# WOMEN STAKEHOLDERS PARTICIPATION AND PERFORMANCE OF COMMUNITY WATER DEVELOPMENT PROJECTS IMPLEMENTED BY ATHI WATER WORKS DEVELOPMENT AGENCY

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A Research Project Presented in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Arts in Project Planning and Management, University of Nairobi.

### **DECLARATION**

I hereby declare that this research study is my original work, and it has not in part or whole been submitted for a diploma or degree in any institution of higher learning for examination reasons.

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### **ABSTRACT**

Water ministry has been undergoing various reforms aimed at promoting performance and sustainability of its projects. Nonetheless, there is a general acceptance that stakeholder participation influence project performance however the influence of women stakeholder participation on performance community water development projects is not clear. This study therefore sought to establish the influence of women stakeholder participation on performance of community water development projects implemented by Athi water works agency. Cross sectional survey design was adopted for this study with questionnaires for data collection. Project manager, top management board members, operational staffs in the projects, and engineers were randomly and purposively selected from the 3 completed and 10 ongoing projects randomly selected within Athi water works area of jurisdiction. Research questionnaire was subjected to face validity and Cronbach Alpha test used to test the instrument reliability. Graphs, frequencies, and tables were used to summarize data while regression used test the study hypotheses. The findings revealed that 79.1% (R<sup>2</sup>=0.791) of project performance was influenced by the available women stakeholder participation in initiation, planning, and execution. Simialry, all the coefficients for the dependent variables; women participation in project initiation, women participation in project planning, women participation in project execution in the model are statistically significant (p-values < 0.05) and thus influence the performance of community water development projects implemented by Athi water works development agency.

**Keywords:** Women Stakeholder Participation, Community Water Projects, Project Performance

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### **CHAPTER ONE**

### INTRODUCTION

### 1.1 Background of the Study

For a development project to prosper, the involvement of all stakeholders must be considered. Different types of stakeholders are involved in project planning and implementation. However, every stakeholder has a different role in the entire project. It is imperative to ensure that every stakeholder is given full participation in the project. This is because stakeholders are essential to project success or failure. In planning and development, there are diverse types of stakeholders in project. In the modern day, women have taken the front row seat. Gender equality ensures that women comprise key stakeholders in project development.

In the perspective of sustainable development, the topic of stakeholder participation has also been studied, for instance by Amaeshi and Crane (2006) and Nogueiro and Ramos (2014) concur that local governments do not work in isolation to promote sustainable development and should accept and adjust to the multifaceted and complicated difficulties brought on by an increasingly aware, educated, politically and technologically savvy populace. High involvement rates can result in good governance, which would support agreeable growth process in the circumstance of community life and sustainable development, according to some research publications (Benites-Lazaro & Mello-Théry, 2019). Additionally, fresh perspectives on sustainable development affirm the significance of fostering relationships with stakeholders, as well as how to effectively incorporate stakeholders in the development process and suggest approaches which are opportunity driven and endorse innovative economic ideas (Gullino et al., 2018).

In contrast to Central and Eastern Europe, where there is frequently far less expertise, participatory ways to supporting decisions are commonly used in North America and Northern Europe (Sisto et al., 2018). Additionally, the new member states of the European Union display limited multi-scale functional and geographical activities, including inefficient strategic planning.

Noteworthy, if stakeholders abandon a project because of low level of involvement, there are high chances the project will fail. It is because stakeholders are important to the achievement and completion of a project (Chinyio & Olomolaiye, 2010). They also play a part in failure.

Stakeholders bring in both physical and intellectual resources which are valuable to project completion. Others also provide monetary resources that are critical to project progress. There are stakeholders who present valuable skills and expertise to a project and their participation adds resources to the project. Proper stakeholder involvement removes any forms of conflict and incase it arises, it is easily managed.

In Kenya, stakeholder involvement in economic development started with projects that targeted communities. According to the constitution of Kenya 2010, meaningful stakeholder involvement in governance is the key component for public reforms. Stakeholder involvement needs transparency, commitment in the process, ideas, acknowledgement of alternative views, and human resources. The Kenyan constitution which was promulgated in 2010 articulates that all citizens should participate in events that have a direct impact to the community (Maina, 2013). Thus, every individual regardless of gender is considered a key participant in the implementation of any project. Using this background, the study aimed at assessing the extent of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency.

### 1.1.1 Women Stakeholder Participation

In the African context, the participation of women in community development projects is minute. Women stakeholder participation is often overlooked. Therefore, it is men who drive the agenda and set the objectives of community development projects such as water in African societies. In multi-stakeholder partnerships, it is a priority for women to be included (Commission on the Status of Women, 2016). As part of the sustainable development agenda 2030, having fair representation in multi-stakeholder partnerships is essential. In creation of community water projects, the implementation process should be gender-responsive. Women stakeholder participation also promotes sustainable development and commitment to equality. It entails that woman be granted similar voice on the decision-making table. In community projects such as water, women stakeholder participation should be comprehensive in all departments (Sigalla et al., 2021). It is the responsibility of all involved to ensure that there are adequate measures to ensure effective stakeholder engagement of women in stakeholder participation. Women should form part of stakeholder participation in a transparent and inclusive manner. While formulating strategy for the water development projects, women should form the core part in stakeholder engagement.

There are different types of stakeholder levels that women can fit into during project planning and subsequent implementation. Some include management, project sponsors, employees, suppliers, and users (Sigalla et al., 2021). In the case of community water development projects, the women users are community members who will benefit from the project after completion. Women take different roles in stakeholder participation, in most instances, women are sidelined in the management process of community projects. Majority of community development projects have majority men as decision makers in the boardrooms. Failure of sufficient women participation in community development projects is likely to spur conflicts in the community. It also leads to poor outcomes in projects because there is no fair representation in the project. Limited participation of women also limits a range of expertise and skills to be included in project implementation. Any form of gender discrimination interferes with the formulation of objectives and implementation of the project goals. The water development projects in this case are considered non-inclusive if they do not include women in stakeholder engagement (Sigalla et al., 2021). Thus, women stakeholder participation variable is significant to this study as it will make it possible to identify gender specific implications as well as concerns that may have not been considered initially by Athi water works agency.

On the other hand, Gupta et al. (2020) points out that, in the context of stakeholder theory as a whole, research that employ quantitative techniques mostly concentrate on examining the instrumental stakeholder theory's premise that a firm's financial performance is positively impacted by its attitude toward stakeholders. (Kujala et al., 2017). To measure women stakeholder participation in the current study, the researcher paid attention on the insights into the effective involvement of women stakeholders in decision making. As such, survey was used to gather insights on the extent of women stakeholder participation in various project phases in the community water development projects implemented by Athi water works agency.

In community development projects, women should be at the forefront of the programs because women are the backbone of families (Dalahmeh et al., 2009). Women should be included in stakeholder engagement and participation because women are good at nurturing families and the community. For instance, community water development projects directly affect women because they are involved in bringing up families. Women are crucial in community building and should take leadership in community projects. It is necessary to recognize that society has

changed. The days when women stayed at home to take care of the house and children have been bypassed. While women still represent critical tenets of parenting, their roles should be more than just family and parenting. They have the ability to drive community development plans and ensure they are implemented fully. Women stakeholder participation is a form of gender empowerment. It allows women to take essential leadership roles and also nurture their leadership strategies. When the community development projects are equal and promote inclusivity, the projects are function and have a favorable effect on the community as a whole. Therefore, the purpose of the current study was to evaluate the efficacy of community water development projects carried out by the Athi Water Works Development Agency with regard to the engagement of women as stakeholders.

### 1.1.2 Project Performance

Project performance portray outputs that relates to the product. The output in this context could be a product in progress or final/completed products. The standard of the final product from a project therefore is linked with project performance (Głodziński, 2019). Traditionally, project performance is associated with the evaluation of quality, timelines, and finally costs (Pollack, et al., 2018). Cost gauges project performance from the finance dimension. The initial budget created before the commencement of a project is always compared to the funds consumed when executing the project. From the comparison, different scenarios could be attained to determine project delivery or performance. Furthermore, meeting the set deadlines of a project serves as a testament to the success of the project group as well as an indication of project performance. In this regard, delivery of a quality project on time increases client satisfaction (Głodziński, 2019). Besides cost, time, and quality as metrics used in measuring project performance, customer satisfaction is another measure. In other words, customer satisfaction level determines whether or not a project was successful. Higher customer satisfaction level is a sign that the product delivered is of quality and thus their needs have been met effectively.

There are two primary groups which determine the performance of water development projects. They fall into two categories, pre- and post-implementation elements. The pre-implementation factors in water development projects include stakeholder involvement, selection of technology, selection of location, demand response, population, construction quality, and training. The post-implementation factors on the other hand comprise of technical assistance, financial management, community satisfaction, training, and a commitment to continue the

water project (UNDP-WSP, 2006). To succeed during the post-implementation period, a demand-responsive methodology is one of the prerequisites for water development projects. The demand for water is the amount and quality of water that community and members will decide to use at a specific price (Gizachew, 2005). Beneficiaries should experience the need for a supply of safe drinking water in a demand-responsive strategy in order to find initiatives for the provision of safe drinking water. According to the extent to which beneficiaries make decisions and allocate resources in support of their decisions, water projects are demand-responsive (Gebrehiwot, 2006).

