and sustainability of rural water supply and sanitation projects.
f) To establish whether there is relationship between stakeholder engagement and sustainability of rural water supply and sanitation projects.

4.2 Descriptive Statistics

4.2.1 Respondent Characteristics

This section presents background information on the respondents such as their gender, age, position held and education levels expressed in frequency tables and project profile which includes project location, type, duration and source of funding also presented in table form with generated respective frequencies. The findings are shown in table 4.1

Table 4.1: Characteristics of Respondent

Characteristics	Details	Count	Percent	Cumulative Percent
Category of Stakeholder	Beneficiary	87	38.3	38.3
	Project Coordinator	140	61.7	100.0
	Total	**227**	**100.0**	
Gender	Male	133	58.6	58.6
	Female	94	41.4	100.0
	Total	**227**	**100.0**	
Marital Status	Single	29	12.8	12.8
	Married	182	80.2	93.0
	Divorced	6	2.6	95.6
	Widowed	10	4.4	100
	Total	**227**	**100.0**	
Age group of the respondent	Below 20 years	2	1.0	1.0
	20 to less than 30	60	26.4	27.4
	30 to less than 40	128	56.3	83.7
	40 and above	37	16.3	100
	Total	**227**	**100.0**	
Position held by the respondent	Chairman	112	49.3	49.3
	Coordinator	36	15.9	65.2
	Treasurer	8	3.5	68.7
	User	71	31.3	100
	Total	**227**	**100.0**	
Respondents level of education	Primary level	20	8.8	8.8
	O level	36	15.9	24.7
	A level	18	7.9	32.6
	Diploma	18	7.9	40.5
	Degree	135	59.5	100
	Total	**227**	**100.0**	

Source: Primary Data.

As presented in table 4.1 above, results indicate that majority of the respondents were project coordinators (61.7%), while 38.3% counted for the beneficiaries, implying that the project coordinators were the majority stakeholders who responded since they are the project implementer with technical knowledge for the water facilities compared to the beneficiaries.

Results further revealed that majority of the respondents interviewed were male (58.6%) while the rest were female (41.4%), implying that the beneficiaries and coordinators of rural

water supply and sanitation projects in Jinja District is fairly dominated by the male individuals because they are the most stakeholder being engaged in the water project.

Additionally, majority of the respondents in the project organisation were married (80.2%), followed by single with (12.8%), Widowed (4.4%) and the least being divorced (2.6%), this implied that majority of the respondents were married, have some level of maturity and responsibility towards the society in which they live and they are the stakeholders with critical interest for the project.

Results also showed that most of the respondents (5 6.3%) were between 30 to less than 40 years while very few (1.0%) were below 20 years. 26.4% respondents were at the age of 20 to less than 30 years and 16.3% are above 40 years of age. This imply that majority of the beneficiaries and coordinators of rural water supply and sanitation projects in Jinja District are middle-aged adults and these are the responsible groups and most affected by the water project failure.

It was also noted that majority of the respondents (49.3%) held the position of chairman, while (31.3%) were users, (15.9%) were coordinators and only (3.5%) were treasurers; implying that these projects must be monitored by a selected committee and these committees have to be run by the chairman person responsible for mobilizations of the project stakeholders when for work progress or problem solving.

When respondents were asked about their highest level of education, it was noted that most of them (59.5%) were degree holders, followed by O-level (15.9%) and Primary, while A-level (7.9%) and Diploma level (7.9%) were the least. This imply that they had the capacity for implementing the water projects and understand sustainability issues.

4.2.2 Descriptive characteristics of the projects

This section presents descriptive characteristics of the projects on the county and sub-county where project is located, period for which project has run, source of funding and type of water project. The findings are shown in table 4.2

Table 4.2: Descriptive characteristics of the projects.

Characteristics	Details	Count	Percent	Cumulative Percent
County where project is located	Butembe	13	27.0	27.0
	Kagoma	35	73.0	100
	Jinja Municipality	0	0	
	Total	**48**	**100.0**	
Sub County where project is located	Busedde	10	20.8	20.8
	Kakira	2	4.2	25.0
	Mafubira	3	6.3	31.3
	Buwenge	22	45.8	77.1
	Buyengo	11	22.9	100
	Total	**48**	**100.0**	
Period for which project has run	Less than 2 years	2	4.1	4.1
	2 - 5 years	17	35.4	39.5
	6 - 8 years	21	43.8	83.3
	More than 8 years	8	16.7	100
	Total	**48**	**100**	
Source of funding	Donor through Government	3	6.2	6.2
	Donor Direct	10	20.8	27.0
	Government	35	73.0	100
	Total	**48**	**100.0**	
Type of water project	Borehole	13	27.1	27.1
	Shallow dug well	23	47.9	75.0
	Protected spring	10	20.8	95.8
	Harvested	2	4.2	100
	Total	**48**	**100.0**	

Source: primary data

The results in table 4.2 above show the profile of the rural water supply and sanitation projects in Jinja District. It includes information on location of the project, period for which project has been running, source of funding for the project and the type of water project.

The results in table 4.2 indicates that majority of the water projects (73.0%) are found in Kagoma county because it's the largest county in the district, with the rest of them being in Butembe. that is to say (27.0%) water projects. But also it was reflected that majority of the water projects (95.9%) had been in operation from 2 to more than 8 years, showing that these water facilities can be sustainable but say the bureaucracy in the funding and other problems in the system may be the issue, while (0.0%) such water projects were located in Jinja Municipality since the town has only piped water system.

At sub-county level, Buwenge sub-county had majority of the projects (45.8%), this because the sub-county is wide and fairly populated. For the type of water project, most of the

projects (47.9%) were shallow dug wells, and (27.1%) were boreholes. The cost of project implementation and maintenance for the shallow dugs well types are fairly cheaper than that of the boreholes.

