

**ASSESSMENT OF WOMEN PARTICIPATION IN  
SANITATION IN LOW-INCOME RURAL AREAS IGOJI  
EAST, ABOGETA EAST AND MITUNGUU WARDS IN  
SOUTH IMENTI SUB- COUNTY IN MERU COUNTY,  
KENYA**

**HYDAH KINANU**

**A Thesis Submitted in Partial Fulfilment of the Requirement for Conferment of the  
Degree of Master of Science in Sanitation of Meru University of Science and  
Technology**

**2025**

## DECLARATION

This thesis is my original work and has not been presented for the award of a degree in any other institution.

EG407/200750/19

Signature.....

Date: .....

**Hydah Kinanu**

## DECLARATION BY SUPERVISORS

This thesis has been submitted with our approval as University supervisors.

Signed.....

Date.....

**Dr. Eunice Marete, Ph.D**

Meru University of Science and Technology, Kenya

Signed.....

Date.....

**Dr. Leunita Sumba, Ph.D**

Adjunct Lecturer, Meru University of Science and Technology

## **DEDICATION**

I dedicate this research to my beloved parents, Mr. Stephen Kiambi and Mrs. Teresia Stephen Kiambi, whose inspiration, unwavering support, and constant encouragement have shaped my journey and reminded me that I can achieve anything I set my mind to. I also extend this dedication to my sisters Faith, Mercy, Rose, and Pamella Kiambi and my brothers Joses and Mutugi Kiambi whose love and support have been invaluable. To my best friend, Justin Mwangi, thank you for standing by me throughout this journey. Finally, to my precious daughters, Maria Victoria and Amelia Teresa, your presence and love gave me strength and motivation during the entire research preparation period.

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## ACRONYMS AND ABBREVIATION

AMREF	African Medical and Research Foundation
CHV	Community Health Volunteer
CEDAW	Convention on Elimination of All Forms of Discrimination against Women
FAWE	Forum for African Women Educationalists
FGM	Female Genital Mutilation
GBV	Gender-Based Violence
NGOs	Non-Governmental Organizations
SDGs	Sustainable Development Goals
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNICEF	United Nations Children’s Fund
UNESCO	United Nations Education, Scientific and Cultural Organization
WASH	Water, Sanitation, and Hygiene
WASREB	Water Services Regulatory Board
WHO	World Health Organization
WSFT	Water Sanitation Financial Trust

## **DEFINITION OF OPERATIONAL TERMS**

Funds	a sum of money saved by sanitation group members to be used for their projects.
Participation	The involvement of women in sanitation decision-making that affects their lives and taking part in community activities.
Women	a female person associated with a sanitation group or any sanitation activity
Low-Income Rural Areas	In particular areas of land with few residents and buildings, where poverty rates are higher, the income earned can only cater for basic needs and sometimes not enough hence sanitation conditions are poor.
Management	Means of getting sanitation work or activity done by use of guidelines to achieve a set goal or a target.
Knowledge	To have information on sanitation hygiene, and attitude practices
Sanitation group	people who have come together to promote and monitor sanitation by ensuring village households understand the importance of practicing proper hygiene during meal preparation, using latrines properly and cleaning regularly and also ensuring that handwashing facilities are available and with water at all times
Motivation	strategies that encouraged and promoted women to participate in sanitation activities.
Empowerment	to make women strong and more courageous in engaging in sanitation projects and community activities.
Project	A sanitation activity that is well planned involving the contraction of a sanitation facility by use of available resources to serve and the

	community members
Hazards	a harmful or dangerous sanitation situation or condition that can put Women and children at risk of injury and to some extent lead to loss of life
Capacity building	The act of equipping all members of the community, including the poor, women and disabled with useful skills and knowledge in order to take great care and control of their lives and also engage by contributing to sanitation community development projects
Njuri Ncheke	This a well-known group of Elders in the Meru community who are in charge of making decisions on behalf of the Ameru community. They make rules and laws which govern the community and settled disputes and in case of disobedience, they pass judgment on the lawbreakers and mete out punishment
Mugacha	an illegal local brew that some Meru community members prepare to sell and get money to provide for their families. Many brewers are often arrested because of it.