Community projects are crucial in the development of society because of many advantages. The advantages include; there are no administrative bureaucracies, funds are spent entirely on the projects, projects are initiated at the request of the community and demand full community participation. In most cases, community-driven projects are effectively initiated, operated, maintained, and utilized (Githua & Wanyoike, 2015). The projects boost local and regional capacity to provide basic infrastructure and services. The also develop indigenous knowledge, and increase local and regional governance capacity, thereby facilitating a more democratic, decentralized, participatory governance over the long term. They also lessen reliance on foreign aid and teach people how to make sacrifices.

### 1.1.3 Community Water Development Projects Implemented by Athi Water Works Development Agency (AWWDA)

AWWDA is established under the Ministry of Water and Sanitation and among the nine other Water Works Development Agencies (WWDA). This agency was formed under the Water Act 2016 vide Legal Notice No. 28 of 26th April 2019. Among the responsibilities of AWWDA includes management, development, and maintenance of water and sewerage facilities and infrastructure in the areas of jurisdiction which include Nairobi, Muranga, and Kiambu counties. The total area covered by these counties is 5,800.4Km2 with a total population of 9,320,287 people. Currently, the Agency has a water production capacity of 664,337m3/day and a wastewater treatment capacity of 210,500 m3/day. Similarly, AWWDA draws its mandate from the Water Act of 2016 (Athi Water Works, 2020). AWWDA started operations in 2004.

AWWDA has made a lot of progress in transforming the community through water and sanitation projects. In this regards, substantial progress has been made in improving water and

sanitation services in and out of its area of jurisdiction as directed by Ministry of Water & Sanitation and Irrigation. The identified development projects under AWWDA have been divided into medium term and long term. The medium-term objectives are to expand water access from the current 80 percent to 100 percent by 2030. On the other hand, the sewer objectives are to increase from 47 percent to 80 percent by 2030. From the establishment of Athi water work development agency, 17 water and sewer projects have been completed in Nairobi County, 10 in Kiambu county, and 7 in Muranga county totaling 34. Among the ongoing, the agency has 16 projects in Nairobi County, 10 in Kiambu county, and 5 in Muranga county totaling to 31. Accordingly, the agency has a number of planned projects that awaits to start within its area of jurisdiction (Athi Water Works, 2020).

To successfully carry out its primary mission, AWWDA Focuses on gathering sufficient resources to speed the development of its projects. This includes sustainable resource mobilization, building strong framework to guide investment plans, and encourage efficient and effective finance for carrying out the mandate. AWWDA has developed a plan to create a viable infrastructure up to the year 2035 and 2040 respectively (Athi Water Works, 2020). In order to achieve the documented plan and enhance performance of its projects, stakeholder engagement is crucial. Similarly, just like other institutions in Kenya, the Athi water works development agency plan is anchored on the Kenya Vision 2030 and must also take into consideration the expectations and provisions of the Kenyan constitution. Both Kenya Vision 2030 and the constitution aims at organizations promoting the issue of gender equality in its operation. Athi water works is still in the struggles to promote gender equality in its project engagement and overall operation of the organization. As such, assessing women stakeholder participation in this institution was necessary.

### 1.2 Research Problem

Project managers continuously desire to see the projects they launch being finished on schedule, within the allocated budget, and within the specified timescale (Głodziński, 2019). Because they want to fulfill the needs of their clients and accomplish their own management goals, project managers use these goals to direct the projects they work on. Majority of water development projects have encountered numerous problems in terms of schedules, financing, exceeded budget, and poor quality. Another problem has been the failure to include unequal

stakeholder in gender engagement in those initiatives. Project failure is still acknowledged despite extensive knowledge of project planning and management (Murwanashyaka, & Shukla, 2017).

Performance of community water development could originate from various factors that includes governance, financial management practices, stakeholder participation, among other project management practices. On stakeholder participation, women involvement in development projects has not been promoted so much all over the world. In this sense, according to societal conventions, men have typically made decisions about water policy and management globally, with women having little impact. (Carrard et al., 2013; Peacock, 2015). Female membership for instance in water user committees could provide a proxy measure for involvement of women in management of water. However, female membership does not guarantee women's active involvement in key decision processes. There are many obstacles to women involvement in significant water management issues, even when national regulations and affirmative action encourage it (World Health Organization, 2012). A better indicator of how much women participate in decision-making may come from examining whether they hold influential positions on the committee. As such, based on the nuggets', limited knowledge has been presented by researchers on the influence of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency.

Accordingly, from early studies, the findings cannot be used to portray the picture at Athi water works agency because of the differences in geographics, research designs used besides other dynamics and policies in the agencies creating research gaps. For instance, Mommen, Humphries-Waa, and Gwavuya (2017) studied the effect of women participation in water committees on management and water system performance in rural Vanuatu. The study's findings indicated that women participation influenced performance, nonetheless, findings cannot be used to represent the picture Athi water works thus a research gap. As such the current study sought to address the following; What is the extent of women stakeholder participation in the implementation of community water development projects implemented by Athi water works development agency? How does women stakeholder participation influence implementation of community water development projects by Athi water works development

agency? In this study, women stakeholder participation indicators formed the independent variable while performance of community water development projects dependent variable.

### 1.3 Objective of the Research

The research sought to assess women stakeholder participation on performance of community water development projects implemented by Athi water works development agency and determine their impact on performance of projects. The general research objectives included;

- i. To assess the level of women stakeholder participation in community water development projects implemented by Athi water works development agency.
- ii. To establish the influence of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency.

### 1.4 Value of the Study

One of the benefits from this work is that project managers as well as different organization including private, and government might draw critical insights that would help in bettering implementation of community water development projects among other projects through women involvement. In other words, lessons from the study findings as well as recommendations will help the individuals acquire more knowledge and appreciate the participation of female stakeholders in initiatives.

The research also adds to other existing studies on women stakeholder participation and performance of community water development projects. Insightful outcomes could be drawn from the study when compared to other prior scholarly works which relates to the topic of study. Similarly, the study also provides background information to scholars and researchers interested in the study of some other different aspects of the topic in future.

Finally, the recommendations from the research will be used by the Athi water works among other water works developments agencies in Kenya and worldwide to adopt and embrace women stakeholder participation. In this regard, the findings from this study could provide evidence to advocate for improving gender balance in community water development agencies targeting a serious inclusion of women in all sections or levels.

### **CHAPTER TWO**

### LITERATURE REVIEW

### 2.1 Introduction

This chapter examines related literature to the topic of current research. The chapter further highlights results and findings from the early undertaken primary and secondary sources globally, Africa, and locally which relates to the topic of study. The chapter is presented as follows; the theoretical framework, empirical literature which follows the research variables as guided by the research questions, and conceptual framework.

### 2.2 Theoretical Framework

The study is based on a theory that forms a thought on the association between the influence of women stakeholder involvement and performance of community water development projects. The research is therefore established on stakeholder theory and Theory of Performance.

### 2.2.1 Stakeholder Theory

Stakeholder theory is an outlook of capitalism that stresses the interrelation between a business and its employees, communities, suppliers, customers as well as others who have a stake in it. The theory first found its expression in Ansoff who defined the objective of an organization to include reconciliation of conflicting interests of various stakeholders, amongst other practices. The promoter of this theory Freeman (2010) maintains that managers have a duty to appropriately balance and consider the welfares of all the stakeholders.

Freeman and Dmytriyev (2017) found that stakeholder theory identifies the groupings which form the stakeholders of a project and further delineates and advocates methods that could be used to accommodate the interests in the view of management. Freeman (1984) faulted traditional models to have only depicted managers to only deal with suppliers, customers, and employees and that the firm established to serve the interests of shareholders and make profit only. The current study therefore accentuates the distinct power acts of respective stakeholders in project delivery at which management practices gives attentiveness.

In this study, every group in community water development projects are considered as vital stakeholders with influence on project delivery. The perspective is seen from a view of

corporation and resource-based view. It also helps in establishing grounds under which the groups should be handled as stakeholders and establishing individual stakeholders of a project which is the normative theory of the identifying stakeholder (Ghosh & Jhamb, 2022). The connection of stakeholder theory to the current study is that it builds on benefits in the area of interdependence of stakeholders. Furthermore, the theory provides evidence that early engagement results in project value. According to Breesam and Jawad (2021) this theory contains mechanism for identifying as well as managing stakeholders. The theory confirms that stakeholders have influence on the project delivery.

However, critiques of stakeholder theory assert that the interests and needs of different stakeholders cannot be reconciled equitably. In other words, the interests of the stakeholders are too broad to realistically manage. Similarly, some groups of stakeholders hold more power or influence than others which could in turn create discord and tension.