It was also revealed that most of the projects (73.0%) were government funded projects with a few (20.8%) being donor funded and very few (6.2%) being donor funded through government as indicated in the table above. The government are the majority funders because they are the one who carry out the planning, budgeting and resource allocation, community mobilization and ensure their effective participation and involvement in this projects for effect benefit realization and sustainability issues.

4.3 Correlations Analysis

According to the study objectives in chapter one, Table 4 shows coefficients of Pearson correlation for the tested conceptual relationships between independent variables (Stakeholder engagement, and Community participation) and the Stakeholder commitment. It also shows the relationship between Stakeholder commitment and Project sustainability.

Table 4.3: Zero Order Correlations

		1	2	3	4
1	Stakeholder Engagement	1.000			
2	Community Participation	.534**	1.000		
3	Stakeholder Commitment	.472**	.492**.	1.000	
4	Project Sustainability	.545**	.501**	.483 **	1.000
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: primary data

4.3.1. The relationship between Stakeholder Engagement and Community participation to the project.

There is a significant positive relationship between Stakeholder Engagement and community participation ($r= 0.534$, $P\leq 0.01$). This implies when the participating community members develop strong interest for interaction with the project agencies while contributing towards the project costs and are fully involved in decision making for projects, they will pick high interest for the project and will becomes fully engaged stakeholders. This will also increase

the level of engagement for the community in project and with the practice of interacting and influencing other diverse community members to the overall benefit of the project and its advocates, they will become dedicated and fully absorbed in all tasks of the project. This result also imply that by increasing community participation, they can be in position to improve the collective action and problem solving through increased trust and stronger community ties that motivates them to work together and be psychologically present in the project. This fosters stakeholders to have vigor with positive views, to feel and work with a sense of oneness to recognize the benefits of their involvement in the project.

4.3.2 The relationship between stakeholder engagement and stakeholder commitment.

There was a significant positive relationship between stakeholder engagement and stakeholder commitment ($r= 0.472$**,** $P\leq 0.01$). This implies that when stakeholder apply vigor, dedication and absorption within the community projects, increases stakeholders' affective, normative and continuance commitment. The engagement also will improve since stakeholders are fully psychologically present to give their all to the project and are willing to go extra mile to achieve project objectives. This also implies that one winning strategy for project commitment would be to develop a culture of stakeholder engagement by developing and nurturing a strong relationship with key stakeholders.

4.3.3 The relationship between community participation and stakeholder commitment.

There is a significant positive relationship between community participation and stakeholder commitment ($r= 0.492$, $P\leq 0.01$). When the communities get involved and interact, make decision and contribute towards the costs of the project activities, many other stakeholders become immersed in the project activities by having the desire and feeling obligated to stay with the project besides avoiding to lose the value of the project they are doing. It also implies that stakeholders need to be commitment and take part actively in the project for its success and overall benefits.

4.3.4 The relationship between stakeholder commitment and sustainability of rural water projects.

There was a significant positive relationship between stakeholder commitment and sustainability of rural water projects ($r= 0.483$ $P\leq 0.01$). This implies that when stakeholders are emotionally attached to the project, their values and beliefs are aligned to the project's core values so they are obligated to stay in the project and they tend to sustain their projects

to avoid losing the value by attending to the measures of its physical structures, participating in O&M activities and also monitoring their functionality. Furthermore, results imply that for project to be sustainable, project stakeholders must have a strength of affective, normative and continuance commitment to bind each individual to a course of relevance to particular target in the project's outcome which will foster its sustainability.

4.3.5 The relationship between community participation and sustainability of water projects

There was a significant positive relationship between community participation and sustainability of rural water projects ($r= 0.501$ $P\leq 0.01$). This implies that when community's concerns in decision making, interaction and contributions are taken into account while running projects, the projects stand a great likelihood of succeeding thus delivering sustainable results. Results also imply that the involvement of diversity of participants of all concerned community members at the relevant level, not only for the sake of efficiency and equity of the projects, leverage of donors and demands of local communities, but also for sustainability of these initiatives.

4.3.6 The relationship between stakeholder engagement and sustainability of projects

There is a significant positive relationship between stakeholder engagement and project sustainability ($r= 0.545$, $P\leq 0.01$). This implies that when stakeholders are dedicated, absorbed in the project and work with vigor, they tend to sustain their projects. Further, the results imply that for project to be sustainable, projects stakeholders must have a strong sense of psychological ownership for the outcome of the projects by being willing to sustain their projects and also contributing to the O&M costs...

4.4 Regressions Model Analysis

In order to establish the variance explained by each of the independent variables: stakeholder engagement, community participation and stakeholder commitment towards the dependent variable the project sustainability as indicated in the conceptual framework, regression analysis was conducted. The results in table 4.4 below show that the predictor variables (stakeholder engagement, community participation and stakeholder commitment) can explain at least 50.0% (Adjusted R square = .500) of the variations in the project sustainability for rural water projects in Jinja District.

Table 4.4: Regressions Model

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	.363	.204		1.784	.075
Stakeholder Commitment	.288	.074	.245	3.888	.000
Stakeholder Engagement	.310	.073	.293	4.261	.000
Community Participation	.294	.072	.282	4.087	.000
R	.711				
R Square	.505				
Adjusted R Square	.500				
F	101.952				
Sig	.000				
a. Dependent Variable: Project Sustainability *(*Source: *primary data)*					

The implies that there was a significant model fit (β= .500, p≤0.01) between stakeholder engagement, community participation, stakeholder commitment and project sustainability with 50% of the variations in project sustainability being explained by the three independent variables (stakeholder engagement, community participation and stakeholder commitment) in the model. A unit change in stakeholder commitment brings about a .245 change in project sustainability (β= .245, p≤ 0.01), a unit change in stakeholder engagement brings about a

.293 change in Project Sustainability (β= .293, p≤ 0.01), and a unit change in community participation brings about a .282 change in project sustainability (β= .282, p≤ 0.01).