## ABSTRACT

Public participation is extensively recognized as essential for the success of sanitation and water projects in rural areas of developing countries. Women, being the primary users of water schemes in these areas, hold valuable insights into how water and sanitation management can be improved. In recent years, the focus on women's participation in sanitation in South Imenti has gained significant attention. Despite this, evidence shows that women have been lagging behind in their involvement in sanitation activities over the past decade. The study aimed to investigate how knowledge of sanitation is influenced by gender, evaluate the determinants of women's participation in sanitation development and governance, and assess the challenges hindering their involvement. The research was voluntary, utilizing structured questionnaires and in-depth interviews for data collection. Purposive sampling was employed to select three wards (Igoji East, Abogeta East, and Mitunguu) within South Imenti sub-county, with a sample size of 384 determined using Yamane's formula. Simple random sampling was used to select households in these wards. Data collection took place from December 2021 to March 2022, with a response rate of 78% from respondents aged 18 years and above. Data analysis involved the Pearson Chi-Square test to examine the relationship between gender and knowledge of sanitation. The results revealed a significant association between these variables, with a p-value of 0.001 indicating that the observed association was unlikely to have occurred by chance. The findings showed that 54.9% of women had very little knowledge about sanitation, while 45.1% had some level of knowledge. Additionally, 49.5% of respondents disagreed that women were participating in sanitation activities, and only 16.3% agreed that women were involved, despite their primary role as sanitation attendants at the household level. Women's contributions to community sanitation activities were minimal and often overlooked. The study highlighted various roles played by men and women in sanitation groups. Men were typically responsible for decision-making, chairing meetings, mobilizing funds, providing labor during construction, coordinating projects, organizing donor visits, and contributing funds. They were also key actors during elections. Conversely, women were mainly involved in domestic chores such as cooking for constructors, cleaning sanitation facilities, entertaining guests during meetings, and leading prayers. Women were excluded from policy and decision-making processes related to sanitation projects, often due to entrenched community beliefs, practices, and norms. Several factors influenced women's participation in sanitation, including financial rewards, sources of income, influence from leaders, and fear of consequences. Challenges hindering their involvement included tight schedules, age disparities, low literacy levels, and lack of registration fees. Cultural practices and busy schedules further restricted women's rights and freedoms in leadership and management roles. The study recommended promoting girls' and women's education to empower them to take on leadership and managerial positions, discouraging outdated cultural practices, implementing the 2/3 gender rule in sanitation, and encouraging women's empowerment through training in sanitation technologies. Both men and women should be included in community sanitation projects to achieve the sector's goals and meet sanitation targets. This research provides valuable insights into women's participation in sanitation, contributes to the literature, and offers a greater understanding of women's roles in sanitation. It aims to reduce potential gender discrimination and promote effective policy implementation.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background Information**

Sanitation is a critical aspect of public health and well-being, directly impacting the quality of life and dignity of individuals and communities. Globally, access to safe sanitation is a significant challenge, particularly in low-income rural areas where infrastructure and resources are often lacking. The importance of sanitation is underscored by its inclusion in the United Nations Sustainable Development Goals (SDGs), specifically Goal 6, which aims to ensure the availability and sustainable management of water and sanitation for all. Within this context, understanding the dynamics of gender and sanitation becomes crucial, as women and girls are disproportionately affected by inadequate sanitation facilities. This chapter explores the intersection of gender and sanitation, highlighting the role of women, the impact of cultural practices, and the barriers to their participation in sanitation management and decision-making.

#### **1.1.1 Women and sanitation**

Sanitation and water policy statements frequently emphasize the crucial role of women as users, guardians, and managers of sanitation both internationally and nationally (Brewster *et al.*, 2006). Development policies often refer to women as 'local experts' on water, hygiene, and sanitation, or describe them as particularly vulnerable to poor sanitation. Despite the proclaimed centrality of women in these areas, most rights to land and water continue to be vested in men (Naushad, Shafi, *et al.*, 2022). According to Cardador *et al.* (2021), formal decision-making, policy-making, and policy implementation bodies are predominantly male, with most sanitation experts and sanitary engineers also being men.