### 2.2.2 Theory of Performance

The proponent of this theory Edger (2007) assert that perform is the ability to produce results which are valued. The theory further provides the ground for analyzing performance, defining a criterion for performance, and developing meaningful measures of performance. According to the advocate of the theory of performance, each level in performance characterizes the quality or effectiveness of a performance. Furthermore, level of performance depends entirely on 6 mechanisms which includes knowledge levels, personal factors, context, level of identity, fixed factors, and levels of skills. The theory thus indicates that some factors that influence performance are immutable while on the same note others influence it to produce favorable outcomes.

The relevance of theory of performance to the current study is that it informs project performance on three main indicators used in measuring performance, which include time, cost, and quality. In this regard, high level performance yields quality outcomes which are more effective to meet expectations as well as the needs of stakeholders and beneficiaries. Similarly, at higher performance levels, costs are reduced because of the limitation of wastage in the key resources needed to produce a product. Finally, time taken to complete project tasks indicates levels of performance which is in relation with an outlined scope as presented in the project charter (Maina, & Kimutai, 2018).

### 2.3 Stakeholder Participation

Sinclain (2004) shows that the concept of involvement is intricate and multifaceted. It employs a variety of techniques and occurs in diverse social contexts and at different phases of a project's lifespan. An alternative perspective is the long-term continuous input contribution to decision-making partnerships, information exchange, and enabling for a defined project (Karl, 2000). According to Mommen et al. (2017), more involvement of women in water decision-making and management and is predicted to expand results for women and the larger community. Although there is indication that women have not participated as much as men in water user committees (WUCs), their association in management has been linked to more efficient water systems globally.

In contrast to situations where people are unaware of the project or when it is imposed on them, there is also the certainty of sustainability subject to certain circumstances. Participation from women stakeholders supports project sustainability since doing so helps communities build skills for cooperation, upkeep, and sustainability (Mommen et al., 2017). The term "passive participation" refers to involvement in a project's implementation without having any say in how its resources are used or how decisions are made. Passive participation has been described as a means by Bigdon & Korf (2002). This suggests that involvement is only utilized as a tool to improve project outcomes, sustainability, or equity by fostering a feeling of ownership among the parties involved (Vos, 2006).

Additionally, participation is a form and a tool for mobilization. It can be understood that participation as a top-down state-directed mobilization that is occasionally imposed to achieve particular goals (Bigdon & Korf, 2002). Participations incorporate support, key consultation up to functional participation, nominal cosmetic, instrumental, or pseudo-participation are other names for this form of involvement (Vos, 2005). Participation that is interactive is the alternative. The procedures sought to increase community and female engagement.

Functional participation, in particular for women, includes interest groups for better bargaining, committees are frequently shaped, and members frequently participate in policymaking. The project stakeholders, in particular, contribute ideas and decisions. In addition, group activities are involved in creating objectives and goals (Magero & Muchelule, 2019). There is a desirable amount of involvement. There is room to increase the level of participation, analyze its

efficacy, and look for ways to control the operation; this requires a formalized and documented approach.

### 2.4 Empirical Literature

This segment covers evaluation of related studies to the study topic. The section describes and compares the research questions which contains the study variables to early studies in order to establish the existing research gaps. The key variables include performance of community water development projects and women stakeholder participation.

There are two major categories in which the determining elements for the success of community water development initiatives can be placed. Both pre-and post-implementation elements are listed here. Some of the pre-implementation criteria are community involvement, selection of technology, location selection, response to demand, quality of construction, population, and training. Technical assistance, financial and institutional management, community satisfaction, , training, and a commitment to continue the water project are postimplementation variables. (UNDP-WSP, 2006). Demand-responsive methodology is one of the prerequisites for community water development initiatives. The quality and quantity of water that the community's residents will choose to use at a specific price is characterized as "demand" in this context (Gizachew, 2005). Beneficiaries should sense the need for a supply of safe drinking water in a demand-responsive method in order to select projects that will provide that supply. Depending on the extent to which beneficiaries make decisions and allocate resources in support of those decisions, water projects are neither more nor less demand-responsive. (Gebrehiwot, 2006). When community members are willing to exchange valuable resources for services, it shows that they value the services provided. As a result, there will be a greater demand for water supplies, which will make it easier to manage the water project and increase its rate of success (Gizachew, 2005). Many performance metrics, including those that concern cost, time, quality, customer changes, client satisfaction, and company success, Safety and health may be utilized to gauge and assess performance of a project (Cheung et al. 2004). However, the three primary performance evaluation dimensions are cost, time, and quality.

A community's growth depends on community initiatives since they provide many benefits. Some benefits include allocating all funds to projects rather than maintaining administrative bureaucracies; undertaking projects at the community's request with full community involvement and ownership; and ensuring that community-driven projects are successfully managed, maintained, and used. In order to support long-term more democratic, decentralized, and participatory government, the initiatives support local and regional ability to deliver basic infrastructure and services, develop indigenous expertise, and enhance local and regional governance capacity (Maina, & Kimutai, 2018). The most crucial strategy for empowering women to support their own needs and efforts in development is participatory development. Women are no longer viewed as the intended beneficiaries of development programs; rather, women have evolved into crucial stakeholders with a substantial role to play in the administration of projects and programs in their regions. Community-based mechanisms that can support and maintain a program or initiative include women stakeholders.

Tradition ultimately affects how men and women manage the water supply in communities across the world, including those where Athi Water Development Agency works. This is also true in the areas where it operates. Women have a significant role in gathering, managing, and maintaining community water supplies, and regulating their social usage, and ensuring their safety, despite the fact that males have traditionally dominated decision-making processes that impact water supply management. (Boateng, & Kendie, 2015). Accordingly, women are the ones who are most knowledgeable about the availability, dependability, and cleanliness of water in terms of home, community, and subsistence living situations. Therefore, it is essential that both men and women participate in decision-making for an enhanced and sustainable management of the water supply (World's Women, 2010). The rationale for this is that women can assist maximize water's potential for development and ensure that water does not become a barrier to sustainable development when they are given the opportunity to participate in all phases of water management and policy making. To express their concerns about issues that affect their everyday lives (Hemson, 2002).

Instructions from Africa and other parts of the world demonstrate that including more women in decision-making and water management enhances both the operation and upkeep of water infrastructure and their ability to contribute more financially to their homes (Sam, 2006). Since women's contributions to water management and development initiatives have been recognized, they have been fully, equally, and profitably integrated into these challenges during the past 40 years (UN Water, 2006). However, the recent rise in the proportion of women

selected as ministers of water and sanitation is an encouraging development that may give gender mainstreaming in water programs a boost.

Increasing the involvement of women in managing water supplies has been explored at several conferences, workshops, and seminars; nevertheless, programs incorporating the formation of Community-based organizations do state their purpose to ensure that women will participate to some extent, their number remains low compared to me and they are still denied opportunities to participate in choices that have an impact on their lives and underrepresented. Women are participating, according to Dayal, Wijk-Sibesma, and Mukherjee (2000), although their involvement is skewed toward physical labor that is performed voluntarily, such as cleaning and lubricating pumps and collecting charges. Men make management decisions, including how to use money that has been collected. Onyango (2003) claims that policy has been fiercely opposed to women's subservient status in community water supply management. This is due to the fact that, despite holding some power positions themselves, women's involvement and decision-making sometimes appear to be below those of men. Hemson (2002) asserts once more that a significant barrier to the improvement of women's well-being and long-term sustainability in developing countries is their non-participation in decision-making regarding the planning, design, implementation, and administration of water supply projects (PRB, 2001). According to studies, many women are aware of how important their participation in the administration of water and sanitation is, but they are cautious about how they express their demands for fear of being labelled as social outcasts (Tam, 2012; Singh, 2006). Because investors or water agencies typically view women's involvement This limited participation of women in community water development initiatives might be seen in light of their responsibilities in social reproduction, such as providing and managing water for household usage.

The government bodies of Ghana's Asante Akim south district viewed water as a vital necessity for the district's residents due to its significance to the economy, social conditions, and environmental conditions. It was crucial in this sense that its water resources were managed effectively and fairly for both the present and the future generations. Thus, the Rural Water Supply Project (RWSP) in Ghana was created with the intention of giving people access to safe drinking water, addressing the socioeconomic, and health problems associated with unclean water, and ensuring the management of that water through the notion of participation by all

beneficiaries. Gender-balanced water and sanitation committees must be developed locally and encourage community ownership in order to give local institutional support for the implementation of this project (Engel, Iskandarani & Useche, 2005).

According to the RWSP in Ghana, women must have between one-third and forty percent of the leadership roles in the committees responsible for water and sanitation. This specific quota represents a stark and major change from past initiatives, where communities were only persuaded of the necessity of including more females serving on local committees and sensitized to this need, and then left to choose how they would go about doing it and how far they would embrace women and nominate them for leadership positions (Opare, 2005). The rules were generally followed because breaking them always resulted in being denied any advantages.

However, Djegal et al. (1996) point out that in some communities, due to the fact that there are so few women in decision-making positions, this does not necessarily result in meaningful engagement of women. appointed as secretary or treasurer, and none are chairpersons of WatSan committees. Despite the fact that certain communities will accept a predefined quota of women in executive roles on the WatSan committees in order to be eligible for project support. Opare (2005) again observes that they still give the key positions entail greater responsibility for males, whereas women are just regular members with little influence (Saeed, 2003). On the other hand, Danquah (2003) asserts that women are positioned to the side or behind the meeting's primary facilitators or speakers at community meetings. Thus, despite deliberate initiatives to encourage women's increased participation in decision-making in community projects, the notion that men should rule in this field persists in society.