And of the three variables stakeholder engagement was found to be a better predictor variable of project sustainability than the other two variables. This implies that once stakeholders are engaged and their concerns and contributions are taken into account in the course of implementing water projects, the projects stand a great likelihood of succeeding and achieving sustainability since the stakeholders are fully psychologically present as they give their all to the project and are willing to go an extra mile to make the project sustainable.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS OF STUDY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter includes the Summary and Discussion of findings. It presents the information about the variables and their comparison between different categories of respondents and the results in relation to the literature as guided by the research hypothesis. It also contains Conclusions, Recommendations and areas for further study.

5.2 Discussions

The study also focused on the predictive potential and strength of relationships of stakeholder engagement, community participation, stakeholder commitment and project sustainability as discussed below;

5.2.1The relationship between stakeholder engagement and community participation

The results indicate that a significant positive relationship between stakeholder engagement and community participation. This implies that communities with a high level of stakeholder engagement are likely to participate more efficiently in community developments as they freely interact and share opinions about the projects with one another. Engagement has the characteristic of involvement, commitment, passion, enthusiasm, absorption, focused effort, and energy and by these, it implies that if engaging stakeholders to the water projects would transform the community to adopt these engagement characteristics into project participation. This also implies that the basis for community participation here plays a role of improving empowerment and responsiveness to communities' real needs, that instill a sense of ownership for the water projects by the rural community and promoting sustainability. This study is supported by the work of Gruman et al., (2010), who states that stakeholder engagement is the actions individuals must take to obtain the greatest benefit from the project services available to them, which helps communities to assume responsibility with affection for their own welfare, develop capacity to contribute to the projects by participating. This finding is also supported by earlier scholars like Katsoulakos and Katsoulacos (2007), who argued that engagement with different stakeholders promotes the relationship between stakeholder interactions which may also encourage the community to participate by understanding them better and could encompass providing strategies, processes and

infrastructure to enable the project achieve its goals. Furthermore, this finding is supported by the works of Sonnentag et al., (2010) who assert that having the full, three-dimensional state of engagement (vigor, dedication & absorption) can be more of a transient state, a 'positive crossover' aspect of engagement that shows how engaged stakeholders can influence those working around them, and are expected to transfer the individual work engagement to the participating community in the project activities. This confirms the positive relationship between stakeholder engagement and community participation.

5.2.2 The relationship between stakeholder engagement and stakeholder commitment.

Results from correlation coefficients indicated that there is a significant positive relationship between stakeholder engagement and stakeholder commitment to the project. This means that for stakeholders to be committed to the project, they must be highly engaged in the activities of the project. One of the winning strategy for project commitment is by engaging stakeholder in the project activities as a culture and this action of engagement will results into developing and nurturing a strong relationship with key stakeholders. This implies that engaged stakeholder will always make an effort to align their mutual interest to reduce risk and failures in projects, this process makes the whole team of the project stakeholders to be commitment to the project activities for positive results. The finding is supported by the work of Wefald, (2008), who found that all three components of commitment (effective, normative and continuance) correlate with the three components of engagement (vigor, dedication and absorption). This is in line with Kerzner (2006) who asserts that stakeholder engagement leads to increased commitment to the project. Cohen (2007) adds that those individuals with high levels of project involvement reciprocate with increased affective organizational commitment to the persons who caused them. Stakeholder engagement and commitment to the project is further emphasized by Cohen's (2000) study, who found a strong relationship between role participation and organizational commitment. This is also supported by Wilermuth and Pauken (2008) who established that because engaged stakeholders are fully psychologically present, they give their all to the project and are willing to go extra mile to achieve project success which in return strengthens their commitments to the project. With stakeholder's engagement, not only can the most important needs be identified, but by having the stakeholders play a role with commitment in the entire project cycle.

5.2.3 The relationship between community participation and stakeholder commitment.

The results show a significant positive relationship between community participation and stakeholder commitment. Community participation positively affects stakeholder commitment implies that when community participate in projects, they affect stakeholders in many ways, such as it strengthen interpersonal relations, improve decision-making, ensure representation of social diversity groups, help clarify and stabilize communication between stakeholders, and also encourage local ownership and accountability of the project resources. These activities will in result into stakeholder' commitment to the project. The study is supported by the finding of FAO (2010) who argues that the ability of community participants to participate in the development activities will assure that the projects' ideas are demand-driven and can lead to effective participation in the project activities with the commitment of the project stakeholders. This finding is also support by the study of Becker (2009) who states that stakeholders can and do develop commitments towards targets such as their projects**,** coordinators and work groups**,** and goals, and these commitments have consequences that attract community participation for the project-relevant outcomes. This study is also support by the works of Muhangi (2007) who asserts that the rationale for community participation has been thought to be a means of enhancing empowerment, enhancing responsiveness to people's real needs, instilling a sense of ownership of projects by the local people thus promoting stakeholder's commitment. Kakumba (2010) and Nsingo (2008) also institute that community participation lies in the involvement of people in a wide range of activities, including the determination of levels of service and the acceptability of physical projects in order to orient projects toward community needs, build the entire public support and encourage a sense of cohesiveness and humanity within the society hence giving as sense of stakeholders commitment to the project activities.