There are significant evidence gaps, particularly in sanitation leadership and management, that need further investment and research. Despite the availability of sufficient evidence, it is clear that gender plays a crucial role at all levels of leadership and management. However, the contributions of women in the management and knowledge of sanitation are often overlooked. Safe sanitation is critical for everyone, ensuring improved health, well-being, dignity, and human rights (VanRiper, Russel, *et al.*, 2022). In 2015, the UN declared Sustainable Development Goal (SDG) 6.2, which prioritizes universal access to sanitation, aiming to end open defecation and provide access to sanitation for all by 2030, with a specific focus on addressing the needs of women, girls, and vulnerable groups (Cardel, Dean, *et al.*, 2022).

Despite women's responsibility for sanitation within their families, various aspects of sanitation management exclude them. A study in Odisha by O'Reilly (2010) found that about 80% of household toilet construction decisions were made by men, with only 11% by women, indicating minimal inclusiveness of women in sanitation management and decision-making. The role of women is frequently overlooked due to cultural restraints on their formal participation in the community and their contact with outsiders (Burt *et al.*, 2016). According to Giné-Garriga *et al.* (2021), women must be included in the planning, implementing, and monitoring of water and sanitation interventions. Women's obligations should not be detached from the overall issue of public participation. Participation in sanitation requires the inclusion of all community members in contributing knowledge, information, and taking responsibility for solving sanitation problems.

Various studies, such as those in rural Coastal Odisha, India, show that household sanitation facility decision-making is predominantly male-dominated (Routray *et al.*, 2017). Significant gaps exist in women's participation in managerial and leadership

positions compared to men. More research is needed to address the minimal participation of women in these roles. Inclusive economic growth and improved business growth can result from having more women in leadership (Salazar and Moline, *et al.*, 2023). Studies have shown that equal involvement of men and women correlates positively with the sustainability of water and sanitation supplies and improved transparency and governance in management (Anderson *et al.*, 2021). Gender analysis in water and sanitation development plans can ensure inclusivity, avoiding disadvantages for women or users from various ethnic groups or castes (Bhattarai *et al.*, 2021). Women's essential role in environmental management and development is vital for attaining sustainable sanitation (Roscoe and Subramanian, *et al.*, 2029).

### **1.1.2 Gender dynamics**

SDG 5 promotes gender equality and empowers girls and women, addressing discrimination, domestic violence, and harmful practices like genital mutilation, and ensuring equal participation in leadership and decision-making roles. SDG 6 advocates for clean water and sanitation access for all, providing essential guidance to improve sanitation access and ensure that the needs of women and girls are met and tracked accurately. Despite this, the sanitation sector has often disregarded gender considerations, hindering the achievement of universal sanitation access (Almulla *et al.*, 2021). Gendered responsibilities and expectations vary across cultures, geographies, classes, and religions. Promoting gender equality is crucial for achieving sanitation goals.

This research aims to highlight the importance of gender considerations in sanitation. Genderdynamics and power relationships influence sanitation decision-making at household, community, national, and global levels (Dickin *et al.*, 2021) Engaging women in decision-making can lead to better outcomes and progress towards SDG 6.2, improving sanitation for all (Govindan *et al.*, 2020). In rural South Imenti, community

decisions on sanitation facilities often depend on men's opinions, neglecting women's safety and privacy needs. Inadequate consideration of gender can result in resources being wasted on facilities that women do not use due to safety concerns (Garcia-Moreno, 2002). Women's fear of insecurity can lead to continued open defecation, undermining sanitation efforts (Hirve *et al.*, 2015).

## **1.2 Statement of the Problem**

Women's participation in sanitation is continually overlooked despite being acknowledged as 'local experts' on water hygiene and sanitation and being particularly vulnerable to poor sanitation (Apanga and Garn, *et al.*, 2020). Most leadership positions and responsibilities in sanitation are vested in men, resulting in minimal women's participation. This lack of involvement has significant consequences, leading to financial and resource losses in treating preventable infectious diseases that could be avoided with proper sanitation practices. Women and girls are particularly affected by inadequate sanitation, need greater privacy for defecation and bathing, which is often not considered in sanitation planning (Scherer *et al.*, 2021).

Achieving SDG 6.2 requires women's involvement in management plans, decision-making, and policy implementation in sanitation. This research aims to provide insights into engaging women in sanitation development plans across its value chain for proper and safe management. The water and sanitation sector can address gender inequalities by positively impacting women and integrating them socially, economically, and politically through inclusive positions (Clancy *et al.*, 2019). Increased women's participation can prevent resource wastage and ensure that sanitation facilities meet their needs for safety and privacy.