Women participation in infrastructure projects in Kenya is considered a difficult issue. Women and children are more vulnerable to poor sanitary conditions and a lack of water than men are (Kendie, 2002). According to numerous research on water supply (Nielson et al., 2009; Padangwangi, 2009; Rodrigue & O'Neal, 2004), there are many different difficulties relating to community engagement in water treatment, water quality, or willingness to pay. Only a small number of studies (Boateng, Brown, & Tenkorang, 2013; Opare, 2005; Sam, 2006; WHO & UNICEF, 2009) have focused on the gender component of community water development initiatives. Therefore, the purpose of this study was to investigate the driving forces behind

women's stakeholder participation in water development projects and how that participation affects performance.in development projects implemented by Athi water works.

Table 2.1: Prior Studies on Women Stakeholder Participation on Community Water Development Projects

Author	Study	Research	Methodology	Findings	Research
		focus			Gap
(Mommen,	Does women's	To establish	Analysis of	Only 16% of	The study
Humphries-	participation in	the effect of	inventory data	the committee	used data
Waa, &	water	women		membership	from the
Gwavuya,	committees	participation in		were women	Vanuatu water
2017)	affect	water user		however their	inventory
	management	committees on		involvement in	which could
	and water	water		crucial water	contain some
	system	management		user committee	biases based
	performance in	and system		roles was	on entry
	rural Vanuatu?	functionality		associated with	errors.
				improved	Furthermore,
				functioning of	difference in
				water system,	geographical
				more effective	locations as
				management	well as land
				which includes	policies may
				revenue	not allow the
				collection and	use of this
				regular	findings to
				meetings	portray the
					picture of Athi
					water
					development
					projects thus a
					research gap
(Boateng, &	Factors	To examine	Cross-sectional	The study	The study by
Kendie, 2015)	influencing the	factors	survey, use of	findings	Boateng and
	participation of	influencing the	multistage	indicated that	Kendie (2015)
	women in rural	participation of	sampling	even though	used
	water supply	women in rural	technique,	women	multistage
	projects in the	water supply	interviews	participated in	sampling
	Asante Akim	projects		water projects,	techniques to
	South District,			socio-cultural	obtain
	Ghana			norms and	respondents
				male	which has a
				domineering	higher level of
				were the	subjectivity in
				underlying	its process.
				factors which	Additionally,

				inflyonand	thoma is
				influenced	there is no
				their	data on how
				participation	women's
					participation
					as
					stakeholders
					affects the
					success of
					water
					development
					initiatives.
(Chifamba,	Women	To determine	Mixed method	Various water	From the
2013)	participation in	the level of	research	management	study by
	community	female	design;	institutions in	Chifamba,
	water	involvement in	quantitative	the area where	(2013) there is
	management	community	and qualitative	the research	limited
	projects in	water project	methodologies	was done failed	knowledge on
	Buhera, ward	management		to stimulate	the influence
	13, Zimbabwe			women	of women
				participation as	stakeholder
				well as	participation
				addressing	on
				their purposes	performance
					of water
					development
					projects and
					management
(Maragia,	Influence of	To establish	Mixed	More males	The study by
Omboto, &	Stakeholder	whether	methodology,	and experts	Maragia,
Maket, 2018).	Participation	stakeholder	questionnaires,	dominated in	Omboto, and
, ,	on the	involvement in	interviews	the planning	Maket (2018)
	Planning of	the planning		process than	focused only
	Water Projects	process played		the youths and	on stakeholder
	in Kisii	a significant		females.	participation
	County,	role in the		Furthermore,	on planning
	Kenya	management of		higher number	process of
		water projects		of water	water projects,
		" ator projects		projects	thus little
				performed	knowledge on
				below	the overall
				expectations	performance
				- Apeciations	community
					water
					development
					projects
					projects

### 2.5 Conceptual Framework

This section establishes the context in which women stakeholder participation in the implementation of Athi water community development projects can be understood. Women stakeholder participation indicators (project identification, project execution, project planning) form the independent variable as presented in Figure 1. Similarly, performance of community water development projects forms the dependent variable.

# Independent Variable Women Stakeholder Participation: Project Identification Project Planning Project Execution Dependent Variable Performance of Athi Water Works Development Projects -Quality -Time -Cost

Figure 1: Conceptual Framework

Source: Researcher, (2023)

### **CHAPTER THREE**

### RESEARCH METHODOLOGY

### 3.1 Introduction

According to Tipton (2022), the use of proper research approaches results in more credible conclusions. As such, this chapter presents the study methods used to complete this research are discussed in this section. The study design, population and unit of analysis, sampling procedure, the process of collecting data was discussed in this chapter by the study.

### 3.2 Research Design

The researcher utilized cross sectional survey design to get an understanding of the research subject. This kind of design collects data from groups or people at a specific time with an objective of describing the nature of the circumstances at hand, creating benchmarks against which the circumstances could be compared by determining the existing relationship between the specific events (Aggarwal, & Ranganathan, 2019). The study used this design as it is inexpensive and quick as well as it does not face serious ethical scrutiny unless the nature of the data collected is confidential. The study adopted cross sectional survey process in data gathering on the main variables of interest: women stakeholder participation and performance of Athi water works development projects using quantitative data collection tools.

### 3.3 Unit of Analysis and Target Population

Athi water works development agency has completed, ongoing, and planned projects within Nairobi, Kiambu, and Muranga which are the main areas of operations. From the projects, the agency has completed 34 projects with Nairobi County having the highest number of 17 projects while Muranga county having the least number of 7 projects. Similarly, the agency has 31 ongoing projects with Nairobi County still having the highest number of 16 ongoing projects while Muranga having the least number of 5 projects. In order to complete the research, the study focused more on both the completed and ongoing projects to properly establish women stakeholder engagement. For completed projects the researcher randomly sampled 3 projects while the study adopted simple random sampling procedure to pick 10 ongoing projects across the three counties in the area of Athi water works development agency.

Accordingly, study target population was formed of people working in the selected sections in Athi water development agency and the beneficiaries of the established projects. Bloomfield and Fisher (2019) delineate that target population is a hypothetical or real characteristic of elements that the research purposes to investigate. This helps determine the exact object being investigated for easy generalization. In this regard, the study target population included the project manager, 16 top management members, 173 operational staffs in the projects, and 20 engineers to form a total of 210.

### 3.4 Sampling Procedure and Sample Size

For effective selection of study participants from each category, purposive and simple random sampling methods were utilized. According to research (Dalglish, Khalid, & McMahon-Rössle, 2020), simple random sampling is the most accurate and unbiased method. In purposive sampling, the researcher used expert knowledge of the population first in order to decide the vital characteristics of the sample represented.

### 3.5 Instruments of Data Collection

In this study, the researcher adopted Krejcie and Morgan (1970) sample calculation table to select sample size from the 210 people to arrive at a sample size of 136 (Krejcie, & Morgan, 1970). A sample size of 136 represents a sample size percentage of 64.8 which was a sufficient representative of the whole population. This represented (64.8%) of the target population

### 3.5 Data Collection Instruments

In this research, project manager, management board members, engineers, and operational staff questionnaires as main instrument of data collection. A questionnaire is a tool made up of various questions that aim to collect information from the study respondents (Young, 2015). Questionnaires are mostly used in collection of survey data offering structured; often numerical data and they are easily administered even without the main researcher. One of the reasons for using questionnaires over other data collection tools in this study was that a lot of data could be gathered in less time (Young, 2015). Furthermore, online surveys could be employed, which was cost effective as well as quick.

The research questionnaire was developed with different items in order to ensure the ontological perceptions are properly captured. This was done along with open and closed-ended

items on a Likert scale which enables participants to select one from opinions given. This again assist in gauging the views and attitudes of study participants

### 3.6 Instrument Validity

The researcher subjected the questionnaire to face validity. According to Mohajan (2017), face validity is based on expert judgement. In this study, educational experts were consulted to ascertain if the research questionnaire was aligned to the research questions. The expert's feedback, recommendations, and comments on the research questionnaire aided the researcher to make appropriate adjustments and corrections.

### 3.7 Piloting of Research Instrument

Piloting the study was done in a small version of the full-scale study using a small number of the test respondents to check the coherence of the questions on the questionnaire, that is, pilot testing of the research tool. Hassem (2022) assert that pilot testing is important as it helps check irrelevant items, helps in coding, eliminates ambiguity, as well as check on informants' attitude towards the items and identify omissions. This step also helped increase practicability, validity, and reliability of the research questionnaire. Thus, further relevant changes were made on the questionnaire.

### 3.9 Reliability of Instruments of Study

Furthermore, reliability of study instrument for quantitative data in the questionnaire was subjected it to internal consistency reliability where the most preferred test is the alpha reliability coefficient. In this case, Cronbach's Alpha coefficient was used. In Cronbach's Alpha coefficient test, the outcome values range between 0 and 1. Sürücü and MASLAKÇI (2020) delineates that as the values approaches +1, it shows the internal consistency is high. The test was done after the pilot testing of the research tool.