5.2.4 The relationship between stakeholder commitment and sustainability of rural water projects.

There was a significant positive relationship between stakeholder commitment and sustainability of rural water projects. This implies that the success of the water project is attributes to the stakeholders' commitment whereby, a high-commitment environment will improve project's retention rate, reduce operating costs and promote project performance and efficiency thus resulting into sustainability of the project. Stakeholders with high levels of role contribution will reciprocate in the form of greater affective commitment to the project which will lead to increased performance and thus sustainability. The study findings is

supported by Saudi (2014) who asserts that when stakeholders have high level of commitment at a project they see themselves as true members of the project and are more likely to embrace the project success values and beliefs, by such level of commitment, and the project activities can become more sustainable after the closure. This is in line with Winter et al., (2006) in a study for assessing the relative influence of a project's stakeholders to the performance of the project, found out that understanding stakeholders' expectation as a result of involving them in the various stages of the project life cycle is essential in building their commitment to the project activities, thus achieving its sustainability. This finding is also supported by the works of Liou (2008) who attributes the success of any project to the stakeholders' commitment as they participate with affection towards the project which improves the project's retention rate, reduces operating costs and promotes project performance and efficiency, thus ability to sustain the project. Further this in line with Bourne (2008) who's argument does not differ from the arguments of other researchers as he contends that one winning strategy for project sustainability would be to develop a culture of stakeholder commitment by developing and nurturing a strong relationship with key stakeholder involvement in the project activities.

5.2.5 The relationship between community participation and project sustainability

The results indicate a significant positive relationship between community participation and project sustainability. It was found out that once communities participate by taking up roles in the project this is likely to translate in project sustainability. This implies that participation of communities based on their willingness to contribute increases effectiveness, efficiency, empowerment, equity, coverage and the overall sustainability of water supply projects. This also implies that the key to project sustainability is to meaningfully involve the users in the planning, implementation, operation, protection and maintenance of water supply systems according to their needs and potentials. The study findings are in agreement with those of Nikkhah & Redzuan, (2010) who argued that for water projects to gain sustainability, community's views should be greatly considered, this could be in terms of interaction intensity, diversity of participants and capital contribution for project input. This is in agreement with the findings Mark (2008) where community participation is seen as one of solutions to the problems of project sustainability, not only would participatory approaches assist project sustainability but it is also argued that participation would make projects more efficient and effective. In line to (Mukunga 2012) study, community participation is now widely accepted as one important condition to achieve sustainable water and sanitation

developments as it sets research priorities and assists in the assessment of the effectiveness of outputs' implementation of sustainable projects. This has influenced the overall performance of the projects. Moreover, in a study carried out by Sseruwagi, (2012), revealed that participation influence project sustainability if it included all stakeholders especially user communities throughout the project cycle; from the identification, execution and maintenance, to the evaluation of the project, the involvement of the community included regular meetings conducted every interval of set period involving the representatives of the communities, training on management and administration.

5.2.6 The relationship between stakeholder engagement and sustainability of rural water projects.

The results reveal a significant positive relationship between stakeholder engagement and sustainability of rural water projects. The study findings indicate that water projects can achieve sustainability related results only if stakeholders are absorbed and dedicated to the project activities. Stakeholder engagement involves the element of "emotional attachment" or "the state of being in gear", which means in engagement, fulfillment exists. It implies that at the level of fulfillment, stakeholder engagement always provide opportunities to further align project practices with community needs and expectations aiding to drive long term sustainability and shareholder value as benefits of the project outcome thus achievement of the water project. This is in line with Pritchard, (2008) who confirmed that a well-managed stakeholder engagement process helps the project stakeholders to work together to increase comfort and quality of life, while decreasing negative project impacts and thus increasing the economic sustainability of the project. The result is also in line with a study carried out by Noland and Phillips (2010), which revealed that engagement with stakeholders supports project objectives and puts the project members in a position to support project initiatives as there is an enabling environment where stakeholders are actively engaged in all the project initiatives thus giving the project a sustainable aid. The study findings also agree with Sloan (2009) who argued that stakeholders who are highly engaged in the project will put forth substantial effort towards the achievement of the project objectives and will be less likely to withdraw from project work yet stakeholders who are lowly involved in the project work are more likely to abandon the project and/or withdraw effort from the project work and either apply that energy to tasks outside the scope of the project or engage in various undesirable activities.

5.3 Conclusions

It was established from the study that there was a significant positive relationship between stakeholder engagement and community participation (r= 0.534, P≤ 0.01), a significant positive relationship between stakeholder engagement and stakeholder commitment to the project as indicated by Pearson's correlation coefficient (r= 0.472**,** P≤ 0.01), significant positive relationship between community participation and stakeholder commitment(r= 0.492, P≤ 0.01), significant positive relationship between stakeholder commitment and sustainability of rural water projects (r= 0.483 P≤ 0.01 level of significance), significant positive relationship between community participation and sustainability water projects (r= 0.501 P≤ 0.01), significant positive relationship between stakeholder engagement and sustainability of water projects, (r= 0.545, P≤ 0.01).

The researcher concluded that stakeholder engagement was a better predictor of project sustainability than all the independent variable used in conceptual model, hence stakeholders are required to be actively involved in the project. This can be done by consulting all stakeholders, taking up roles and making decisions concerning the water projects impacting their lives, while gearing project activities for sustainable results.

The stakeholders also need to be fully engaged to these community projects so that they can fully be psychologically present, giving their all to the project and be willing to go an extra mile to achieve the sustainability of the project. Project managers therefore need to understand that having stakeholders that are fully engaged in the project activities results into better project sustainability, this means their involvements should not be neglected right from the start of the project.

The beneficiaries of the project need to interact directly and frequently with the project stakeholders as active collaborators and partners, from the start to the end of the project in many ways, that will generate opportunities and potential for members of the group, and gain a competitive advantage by being part of the decision making process in pursuing their ends.

In line with the above theoretical review, it is clear that vast literature related to the study variables have been conducted. It has been observed however, that most of the established relationships have been conducted in developed environments. Also, no aggregative study

had been conducted to examine their collective impact on sustainability of rural water supply and sanitation projects which are continuing to increase globally. It was then relevant that the pattern of their relationships is tested in a context of a developing country like Uganda for more logical and worldwide conclusion as well as the application of these relationships.

5.4 Recommendations

In line with the findings, discussions and the conclusions of the study, the following recommendations were drawn;

There is need to make the stakeholders be engaged in every part of the project activities and in all tasks of the project life cycle phases especially at implementation level of water projects. It is therefore recommended that project managers ensure that stakeholders highly participate in the project activities. This can be achieved through identifying them early, consulting them, and allowing them to take part in the decisions regarding the project, creating interactions with the project community.