In rural South Imenti, decision-making on sanitation matters is primarily done by men, disregarding women's opinions and needs. This neglect leads to continuous resource

wastage and underutilization of facilities due to privacy and safety concerns. Addressing these issues can significantly improve sanitation outcomes and contribute to sustainable development.

### **1.3 Purpose of the Study**

The purpose of this study is to assess the level of women's participation in sanitation initiatives in selected low-income rural wards of South Imenti Sub-County, Meru County. Specifically, the study seeks to examine the roles women play in decision-making, implementation, and management of sanitation programs, as well as the challenges and opportunities that influence their involvement. By doing so, the research aims to generate insights that can inform policymakers, county governments, and development partners in designing gender-sensitive sanitation interventions. Ultimately, the study seeks to contribute to improved sanitation outcomes, enhanced community health, and the advancement of gender equality in line with the Sustainable Development Goals.

### **1.4 Objectives**

This section presents the general and specific objectives of the study, outlining the overall aim as well as the particular goals that guide the research.

#### **1.4.1 General objective**

To assess women's participation in sanitation in Igoji East, Abogeta East, and Mitunguu wards, in low-income rural areas of South Imenti Sub-County, in Meru County.

#### **1.4.2 Specific objectives**

- i. To examine how management and knowledge of sanitation are gendered.
- ii. To evaluate determinants of women's participation in sanitation development and governance.
- iii. To assess challenges hindering women's participation in sanitation.

## **1.5 Research Questions**

The research was guided by the following research questions;

- i. How are management and knowledge of sanitation gendered?
- ii. What are the determinants of women's participation in sanitation development and governance?
- iii. What are the challenges hindering women's participation in sanitation?

## **1.6 Scope of the Study**

This study was narrowed to women's participation in the sanitation value chain in low-income rural areas of South Imenti in Meru County. In South Imenti this project was the first one on women's participation in sanitation since no other research on women's participation in sanitation has been carried out previously. The research was carried out for a duration of one year from December 2021 to March 2022. The study findings consequently apply directly to this research, although they may enlighten similar research carried out elsewhere.

The researcher anticipated that the respondents could withhold important information on this research in fear that the information given was confidential. The researcher repeatedly convinced and assured the participants that the study was basically for academic reasons and assured them of confidentiality. This helped in winning the trust of the participants. The fear of giving wrong and false information to leaders was a challenge too since it could tarnish the group's image. The researcher hence utilized various stakeholders like public health officers to give more enlightening and unbiased information.

## **1.7 Significance of the Study**

This study has valuable insights for policymakers, county governments, and development partners in designing gender-sensitive sanitation programs. By highlighting

the contributions and challenges women face, the research empowers communities to strengthen women's involvement in decision-making and implementation of sanitation initiatives, thereby improving hygiene and reducing sanitation-related health risks. The findings further contribute to the realization of Sustainable Development Goals, particularly SDG 6 (Clean Water and Sanitation) and SDG 5 (Gender Equality), by demonstrating how inclusive participation fosters sustainable solutions. Academically, the study enriches existing literature on gender, rural development, and public health, offering a useful reference for future scholars and practitioners.

## **1.8 Limitation and Delimitations of the Study**

### **1.8.1 Limitations of the Study**

This study was subject to several limitations. First, it focused only on three wards Igoji East, Abogeta East, and Mitunguu within South Imenti Sub-County, which may limit the generalizability of the findings to other rural areas in Meru County or Kenya as a whole. Second, the study relied primarily on self-reported data from respondents, which may have been influenced by recall bias or social desirability bias, especially given the sensitivity of sanitation and gender-related issues. Third, time and resource constraints limited the depth of data collection and the possibility of conducting longitudinal analysis to capture changes in women's participation over time. Additionally, cultural and social norms in some communities may have restricted open discussions, leading to underreporting of certain challenges faced by women. Despite these limitations, the study provides meaningful insights into women's participation in sanitation in low-income rural settings and lays a foundation for future research in broader contexts.

### **1.8.2 Delimitations of the Study**

This study was delimited to three wards Igoji East, Abogeta East, and Mitunguu within South Imenti Sub-County in Meru County. It specifically focused on low-income rural

households to assess women's participation in sanitation, excluding urban and peri-urban areas. The study concentrated on women's roles in decision-making, implementation, and management of sanitation initiatives, and did not extend to men's participation except where necessary for comparative purposes.