### 3.9 Data Collection Procedure

To collect data in the full-scale study, the researcher first obtained an introduction letter from UON and also a research authorization permit from NACOSTI. Further authorization was sort from the human resource department at Athi water development agency to allow its employees to participate in this study. Both online and physical questionnaires were administered.

Respondents were offered adequate instructions on how filled questionnaires were collected for analysis.

### 3.10 Data Analysis

Data analysis as described by Sutton and Austin (2015) is processing of the collected data to answer the study questions. Data analysis helps bring structure, meaning and order in which data was gathered. The investigator checked, cleaned, and sorted the quantitative data from the completely filled questionnaires in line with the study questions. Frequency, means, percentages, and standard deviation were utilized to give data summaries. This then followed by multiple linear regression was done on the study's hypothesis.

### 3.11 Ethical Considerations

This study adopted ethical factors which advanced the goals of the study, such as truth, knowledge, and mistake prevention. Resnik (2020) assert that ethical considerations promote values that are a must for any collaborative work. In this case, besides introduction letter from the university, NACOSTI permit, and authorization from the human resource department at Athi water development agency shows that the researcher followed the accepted ethical guidelines for a legitimate research study. The researcher and the research assistant also ensured confidentiality, considered issues around conflict of interest, and not coerce the respondents whatsoever to give information. Finally, to avoid plagiarism as well as not to falsify information, all external sources used in the writing were referenced.

Table 3.1: Summary of Methodology

Objective	Data Collection	Data Analysis
	Instrument	
1. To assess the scope to which	Questionnaire	Frequency, standard deviation,
women stakeholder participation		means, and percentages to
in community water		summarize the data.
development projects		
implemented by Athi water		
works development agency.		
2. To determine the impact of	Questionnaire	Frequency and percentages to
women stakeholder participation		summarize the data.

on performance of community	Regression analysis
water development projects	
implemented by Athi water	
works development agency.	

### **CHAPTER FOUR**

### RESULTS AND DISCUSSIONS

### 4.1 Introduction

This chapter covers the results of the research and discussions derived from the data analyzed from the survey. The results and discussions are described under response rate, study instruments' reliability test summary, demographic characteristics of the respondents, degree of women stakeholder contribution in community water development projects, influence of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency, and finally, regression model.

### 4.2 Study Response Rate

Booker, Austin, and Balasubramanian (2021) delineates that the number of respondents to a survey divided by the total number of subjects permitted in a research sample is known as the response rate. In this study, 105 of the 136 questionnaires that were sent to the study population in hard copy and online were successfully completed and returned, yielding a response rate of 77.2%. According to Mugenda & Mugenda (2003), a response rate of 50% is deemed satisfactory; however, a rate of more than 70% is regarded as extremely good. In this sense, the 77.2% response rate of the study was satisfactory and hence adequate to support the research conclusions. The researcher then moved on to data analysis.

### 4.3 Reliability of the Study Instrument

The study used Cronbach's Alpha test to test the internal consistency reliability of the questionnaires. The reliability statistics were as presented in Table 4.1.

Table 4.1: Reliability Summary

Pilot/Pretest Study			Main Study		
Cronbach's	Cronbach's	No of Items	Cronbach's	Cronbach's	No of Items
Alpha	Alpha Based		Alpha		
	on				
Standardized			Standardized		
Items			Items		
.809	.828	31	.837	.894	31

From the reliability statics Table 4.1, the pilot study reliability coefficient is .828 while for the main study equaled to .894 indicating high or good internal consistency. Price, Jhangiani, and

Chiang (2015) assert that a value of +.80 or greater is considered to indicate good or high internal consistency. The study's results are therefore considered definitive.

### 4.4 Demographic Characteristics of the Respondents

Respondents' demographic characteristics were generally categorized by gender, education level, position within Athi water works development agency, and period worked in the organization. Table 4.2 thus presents study's findings on the demographic information the respondents.

Table 4.2: Demographic Data of the Respondents (n=105)

Variable	Category	Frequency	Percentage (%)
Gender	Female	40	38.1
	Male	65	61.9
<b>Education Level</b>	PhD	0	0.0
	Masters	15	14.3
	Bachelors	57	54.3
	Diploma	19	18.1
	Certificate	8	7.6
	K.C.S.E	6	5.7
	K.C.P.E	0	0.0
Job position at AWWDA	Project manager	1	1.0
	Management member	6	5.7
	Engineer	10	9.5
	Operational staff	88	83.8
Period worked at AWWDA	Less than 1Year	7	6.7
	1-3 Years	9	8.6
	4-6 Years	18	17.1
	7-9 Years	14	13.3
	Over 10 Years	57	54.3

From Table 4.2 on presentation of demographic data of the informants, the findings on respondents' gender demonstrate that 65 (61.9%) of the respondents were male, the majority while the least, female at 40 (38.1%). Similarly, on respondents' education level, majority 57 (54.3%) had bachelor's degree. They were followed by diplomas 19 (18.1%), next those who had master's degree 15 (14.3%), then certificate holders who were 8 (7.6%), and final those with K.C.S.E certificate 6 (5.7%). Nonetheless, there were no respondents with PhD and K.C.P.E certificate. On job position at Athi water works development agency, majority of the respondents 88 (83.8%) were operational staff as they formed the largest category. They were

followed by engineers 10 (9.5%), then management members 6 (5.7%), and then project manager 1 (1.0%). Finally, on period worked at Athi water works development agency, majority of the respondent 57 (54.3%) had worked for over 10 years. Accordingly, 18 (17.1%) of the respondents had worked at Athi water works development agency for a period of between 4-6 years, 14 (13.3%) worked between 7-9 years, 9 (8.6%) between 1-3 years, while the least, 7 (6.7%) worked for less than a year.

Gender, education level, job position held, and period worked at Athi water works and development agency as demographic characteristics of the respondents, were key for this study. As the study's topic was centered on women stakeholder contribution on performance of the institutions' projects, first question on gender was thus significant to give the institutions' picture at first glance on gender employment distribution. Similarly, gender diversity was to help gather different views and perceptions on the study's topic which had a likelihood of increasing the quality of responses received. In other words, gender is important in communication, decision-making, preference for uptake of interventions, and engagements (Tannenbaum et al., 2016). Education level relates to an individuals' knowledge while job position and period worked in the position relates to experience. Therefore, understanding the selected demographic essential qualities of the informants was significant to validate the quality and reliability of the responses given which was thus based on respondents' knowledge and experience.

## 4.5 Degree of Women Stakeholder Participation in Community Water Development Projects Implemented by Athi Water Works Development Agency

The first study's objective was to assess the degree of women stakeholder participation in the community water development projects implemented by Athi water works development agency. The researchers first sought to understand involvement of women stakeholders in the project phases which included project initiation, planning, and execution. Project manager, management members, engineers, and operational staff were questioned about how much they agreed or disagreed about women stakeholder involvement in the three phases of a project using different statements on a Likert scale with1 as strongly disagree (SD) while 5 strongly agree (SA). Table 4.3 displays findings with the analysis defined by three categories of disagree formed by strongly disagree (SD) and disagree (D), neutral category, and agree category of strongly agree (SA) and agree (A).

Table 4.3: Women Stakeholder Participation in Community Water Development Projects (n=105)

	SD	D	N	A	SA	Mean	Std.
	F %	F %	F %	F %	F %	_	Dev
<b>Project Initiation</b>							
Project identification	14 (13.3)	33 (31.4)	31 (29.6)	15 (14.3)	12 (11.4)	2.3	1.46
Needs assessment	11 (10.5)	37 (35.2)	21 (20.0)	26 (24.8)	10 (9.5)	2.3	1.68
Proposing of solutions	8 (7.6)	49 (46.7)	26 (24.8)	14 (13.3)	8 (7.6)	2.4	1.68
Average						2.3	1.64
Project Planning Budgeting processes Setting of the specific project objectives	21 (20.0) 16 (15.2)	35 (33.3) 34 (32.3)	32 (30.5) 24 (22.9)	13 (12.4) 22 (21.0)	4 (3.8) 9 (8.6)	2.3 2.2	1.93 1.61
Average						2.3	1.75
Project Execution Lead teams	10 (9.5)	47 (44.8)	33 (31.4)	11 (10.5)	4 (3.8)	2.4	1.72
Providing feedback	23 (21.9)	31 (29.5)	29 (27.6)	17 (16.2)	5 (4.8)	2.1	1.68
Average						2.3	1.67

The findings in Table 4.3 revealed that in project initiation which is a crucial phase in project life cycle, the agency failed to stimulate women stakeholder participation. Most of the respondents 44.7% disagreed that women participated in project identification. This imply that the number of women participating in project identification was fewer than male participants. Respondents' mean response of 2.3 suggest that most of the informants thus disagreed with this assertion.