The government and its donor groups should engage the stakeholders and manage the process well since this will help the project stakeholder to work together during collection of the data and reporting information according to the project plans, budget and requirements for monitoring purpose and to increase comfort and quality of the project life, to decrease negative project impacts and increase the economic sustainability of the project.

Further, project coordinators and community representatives should create an environment where stakeholders are fully engaged and interact directly, frequently, in multifaceted ways, generating opportunities and potential for members of a group, who can gain a competitive advantage in pursuing their ends. This will improve the effectiveness and efficiency of rural water projects in Uganda and the world at large.

There is need to engage project team and all other stakeholders (both primary and secondary) in decision making process and in all tasks of the project life cycle phases especially at implementation level of water projects. This will transform the rural community through increased participation and commitment for developmental projects, as they share, trust and reciprocity to support members' collective effort, thus increasing the level of participant commitment in the project that will enhance its sustainability.

5.5 Limitations to the study

The data collection instrument was a standard questionnaire which limited the ability to collect views about information outside asked question. The researcher adopted some open ended questions to solicit unstructured views about the sustainability of the water projects.

The study focused on a cross sectional research design, the behaviors of the variables over a long time could not be completely analyzed which restricted the applicability of the findings as a longitudinal study which may give different results from the ones that were obtained.

Some respondents especially project coordinators were not willing to give all the required information because of fear to expose the organization. This is likely to cause a biased response. However the researcher was able to overcome this by spending time with respondents and thoroughly explaining to the respondents the sole purpose of the study.

The intended instruments for the study were designed for use in developed countries which could have resulted into inappropriateness for studies in Ugandan Projects. However, it is assumed that the modifications made to these tools might have either reduced errors or eliminated biased results.

5.6 Suggested Areas for further Research.

Further researchers may focus on stakeholder engagement process and sustainability of rural water projects using a longitudinal research design.

Future researchers can explore the same concept with a wider sample involving other stakeholders like the project staff, donors, and project managers among others. This is so because the study only captured the perceptions of project beneficiaries and project coordinators that had taken part in executing rural water projects and yet accommodation of various stakeholders could give a different view.

Further research should be undertaken to test the relationship between stakeholder engagement, community participation, stakeholder commitment and sustainability of projects in other sectors like in the different ministries such as construction, agriculture, energy and others. These sectors normally receive a lot of funding for sustainable projects development but very few are always successful.

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APPENDIX (I) QUESTIONNAIRES

MAKERERE UNIVERSITY BUSINESS SCHOOL

ACADEMIC RESEARCH QUESTIONNAIRE

CONFIDENTIAL

Dear Respondent,

I am Elizabeth Yvonne Lalam, a student of Makerere University – Makerere University Business School offering a two year course of a master Degree in Business Administration. I am conducting a research on the topic entitled **Stakeholder Engagement, Community Participation, Stakeholder Commitment and Sustainability of Water Supply and Sanitation Projects in Uganda.** You have been identified as a key informant, please spare a few minutes of your busy schedule to fill this questionnaire. The responses will be aggregated to the projects and used purely for academic research. Your honest and sincere responses are highly appreciated and shall be treated with utmost confidentiality.

SECTION A ***(Please tick/fill-in as appropriate)***

RESPONDENT INFORMATION

1) Category of stakeholder: [1] Project Coordinator [2] Project Beneficiary

2) Gender: [1] Male [2] Female

3) Marital status: [1] Single [2] Married [3] Divorced [4] Widow/Widower

4) Age bracket: [1] Below 20 years [2] 20-29 years [3] 30-39 years [4] 40 & above years

5) Educational status: [1] Primary [2] O level [3] A level [4] Diploma [5] Degree

PROJECT INFORMATION

6) Current position in the executive of the project

[1] Chairperson [2] Coordinator [3] Treasurer [4] User

7) Name of the county where the project is located

[1] Butembe [2] Kagoma [3] Jinja Municipality

8) Name of the sub county where the project is located

[1] Busedde [2] Kakira [3] Mafubira [4] Budondo [5] Buwenge

[6] Butagaya [7] Buyengo [8] Jinja Municipality

9) Period for which the project has been running:

[1] Less than 2 years [2] 2- 5 years [3] 6-8 years [4] more than 8 years

10) Source of funding for the project

[1] Donor through government [2] Donor directly [3] Government

11) Type of the water project

[1] Borehole [2] Shallow dug well [3] Protected Spring [4] Harvested

SECTION B: Stakeholder engagement

Please indicate the extent to which you agree with the following statements concerning stakeholder engagement in your project

.	**Vigor (Vgr, in short version)**	**Strongly Disagree**	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
Vgr1	At my project work, I feel that I am bursting with energy.	1	2	3	4	5
Vgr2	At my project work, I feel fit and strong.	1	2	3	4	5
Vgr3	At my project, I am very resilient, mentally.	1	2	3	4	5
Vgr4	At my project, I can tolerate the pressure of my work well.	1	2	3	4	5
Vgr5	I always persevere at my project even when things don't go well.	1	2	3	4	5
Dedication=(Dcn, in short version)						
Dcn1	My project has full meaning and purpose to me.	1	2	3	4	5
Dcn2	I am enthusiastic about the tasks I must accomplish for the project.	1	2	3	4	5
Dcn3	I am inspired by my project goals and I enjoy being a part of the project.	1	2	3	4	5
Dcn4	I am proud of my project goals and the work I do.	1	2	3	4	5
Dcn5	My project activities are challenging to me and motivates me to do a good job.	1	2	3	4	5
Absorption =(Abs, in short version)						
Abs1	I forget everything else around me when working in the water project.	1	2	3	4	5
Abs2	I feel happy when I am working intensively to sustain my project system.	1	2	3	4	5
Abs3	When I am working in the project, I am immersed in my work and time flies so fast.	1	2	3	4	5
Abs4	I get carried away when I am working with the project team during maintenance of the water systems.	1	2	3	4	5
Abs5	It is difficult to disengage myself from my project work.	1	2	3	4	5

SECTION C: Community participation

Please indicate the extent to which you agree with the following statements concerning community participation in your project.

Community participation		**Strongly Disagree**	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
Interaction intensity=(Cpi, in short version for community participation & interaction intensity)						
Cpi1	I was consulted to identify the needs of community water project.	1	2	3	4	5
Cpi2	I was involved in the meeting for prioritization process of the project activities.	1	2	3	4	5
Cpi3	I was consulted when developing action plans to the water project activities.	1	2	3	4	5
Cpi4	I get regular information on planning of the project activities.	1	2	3	4	5
Cpi5	I was selected among the committee to mobilize and manage the water project resources.	1	2	3	4	5
Community Capital contribution =(Cpc, in short version for community participation & community capital contribution)						
Cpc1	I am willing to contribute the capital for the water source project when consulted to gather and identify their needs or problems.	1	2	3	4	5
Cpc2	I prioritize my resource towards my capital contributions as resolved through community collaboration.	1	2	3	4	5
Cpc3	I am consulted on what I can contribute for the project development as decided by the project stakeholders.	1	2	3	4	5
Cpc4	My views on water facilities capital contributions are always considered and I decide whether to bring in kind or cash.	1	2	3	4	5
Cpc5	I have given my land as a capital contribution for the water project.	1	2	3	4	5
Diversity of participants=(Cpi, in short version for community participation & diversity of participation)						
Cpp1	The community were involved in decision making for the project.	1	2	3	4	5
Cpp2	The project encouraged all genders to participate.	1	2	3	4	5
Cpp3	The project did not segregate any community member from participating in the project activities.	1	2	3	4	5
Cpp4	There was no distinction made among the various groups in my community during selection of the water user committees.	1	2	3	4	5
Cpp5	During the project implementation training was open to all groups and community perspectives were solicited.	1	2	3	4	5
Decision Making=(Cpi, in short version for community participation & decision making)						
Cpd1	The community participated in selecting this water project.	1	2	3	4	5
Cpd2	The community was consulted to give their view on the issue of cost sharing for the water project.	1	2	3	4	5

Cpd3	The community attended training programs for decision making on various water projects in my area	1	2	3	4	5
Cpd4	The community members participated in the selection of water user committee members.	1	2	3	4	5
Cpd5	The community participated in deciding the sanction measures for the project misuse.	1	2	3	4	5

SECTION D: Stakeholder Commitment

Please indicate the extent to which you agree with the following statements concerning stakeholder commitment in your project

Affective=(Aff, short version)		**Strongly Disagree**	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
Aff1	I would be very happy to spend the rest of my career with this project.	1	2	3	4	5
Aff2	I feel a strong sense of belonging to my project and I enjoy discussing it with outside people.	1	2	3	4	5
Aff3	I really feel as if this project's problems are my own and I find my work to be a positive challenge.	1	2	3	4	5
Aff4	I am emotionally attached to my work and I feel more and more engaged in it.	1	2	3	4	5
Aff5	This project has a great deal of personal meaning for me.	1	2	3	4	5
Normative= (Nor, short version)						
Nor1	I feel I have an obligation to keep performing in this water project activities.	1	2	3	4	5
Nor2	Even if it were to my advantage, I do not feel it would be right to leave my project now.	1	2	3	4	5
Nor3	I owe a great deal to this project and I feel guilty if I am to leave it now.	1	2	3	4	5
Nor4	I would be very happy to spend the rest of my career with this project.	1	2	3	4	5
Nor5	I have a sense of obligation to the community of this water project projects.	1	2	3	4	5
Continuance= (Con, short version)						
Con1	I am afraid of what might happen if I quit this project without having another one lined up.	1	2	3	4	5
Con2	I feel that I have too few options to consider leaving this project.	1	2	3	4	5
Con3	Too much in my life would be disrupted if I decided to leave this project now.	1	2	3	4	5
Con4	It would be too costly for me to leave this project right now.	1	2	3	4	5

Con5	I think no other activities can match the benefits that the water project activities present to me.	1	2	3	4	5

SECTION E: Project Sustainability

Please indicate the extent to which you agree with the following statements concerning sustainability of your project.

Physical condition =(Phc, short version)		StronglyDisagree	**Disagree**	NotSure	**Agree**	StronglyAgree
Phc1	This water project has been in good condition since it was implemented.	1	2	3	4	5
Phc2	Most of the project systems including the hand pumps are working.	1	2	3	4	5
Phc3	There were serious defects in the construction of the project.	1	2	3	4	5
Phc4	I have noticed some exposed leakages in this water project.	1	2	3	4	5
Phc5	This water project has been abandoned since its break down.	1	2	3	4	5
Operations and maintenance =(Opm, short version)						
Opm1	There are people appointed to manage the project system	1	2	3	4	5
Opm2	There is a project system operator who is being paid for the work.	1	2	3	4	5
Opm3	The operators are sufficiently trained to perform their job to undertaken major repairs.	1	2	3	4	5
Opm4	The water system has failed many times in the last years.	1	2	3	4	5
Opm5	When the water system breaks down, it takes few days to be repaired.	1	2	3	4	5
Functionality=(Fun, short version)						
Fun1	There are readily available spare parts for the water source facilities.	1	2	3	4	5
Fun2	The project has not broken down for the last 6 months.	1	2	3	4	5
Fun3	When it breaks down it does not take the committee more than one week to have it repaired.	1	2	3	4	5
Fun4	This water project has been functioning for the last one year.	1	2	3	4	5
Fun5	This constructed water project meets the expected benefits in this community.	1	2	3	4	5

Willingness to sustain =(Wts, short version)						
Wts1	This water project belongs to my community.	1	2	3	4	5
Wts2	My community has the financial capacity to keep the project working over the next 5 years.	1	2	3	4	5
Wts3	My community members are willing to pay money for improvements.	1	2	3	4	5
Wts4	My community members are willing to contribute labor and materials in case of any problem with the water source project.	1	2	3	4	5
Wts5	My community members work together with the project administrators to sustain the water projects.	1	2	3	4	5

Thank you very much for your time!