In addition, it was also noted that the number of women involved in needs assessment at the onset of projects were low. Women being on the ground as well as in charge of taking care of most family activities, they are the best who can give a quality feedbacks in terms community water needs or gaps. As a result, their involvement to lead or allowing majority to participate in the exercise of needs assessment for community water projects would guarantee the effectiveness of the project in terms of filling the community gap. As from the responses, most of the informants 45.7% disagreed that women stakeholder participated in needs assessment. Respondents' mean response of 2.3 therefore imply that most of the respondents disagreed that women participate in needs assessment for community water projects. Similarly, most of the respondent 54.3% disagreed that women participated in proposing of solutions. This suggests that men stakeholder have dominated this process and thus fewer women take part. Thus,

respondents' mean response of 2.4 imply that most of the study respondents disagreed that women participated in proposing of solutions in project initiation phase.

In the phase of project planning, the findings also revealed that women stakeholder participation was limited. For the processes of budgeting, most of the study informants 53.3% disagreed that women stakeholders took part. This imply that the process was majorly done by the male stakeholders and few women participants. As such, respondents' mean response of 2.3 suggests that most of the respondents disagreed that women stakeholders participated in project budgeting processes. Furthermore, women stakeholder participation in setting of the specific project objectives was limited. Women play a significant role in water field as the main managers and users of water resources in the community and therefore their views are critical in setting project objectives. As such, from the study's responses, most of the respondents 47.5% disagreed that women participated in setting of project objectives. Thus, respondents' mean response of 2.2 suggest that most of the study informants disagreed with this statement.

Similarly, in project execution, it was noted that there were limited spaces for women stakeholder participation. The findings show that most of the informants 54.3% disagreed that women stakeholder participate in leading teams. This imply that most men stakeholders were in charge of leading teams than women. In other words, women stakeholders acted as support staff in their areas of operation. Respondents' mean response of 2.4 imply that most of the informants disagreed that women stakeholder participated in leading teams. Finally, in project execution most of the respondents 51.4% also disagreed that women stakeholder participated in providing feedback. In other words, the leaders of various sections in the project were trusted to give feedback more than the support staff who in most cases were women stakeholders. As such, respondents' mean response of 2.1 suggest that most of the respondents disagreed that women stakeholders participated in providing feedback.

In overall, the findings in Table 4.3 revealed that women stakeholders were mostly excluded from related decision-making processes in project initiation, planning, and execution. As such, the respondents' average mean responses of 2.3 for project initiation, planning, and execution suggests that most of the study respondents disagreed that women stakeholders participated in this phase of the project cycle. In other words, the implication of women stakeholder in terms of effectiveness as well as enhance equity in community water development projects has been

ignored. As such, this evidence show that women stakeholder participation in community water development projects is minimal. This finding was consistent with Chifamba (2013) that water management institutions failed to stimulate women stakeholder participation since they failed to address the strategic needs of women such as employment.

The study also intended to understand factors that determines the level of women stakeholder participation in the community water developments projects implemented by Athi water works development agency. The findings were as presented in Table 4.4 and discussed as follows.

Table 4.4: Factors Determining Women Stakeholder Participation (n=105)

Statements	SD		D		N		A		SA		_	Std.
Statements	F	%	F	%	F	%	F	<b>%</b>	F	%	Mean	Dev
Flexibility of Athi water works agency procedures	13 (	(12.4)	35	(33.3)	24	(22.9)	23	(21.9)	10	(9.5)	2.0	1.42
Level of women empowerment	9 (8	3.6)	14	(13.3)	21	(20.0)	46	(43.8)	15	(14.3)	3.6	1.54
Tangible project benefits <b>Average</b>	16 (	(15.2)	31	(29.5)	26	(24.8)	23	(21.9)	9 (8	3.6)	1.7 <b>2.4</b>	1.61 <b>1.57</b>

From the study's findings, most of the informants 45.7% disagreed that flexibility of Athi water works agency procedures determined women stakeholder participation in the projects. This imply that the approach of governance in the institution did not lead to greater efficiency of the available policies on equity. As such, respondents' mean response of 2.0 suggests that most of the study respondents disagreed that flexibility of institutions' procedures determine participation of women stakeholders. Similarly, the findings revealed that level of women empowerment determined their participation in community water development projects. Respondents' mean response of 3.6 suggests that most of the informants cited level of women empowerment as a weighty factor that determined their participation in Athi water works community water development projects. Empowered women means educated as well as equipped with enough skills to handle different problems in the community thus solving them. As such, empowered women have a higher chance to be considered to participate in community water development projects. This finding thus concurs with Ruwa (2016) that empowerment was one of the crucial factors that determined stakeholders' level of participation in projects.

Similarly, the researcher sought to establish respondents' view on some of the barriers to effective women stakeholder participation in community water development projects. In this regard, different barriers were listed, and respondents asked to indicate their level of agreement or disagreement where also a Likert scale was used with1 as strongly disagree (SD) while 5 strongly agree (SA). Table 4.5 presents the findings.

Table 4.5: Barriers to Effective Women Stakeholder Participation in Community Water

Development Projects (n=105)

C4 . 4 4	SD	SD		D			A		SA		N	CAL D
Statements	F %		F	%	F	%	F	%	F	%	Mean	Std. Dev
Technicality in some project processes	15	(14.3)	33 (	(31.4)	19 (	18.1)	27 (	(25.7)	11 (	(10.5)	2.2	1.39
Illiteracy	8 (7	<sup>7</sup> .6)	11 (	(10.5)	8 (7.	.6)	35 (	(33.3)	43 (	(41.0)	4.7	1.73
Community and organization politics	5 (4	1.8)	7 (6	5.7)	14 (	13.3)	37 (	(35.2)	42 (	(40.0)	4.6	1.69
Rigid institution policies	17	(16.1)	21 (	(20.0)	13 (	12.4)	43 (	(41.0)	11 (	(10.5)	4.2	1.45
Average											3.9	1.57

From the research findings, most of the respondents cited illiteracy, community and organization politics, and rigid institution policies as some of the biggest barriers for effective women stakeholder participation in community water development projects. In this regard, respondents' mean responses of 4.7 for illiteracy, 4.6 for community and organization politics, and 4.2 for rigid institution policies suggests that most of the study informants agreed these elements restricted women's extent as well as form of participation in the water projects. This finding is consistent with Ruwa (2016) rigid organization policies, illiteracy as some of the issues that hindered effective stakeholder participation and thus institutions need to be flexible in their established policies in order to accommodate other stakeholders.

# 4.6 Influence of Women Stakeholder Participation on Performance of Community Water Development Projects Implemented by Athi Water Works Development Agency

The second objective of the study was to establish the influence of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency. The researcher first sought to understand the overall performance of community water development projects implemented by Athi water works development agency. The study informants were asked to give opinion on the overall performance of these projects. Table 4.6 provides the output.

Table 4.6: Overall Performance of Athi Water Works Community Development Projects (n=105)

Category	Frequency	Percentage (%)
Very Poor	2	1.9
Poor	5	4.8
Average	47	44.8
Good	31	29.5
Very Good	20	19.0

From the study's responses, most of the participants 44.8% cited that the overall performance of Athi water works community development projects was average. This suggest that the project outputs served the communities in the areas of jurisdiction adequately as they were done well. Nonetheless, despite some being delivered with set deadlines and costs, others exceeded the estimated time of completion as well as set budgets.

The study further intended to deeply understand the concept of performance of Athi water works community development projects from the three metrics of project performance measurement; time, cost, and quality. As such, respondents were asked to indicate their level of agreement or disagreement on different statements on a Likert scale with 1 as strongly disagree (SD) while 5 strongly agree (SA). Table 4.7 presents the findings with the analysis also merged into three categories of disagree formed by strongly disagree (SD) and disagree (D), neutral category, and agree category of strongly agree (SA) and agree (A).

Table 4.7: Athi Water Works Projects Performance

(n=105)

Ctatamanta	SD		D		N		A		SA		Mean	Std.
Statements	F	<b>%</b>	F	%	F	%	F	%	F	<b>%</b>	Mean	Dev
Most projects are delivered within their estimated budgets	16 (	15.2)	47	(44.8)	30	(28.6)	10	(9.5)	2 (1	.9)	2.3	1.54
Most projects are delivered within their estimated time	14 (	13.3)	41	(39.0)	23	(21.9)	16	(15.3)	11 (	10.5)	2.1	1.42
Most project outputs meet expectations of the beneficiaries among other stakeholders	11 (	10.5)	19	(18.1)	21	(20.0)	37	(35.2)	17 (	16.2)	3.4	1.61
Completed projects are of high quality <b>Average</b>	18 (	17.1)	12	(11.4)	31	(29.5)	36	(34.4)	8 (7	.6)	3.3 <b>2.8</b>	1.72 <b>1.57</b>

Project operating within the set budgets could save the institution from extra budgets. As water projects are key in the community, the need to have this project done is high thus delivering within the budgets is important. Nonetheless, the findings revealed that most projects were not delivered within their estimated budgets. Respondents' mean response of 2.3 suggests that most study informant disagreed with this statement.

It was noted that completion of projects within the set timeliness enhanced the likelihood of the institution planning for other projects and also the beneficiaries gained more in terms of use. In this regard, majority of the informants felt that most of the projects were not delivered within their estimated time. Respondents' mean response of 2.1 thus imply that majority of the informants disagreed with this assertion.