APPENDIX (II) WATER PROJE

WATER PROJECT DATA RAMDOMLY SELECTED IN JINJA DISTRICT SOURCE BUSOGA TRUST, 2015												
Latitude	Longitude	District	County	Sub County	Parish	Village	Source Name	Year of last rehabilitation	Details of rehab	Year of Construction	Water Source Type	Functionality
0.53472	33.16222	Jinja	Kagoma	Budondo	Buwagi	Buwagi	Buwagi Akibonaobubi			1993	Shallow Well	Fully Functional
0.5	33.19528	Jinja	Butembe	Mafubira	Namulesa	Wakalenge	Wakalenge			1990	Deep borehole	Fully Functional
0.54583	33.16167	Jinja	Kagoma	Budondo	Buwagi	Buwagi Bawalan	Buwagi Bawalanswa			1993	Shallow Well	Non-Functional
0.56972	33.19972	Jinja	Kagoma	Budondo	Nawangoma	Lukolo	Lukolo Bumafuse	2011	Minor	1988	Shallow Well	Partially Functional
0.57333	33.18778	Jinja	Kagoma	Budondo	Nawangoma	Buwaya	Buwaya			1989	Shallow Well	Non-Functional
0.56333	33.18722	Jinja	Kagoma	Budondo	Nawangoma	Lukolo	Lukolo			1995	Deep borehole	Fully Functional
0.56306	33.18694	Jinja	Kagoma	Budondo	Nawangoma	Lukolo	Lukolo West	2007	Minor	1993	Shallow Well	Non-Functional
0.54389	33.14722	Jinja	Kagoma	Budondo	Buwagi	Naikazi	Naikazi	2013	Minor	1992	Shallow Well	Fully Functional
0.525	33.185	Jinja	Kagoma	Budondo	Nawangoma	Kagera	Nawangoma- Kagera			2010	Shallow Well	Fully Functional
0.53639	33.16528	Jinja	Kagoma	Budondo	Nawangoma	Kagera	Ndimukika -Kagera			1994	Shallow Well	Fully Functional
0.54722	33.16444	Jinja	Kagoma	Budondo		Wabene	Wabene			1992	Shallow Well	Non-Functional
0.48111	33.18222	Jinja	Butembe	Mafubira	Buwenda	Buwenda	Buwenda			2011	Shallow Well	Fully Functional
0.52194	33.20583	Jinja	Butembe	Mafubira	Lwanda	Isikwe	Isikwe			1994	Shallow Well	Fully Functional
0.65083	33.08972	Jinja	Kagoma	Butagaya	Budima	Buwuma East	Buwuma East	2008	Minor	1995	Shallow Well	Fully Functional
0.63972	33.08389	Jinja	Kagoma	Butagaya	Budima	Buwuma Centra	Buwuma Central			2001	Shallow Well	Non-Functional
0.63611	33.08417	Jinja	Kagoma	Butagaya	Budima	Buwuma central	Buwuma central-Kikuubo			1995	Shallow Well	Fully Functional
0.55139	33.14	Jinja	Kagoma	Budondo	Kibibi	Kizinga	Kizinga			2008	Shallow Well	Partially Functional
0.58556	33.18278	Jinja	Kagoma	Buwenge	Kagoma	Buwolomera	Buwolomera-Hajj			1993	Shallow Well	Fully Functional
0.57972	33.19333	Jinja	Kagoma	Buwenge	Kagoma	Buwolomera	Buwolomera A			1993	Shallow Well	Fully Functional
0.57889	33.18667	Jinja	Kagoma	Buwenge	Kagoma	Buwolomera	Buwolomera B			1995	Shallow Well	Fully Functional
0.59806	33.16333	Jinja	Kagoma	Buwenge	Kagoma	Kabaganda	Kabaganda			1993	Shallow Well	Non-Functional
0.60389	33.19444	Jinja	Kagoma	Buwenge	Kagoma	Makota East	Makota East			1995	Shallow Well	Partially Functional
0.60694	33.18194	Jinja	Kagoma	Buwenge		Makota West	Makota West			1993	Shallow Well	Decommissioned
0.52583	33.16278	Jinja	Kagoma	Budondo	Buwagi	Ibungu East	Ibungu East			1991	Shallow Well	Non-Functional
0.53028	33.13528	Jinja	Kagoma	Budondo	Namizi	Kabowa Kampa	Kabowa Kampala			2010	Shallow Well	Partially Functional
0.56028	33.09694	Jinja	Kagoma	Butagaya	Nawampanda	Busowoko	Busowoko Balimunsawe			2001	Shallow Well	Partially Functional
0.55944	33.1	Jinja	Kagoma	Butagaya	Nawampanda	Nawampanda	Busoonaps/Nawampanda			2001	Shallow Well	Non-Functional
0.57639	33.09889	Jinja	Kagoma	Butagaya	Nawampanda	Buwolomera	Buwolomera			2000	Shallow Well	Non-Functional
0.52056	33.13306	Jinja	Kagoma	Budondo	Namizi	Buyala C	Buyala C			2011	Shallow Well	Fully Functional
0.57278	33.07917	Jinja	Kagoma	Butagaya	Nawampanda	Nabukosi	Bwayuya Nabukosi			1989	Shallow Well	Non-Functional
0.52972	33.15861	Jinja	Kagoma	Butagaya	Nawampanda	Igulannubiri	Igulannubiri			1993	Shallow Well	Non-Functional
0.55944	33.085	Jinja	Kagoma	Butagaya	Nawampanda	Nakabale	Nakabale Bugaiso B			2001	Shallow Well	Partially Functional