Similarly, as respondents were asked whether most of the project outputs met the expectations of the beneficiaries, most of them remained neutral in their responses. Meeting beneficiaries expectations is crucial for any project and therefore satisfied beneficiaries imply the gap is well filled. As such, the responses from the informants suggested that as much as the Athi water projects improved community water supply as well as sewerage systems, there was still a need to improve them to meet expectations of the beneficiaries.

Finally, the study sought to establish if women stakeholder participation in Athi water works community development projects influenced the three metrics of project performance measurement. The findings were as presented in Table 4.8 and discussed as follows.

Table 4.8: Influence of Women Stakeholder Participation on Project Performance (n=105)

	Yes	No	
Statement	F %	F %	
Cost implication	89 (84.8)	16 (15.2)	
Timely completion	91 (86.7)	14 (13.3)	
Quality of project outputs	78 (74.3)	27 (25.7)	

The findings revealed that the available women stakeholder participation in Athi water works community development projects influenced projects performance. In this regard, most of the respondents cited that women stakeholder participation influenced projects cost, time, and quality of the outputs. For instance, on the time, respondents' cited that majority of the women who participated in this projects regularly attended project management meetings as well as offered insights which portrayed a sense of ownership encouraging all other stakeholders to see the project continue. Similarly, they were key in coming up with some corrective measures at the time of major deviations hence leading to project performance. This findings are consistent with Figueiredo and Perkins (2013) women stakeholders participation influenced water management.

# 4.6.1 Regression Analysis

To establish how project performance depends on women stakeholder participation and express the relationship between the variables, multiple linear regression analysis was used. From the analysis, model summary is as presented in Table 4.9.

Table 4.9: Model Summary

					Std. Error of the
Model		R	R Square	Adjusted R Square	Estimate
	1	.776 <sup>a</sup>	0.791	0.797	1.731

From the summary of the model, Table 4.9, R squared of 0.791 suggests that 79.1% of project performance is influenced by the available women stakeholder participation in initiation, planning, and execution.

To determine the statistically significant difference in the influence of women stakeholder participation; women participation in project initiation, project planning, and participation in project execution on performance of Athi water works community development projects, ANOVA was used at  $\alpha$ =5%. Table 4.9 presents the ANOVA statistics.

Table 4.10: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	54.651	3	18.217	2.058	$.000^{b}$
	Residual	894.192	101	8.853		
1	Total	948.843	104			

a. Predictors: (Constant), women participation in project initiation, women participation in project planning, women participation in project execution

From the ANOVA output, at p=0.000 (p-value < 0.05) suggests that there exists statistically significant difference in the level of influence of women stakeholder participation in initiation, planning and execution on performance of Athi water works community development projects.

Finally, to estimate the influencing power of women participation in project initiation, women participation in project planning, women participation in project execution on performance of Athi water works community development projects, coefficient of variation Table 4.11 presents the statistics.

Table 4.11: Coefficients of Variation

		andardized efficients	Standardized Coefficients		
Model	В	Std. Error	Beta	t	Sig.
(Constant)	2.517	1.412		2.085	.000
Women participation in project initiation	. 738	.015	. 214	0.702	.003
Women participation in project planning	.577	.029	.450	0.431	.000
Women participation in project execution	.839	.058	.670	1.641	.000

a. Dependent Variable: Project performance

From the coefficient of variation output, Table 4.11, all the coefficients for the dependent variables; women participation in project initiation, women participation in project planning, women participation in project execution in the model are statistically significant (p-value < 0.05). For example, for every time women participate in project initiation, the predicted change

b. Dependent Variable: Project performance

in project performance is by 0.738 units. In other words, they have a statistically significant influence on performance of Athi water works community development projects. The model equation is thus presented in the following format.

# Project Performance (Y)

- = 2.517 + 0.738 Women participation in project initiation
- + 0.577 Women participation in project planning
- + 0.839 Women participation in project execution +  $\epsilon$

#### **CHAPTER FIVE**

## SUMMARY, CONCLUSION, AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter presents summary of the findings from the study established on the study's objectives. The chapter further presents conclusions based on the study summary and recommendations tied to the conclusions.

# 5.2 Summary of the Study

The focus of the was to assess women stakeholder participation and performance of community water development projects implemented by Athi water works development agency. This study was thus based two objectives; i) To assess the degree of women stakeholder contribution in community water development projects implemented by Athi water works development agency. ii) To establish the influence of women stakeholder participation on performance of community water development projects implemented by Athi water works development agency.

Accordingly, the study was anchored on two theories; stakeholder theory and theory of performance. As such, the study benefited in the area of interdependence of stakeholders in the stakeholder theory while theory of performance illustrated project performance on three main indicators used in measuring performance, which include time, cost, and quality. In addition, the study built of related literature review on the topic of study. The empirical reviews were tailored to the main study variables on women stakeholder participation and project performance. The identified study gaps from the literature review demonstrated limited information on women stakeholder participation and performance of community water development projects as majority of the early academic work researched on stakeholder participation as a whole and not specific gender. Also, difference in geographical study locations may not allow the use of the findings the early studies to portray the picture of Athi water development projects thus a research gap.

Cross sectional survey design was used to gain a deeper understanding of the research topic by gathering data on women stakeholder participation and performance of Athi water works development projects using quantitative data collection tools. 3 completed and 10 ongoing

projects were randomly sampled from Athi water works area of jurisdiction. Similarly, a sample size of 136 out of 210 was purposively and simple randomly selected from the 13 projects under study. The sample included project manager, management members, engineers, and operational staff. Data collection was done by use of questionnaires subjected to face validity. Pre-test of the research tool was carried to increase the practicability and validity of the questionnaire. Finally, data was summarized and presented using percentages, means, frequencies, and standard deviations.

# 5.2.1 Level of Women Stakeholder Participation in Community Water Development Projects Implemented by Athi Water Works Development Agency

The findings in Table 4.3 revealed that women stakeholders were mostly excluded from related decision-making processes in project initiation, planning, and execution. This suggests that through the different phases of project life cycles, participation of women stakeholders is minimal. Accordingly, the respondents' average mean responses of 2.3 for project initiation, planning, and execution suggests that most of the study respondents disagreed that women stakeholders participated in these phases of the project life cycle.

# 5.2.2 Influence of Women Stakeholder Participation on Performance of Community Water Development Projects Implemented by Athi Water Works Development Agency

From Table 4.8, the findings revealed that the available women stakeholder participation in Athi water works community development projects influenced projects performance. In this regard, women stakeholder participation influenced projects cost, time, and quality of the outputs. For instance, on the time, women who participated in these projects regularly attended project management meetings as well as offered insights which portrayed a sense of ownership encouraging all other stakeholders to see the project continue thus influenced performance. Similarly, from Table 4.9, R<sup>2</sup> of 0.791 suggests that 79.1% of project performance is influenced by the available women stakeholder participation in initiation, planning, and execution. Finally, Table 4.11, show that all the coefficients for the dependent variables; women participation in project initiation, women participation in project planning, women participation in project execution in the model are statistically significant (p-value < 0.05) and thus influence the performance of community water development projects implemented by Athi water works development agency.

#### **5.3 Conclusion**

Basing on the findings obtained from them the study, it was concluded that women stakeholders were mostly excluded in related decision-making processes in different phases of projects life cycles implemented by Athi water works development agency. It was also concluded that the available women stakeholder participants in the Athi water works development agency influenced the performance of the community water development projects. Therefore, women as beneficiaries of water projects who are the managers of water resources in homes should be empowered in order to effectively participate in the projects.

#### 5.4 Recommendations

In the light of the study's conclusions, women stakeholders should be given opportunities to take different positions and participate in community water projects as it is apparent that their participation influences project performance. In this regard, their participation need not to be isolated instances but all through the whole project. Women possess incomparable knowledge of water management because of the gendered responsibilities and roles and therefore this knowledge could be shared as well as used when involved in community water projects for decision making processes.

## 5.5 Limitations of the study

Certain limitations exist in this study, and these could be addressed in future research endeavors. Firstly, the academic landscape of stakeholder involvement is constantly evolving with ongoing updates and publications. This study relied on established definitions and interpretations of stakeholder involvement practices derived from prior literature. Consequently, there is a possibility that new concepts or perspectives have emerged in the field since the completion of this research.

Additionally, the findings of this study are based on feedback from respondents, the majority of whom provided their responses through questionnaires. To enhance the robustness of future studies, researchers may consider incorporating more interviews as a means of triangulating responses obtained through questionnaires.

Moreover, water projects encompass a wide array of practices and involve diverse participants, presenting a challenge in attempting to include all aspects within the scope of the current study.

Future research endeavors could explore strategies to address this complexity and potentially provide a more comprehensive understanding of the subject matter.

# **5.6 Suggestion for Further Studies**

The researcher recommends a future study on women stakeholder participation on project performance in other well-established institutions and in other counties in Kenya to offer baseline data in giving a clear picture of women stakeholder participation in projects in the country.

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#### **APPENDICES**

**Appendix I: Introduction Letter** 

Jackline Mutunga,

C/O

Nairobi.