0.57917	33.08333	Jinja	Kagoma	Butagaya	Nawampanda	Nakabaale	Kagaito			1990	Shallow Well	Non-Functional
0.56611	33.08944	Jinja	Kagoma	Butagaya	Nawampanda	Nakabale	Nakabale-Nabukosi			2001	Shallow Well	Fully Functional
0.56944	33.15028	Jinja	Kagoma	Butagaya	Namagera	Nawaguma	Nawaguma			1994	Shallow Well	Partially Functional
0.46611	33.24556	Jinja	Butembe	Mafubira	Bugembe	Budumbulu East	Budumbulu East			1996	Protected Sprin	Non-Functional
0.46167	33.19583	Jinja	Butembe	Mafubira		Kitovu Kisenyi	Kitovu Kisenyi			1996	Protected Sprin	Partially Functional
0.49639	33.22333	Jinja	Butembe	Mafubira	Namulesa	Mauta	Mauta			1997	Shallow Well	Non-Functional
0.67778	33.15861	Jinja	Kagoma	Buwenge	Buweera	Buwolero	Buwolero Mawolero	2013	Minor	1994	Shallow Well	Fully Functional
0.63361	33.23	Jinja	Kagoma	Buyengo	Butamiira	Namata B	Namata B			2008	Shallow Well	Fully Functional
0.63556	33.22222	Jinja	Kagoma	Buyengo	Butamiira	Namata A	Namata A			2008	Shallow Well	Non-Functional
0.68639	33.17111	Jinja	Kagoma	Buwenge	Buweera	Igombe	Igombe			2008	Shallow Well	Fully Functional
0.63778	33.23528	Jinja	Kagoma	Buyengo	Bulugo	Wanyama	Lwanyama			2008	Shallow Well	Non-Functional
0.68028	33.20167	Jinja	Kagoma	Buyengo	Bulugo	Kayalwe	Kayalwe			2008	Shallow Well	Fully Functional
0.67417	33.23333	Jinja	Kagoma	Buyengo	Bulugo	Bulama	Bulama			2008	Shallow Well	Fully Functional
0.66444	33.16611	Jinja	Kagoma	Buwenge	Buweera	Buweera	Buweera			1990	Deep borehole	Fully Functional
0.61111	33.19194	Jinja	Kagoma	Buwenge	Magamaga	Muguluka	Pilkington college school	2004	Minor	1990	Deep borehole	Fully Functional
0.65861	33.14639	Jinja	Kagoma	Buwenge	Buweera	Yuka	Yuka			2002	Shallow Well	Fully Functional
0.62722	33.21861	Jinja	Kagoma	Buyengo	Butamiira	Bukoloboza	Bukoloboza			1993	Shallow Well	Non-Functional
0.61389	33.21306	Jinja	Kagoma	Buyengo	Butamiira	Kitumbugulu	Kitumbugulu			1994	Shallow Well	Non-Functional
0.61139	33.19583	Jinja	Kagoma	Buyengo		Muguluka Igomb	Muguluka Igombe			2008	Shallow Well	Non-Functional
0.63444	33.21444	Jinja	Kagoma	Buyengo	Butamiira	Nawamboga	Nawamboga			1994	Shallow Well	Non-Functional
0.62806	33.19639	Jinja	Kagoma	Buwenge		Busige 1	Busige 1			1994	Shallow Well	Non-Functional
0.63417	33.20444	Jinja	Kagoma	Buwenge	Magamaga	Busige 2	Busige 2			1994	Shallow Well	Decommissioned
0.66278	33.16611	Jinja	Kagoma	Buwenge	Buweera	Buweera	St peters SS Buweera			1994	Shallow Well	Fully Functional
0.6625	33.17111	Jinja	Kagoma	Buwenge	Buweera	Buweera	Buweera Mangada	2013	Minor	2005	Protected Sprin	Fully Functional
0.62583	33.17389	Jinja	Kagoma	Buwenge	Magamaga	kyerinda	Nawampongokyerinda			1994	Shallow Well	Fully Functional
0.63944	33.17667	Jinja	Kagoma	Buwenge	Magamaga	Walumbe	Walumbe			1994	Shallow Well	Non-Functional
0.66611	33.11389	Jinja	Kagoma	Buwenge		Kigaya	Kigaya A			1994	Shallow Well	Non-Functional
0.66944	33.11722	Jinja	Kagoma	Buwenge		Kigaya	Kigaya B			1994	Shallow Well	Non-Functional
0.63139	33.18917	Jinja	Kagoma	Buwenge	Magamaga	Igombe	Busige Igombe			1994	Shallow Well	Non-Functional
0.63139	33.18417	Jinja	Kagoma	Buwenge		Magamaga	Magamaga			1994	Shallow Well	Non-Functional
0.64167	33.31111	Jinja	Butembe	Busede		Irongo	Irongo			1995	Shallow Well	Non-Functional
0.63778	33.30889	Jinja	Butembe	Busede		Nseta	Nseta			1995	Shallow Well	Decommissioned
0.6275	33.31972	Jinja	Butembe	Busede		Nseta Buwolome	Nseta Buwolomera			1995	Shallow Well	Decommissioned
0.51389	33.16167	Jinja	Kagoma	Budondo	Namizi	Budondo	Budondo ps			1996	ater Harvesting	Non-Functional
0.51528	33.16194	Jinja	Kagoma	Budondo	Namizi	Budondo	St stephenss			1996	ater Harvesting	Non-Functional
0.5225	33.12222	Jinja	Kagoma	Budondo	Namizi	Buyala C	Buyala C lower			2014	Shallow Well	Fully Functional