Dear Respondent,

I am a post graduate student pursuing a degree of Master of Arts in Project Planning and Management at UON, faculty of Business and Management Science.

To complete this degree and receive the award, completion of a research project is mandatory. As such, I am carrying out a study on, "Women Stakeholders Participation and Performance of Community Water Development Projects Implemented by Athi Water Works Development Agency."

In this breath, I request for your support by completing the study's questionnaire to respond to various items provided to the best of your knowledge.

Very important, all responses are meant to be used for academic purposes besides treated with confidentiality.

Thank you.

Yours sincerely,

Jackline Mutunga

# Appendix II: Questionnaire

Kindly take your valuable time to fill out this questionnaire. Every part of the information provided in this questionnaire will be treated with confidentiality and it will be used for academic purposes only. For any question do not hesitate to reach out or ask the researcher in charge.

## Instruction

- a) Do not indicate or share your contact or name on the issued questionnaire
- b) Use the instructions per question to guide you in answering the respective questions

Questionnaire on assessment of women stakeholder participation and performance of community water development projects implemented by Athi water works development agency.

Kindly you are required to put a tick in the box [ ] for appropriate responses in questions below or filling the open spaces.

# SECTION A: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

1. Indicate your gender	Female [	]	Male [ ]	
2. Indicate your level of education.	PhD [ ] 1	Masters	[ ] Bachelors [	] Diploma [ ]
Certificate [ ] K.C.S.E [ ] K.C.P.	E[]			
3. Indicate your position within Athi	Water Work	s Deve	lopment Agency.	Project manager []
Management member [ ] Engineer	[ ] Operatio	nal staf	f[]	
4. How long have you worked at Ath	i Water Woı	rks Dev	elopment Agency	? Less than 1 year
[ ] Between 1-3 years [ ] Between	4-6 years [	] Betw	een 7-9 years [ ]	Over 10 years [ ]
SECTION B: PERFORMANCE O	F COMMU	JNITY	WATER DEVEI	LOPMENT
PROJECTS				
6. In your own opinion, how would y	ou rate the o	overall p	performance of con	mmunity water
development projects by Athi water	works develo	opment	agency?	
Very poor [ ] Poor [ ] Average [ ]	Good [ ]	Very g	ood [ ]	
Please provide an additional commer	nt to support	your an	iswer above	

					••••
7. In your view indicate your agreement/disagreement level with the s	taten	nents	s pro	vided	on
performance of community water development projects implemented	by A	thi v	vater	work	S
development agency. Note 1=SD, 2=D, 3=N, 4=A, while 5=SA.					
			1		
	1	2	3	4	5
Most projects are delivered within their estimated budgets					
Most projects are delivered within their estimated time					
Most project outputs meet expectations of the beneficiaries among other stakeholders					
Completed projects are of high quality					
9. Do you think women stakeholder participation in projects implement works influenced the following project parameters?	nted	by A	thi w	ater	••••
works influenced the following project parameters:	₹7		N.T		_
	Yes	5	No		
Cost implication Timely completion					
Timely completion					
Quality of project outputs					
SECTION C: WOMEN STAKEHOLDER PARTICIPATION ON	PE	RFC	RM	ANC	E
OF COMMUNITY WATER DEVELOPMENT PROJECTS					
10. Do you think the aim of project planning contributed to the performance of the perfor	manc	e of	com	muni	ty
water development projects implemented by Athi water works? Yes	[ ]	No	] (	]	
11. In your view indicate your agreement/disagreement level with the	state	men	ts pro	ovide	d on
performance of community water development projects implemented			_		
development agency. Note 1=SD, 2=D, 3=N, 4=A, while 5=SA.					

	1	2	3	4	5
Women are involved in identification of projects					
Women hold different positions that are key in the					
implementation of projects at Athi water works					
Women are involved in planning of projects					
Women are involved in execution of projects					

12. In your own opinion, how would you rate the extent of women stakeholder participation

in community water development projects implemented by Athi water	er wo	rks?			
Very low [ ] Low [ ] High [ ] Very high [ ]					
13. What factors could you say or think determine the level of wome	n stak	eholo	der		
participation in community water development projects implemented				works	s?
The second secon	Ye		No		]
Flexibility of Athi water works agency procedures	10		111	,	
Level of women empowerment					
Tangible project benefits					
Tangible project benefits					]
Please list any other factor you think of determines women stakehold	er pa	rticip	ation	in the	е
projects					
					•••
	• • • • • •	• • • • • •			•••
					• • •
14. In your oninion, indicate your agreement/disagreement level on h		011 117	ould	CON	
14. In your opinion, indicate your agreement/disagreement level on h	•			•	
women stakeholder participate in community water development pro	jects	imple	emen	ted by	7
Athi water works? Note 1=SD, 2=D, 3=N, 4=A, while 5=SA.					
	1	Τ <u>α</u>	2	1	
Dunings Initiation	1	2	3	4	5
Project Initiation Project identification		T			
Needs assessment		<u> </u>			
Proposing of solutions		-			
Project Planning					1
Budgeting processes		<u> </u>			
Setting of the specific project objectives					
Project Execution					
Lead teams					
Providing feedback					

15. In your view indicate your agreement/disagreement level with the statements provided on some of the barriers to effective women stakeholder participation in community water development projects. Note 1=SD, 2=D, 3=N, 4=A, while 5=SA.

	1	2	3	4	5
Technicality in some project processes					
Illiteracy					
Community and organization politics					
Rigid institution policies					

16. Please list more other barriers to effective women stakeholder participation in community
water development projects.
17. In your opinion, how can women stakeholder participation in community water
development projects be improved?

Thank you for your time and responses!!

Appendix II: Krejcie and Morgan Table

10         10         220         140         1200         29           15         14         230         144         1300         29           20         19         240         148         1400         30           25         24         250         152         1500         30           30         28         260         155         1600         31           35         32         270         159         1700         33           40         36         280         162         1800         31           45         40         290         165         1900         32           50         44         300         169         2000         32           55         48         320         175         2200         33           60         52         340         181         2400         33           65         56         360         186         2600         33           70         59         380         191         2800         34           80         66         420         201         3500         34           85         7	15 20 25 30 35 40
20       19       240       148       1400       30         25       24       250       152       1500       30         30       28       260       155       1600       31         35       32       270       159       1700       31         40       36       280       162       1800       31         45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       33         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500	20 25 30 35 40
25       24       250       152       1500       30         30       28       260       155       1600       31         35       32       270       159       1700       33         40       36       280       162       1800       33         45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       32         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	25 30 35 40
30       28       260       155       1600       31         35       32       270       159       1700       31         40       36       280       162       1800       33         45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       32         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	30 35 40
35       32       270       159       1700       31         40       36       280       162       1800       31         45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       33         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	35 40
40       36       280       162       1800       31         45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       33         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	40
45       40       290       165       1900       32         50       44       300       169       2000       32         55       48       320       175       2200       32         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	
50       44       300       169       2000       32         55       48       320       175       2200       32         60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	45
55     48     320     175     2200     32       60     52     340     181     2400     33       65     56     360     186     2600     33       70     59     380     191     2800     33       75     63     400     196     3000     34       80     66     420     201     3500     34       85     70     440     205     4000     35       90     73     460     210     4500     35       95     76     480     214     5000     36       100     80     500     217     6000     36	45
60       52       340       181       2400       33         65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	50
65       56       360       186       2600       33         70       59       380       191       2800       33         75       63       400       196       3000       34         80       66       420       201       3500       34         85       70       440       205       4000       33         90       73       460       210       4500       33         95       76       480       214       5000       36         100       80       500       217       6000       36	55
70     59     380     191     2800     33       75     63     400     196     3000     34       80     66     420     201     3500     34       85     70     440     205     4000     33       90     73     460     210     4500     33       95     76     480     214     5000     33       100     80     500     217     6000     36	60
75     63     400     196     3000     34       80     66     420     201     3500     34       85     70     440     205     4000     35       90     73     460     210     4500     35       95     76     480     214     5000     35       100     80     500     217     6000     36	65
80     66     420     201     3500     34       85     70     440     205     4000     33       90     73     460     210     4500     33       95     76     480     214     5000     33       100     80     500     217     6000     36	70
85     70     440     205     4000     35       90     73     460     210     4500     35       95     76     480     214     5000     35       100     80     500     217     6000     36	75
90     73     460     210     4500     35       95     76     480     214     5000     35       100     80     500     217     6000     36	80
95 76 480 214 5000 35 100 80 500 217 6000 36	85
100 80 500 217 6000 36	90
	95
110 94 550 004 3000 04	100
110 86 550 226 7000 36	110
120 92 600 234 8000 36	120
130 97 650 242 9000 36	130
140 103 700 248 10000 33	140
150 108 750 254 15000 33	150
160 113 800 260 20000 37	160
170 118 850 265 30000 33	170
180 123 900 269 40000 38	180
190 127 950 274 50000 38	190
200 132 1000 278 75000 38	
210 136 1100 285 1000000 38	200

Note.—Nis population size. S is sample size.

Source: Krejcie & Morgan, 1970