## CHAPTER TWO: LITERATURE REVIEW

### 2.1 Gender and Its Role in Sanitation Policy

In recent years, the Kenyan national government has tried to extend boundaries and adopt gender sensitive policies focusing on improving and promoting sanitation outcomes for women and girls (Khanna & Das *et al.*, 2016). For example, Kenya has partnered with various international organizations including the United Nations, among others to ensure the enactment of gender policies in promoting and protecting women's rights in all public institutions (Htun & Jones *et al.*, 2002).

The Kenyan government has also assisted in promoting the importance of gender differences in sanitation training, education, and sexual reproductive rights in policy engagements and discussions (Nhamo *et al.*, 2018). Implementation of those policies at a national and local levels has been slow and hectic. For example in Kenya, policy implementation in sanitation is a hectic task since it involves a lot of procedures in terms of governance boundaries, parties in charge, and various stakeholders in sanitation at local government and national levels. In Rwanyange, Meru inhabitants were in fear that their farm products would no longer be purchased because of the possible installation of the water treatment plant by Kenyan government and they were strongly against the relocation (Mathenge *et al.*, 2014).

National policies on gender aim at women's empowerment, but inclusion in sanitation is left out (Huggett *et al.*, 2022). For instance, in Cameroon, women are excluded in sanitation leadership positions which results in uninformed decision making, leading to unequal power even when women are given chances in leadership and management (Tantoh *et al.*, 2020). Therefore, structures are needed to make sure that national policies stream down to sub-national and local levels so that gender sensitive approaches can have positive impacts. SDG 6 focuses on ensuring access to water and sanitation for all

and prioritizing the needs of women and girls, hence can promote gender inclusion in sanitation policy making and implementation (Crawford, *et al.*, 2020).

## **2.2 Gender Disparities in Water, Sanitation, and Global Health**

Globally, women are known as the primary water collectors and they are also known to be disproportionately affected by inadequate sanitation (Caruso *et al.*, 2015). Inadequate, unsafe and inaccessible sanitation systems result in a variety of antagonistic health effects between opposing actions of insulin and glucagon to blood sugar levels (Hossain & Sohel, *et al.*, 2020).

Women being primary attendants of sanitation at household level they are most likely to contact water borne diseases as a result of poor sanitation conditions which include cholera, typhoid, dysentery, and *E. Coli* among others (Macklin *et al.*, 2020). Most of these water-borne diseases lead to the death of children under five years as a result of acute diarrhea which can lead to death within a few hours if left untreated. Diarrhea is also the foremost public alarming health concern in most countries. Neglect of tropical diseases for example, schistosomiasis, soil-transmitted helminth infections, and trachoma results in a huge financial burden nationally and globally.

In such situations, women are greatly exposed since they are the immediate caregivers to the sick at the household level and also at times they suffer emotionally as they see their family members wasting away as a result of diseases and also a time they go through the loss of death. Poor sanitation as a result of gender inequalities has also led to vector-borne diseases such as the West Nile virus where women who are primary sanitation attendants lack knowledge on prevention and protection to minimize transmission rates (Warren-Gash *et al.*, 2013). It is estimated that about one-quarter of the stunting and wasting of children under the age of five years worldwide, results from environmental unsanitary conditions leading to poor cognitive physical and mental growth and

development (Mara, 2017). The release of wastewater and untreated human waste into the environment has led to increased risk of contagions and women in search of water are directly in contact with unsafe water. This can be prevented and controlled through the installation of safe sanitation systems by incorporating women in decision-making. Poor sanitation can also lead to Soil-transmitted diseases such as *Ascaris*, whipworm, spontaneous abortion, premature births, and death (Ramayanti *et al.*, 2021).

It is estimated that 1.9 million lives lost and 120 million disability-adjusted cases globally, could have been prevented by sufficient WASH services in 2016 (Johnson and Nguyen *et al* 2019). Poor sanitation affects women and girls directly or indirectly leading to contamination of water for domestic use which is linked to the loss of 830,000 lives and about 49 million disabled adjusted cases among other environmental unsanitary infections (Toor *et al.*, 2021). Improvements in safe sanitation access globally will help in the realization of gender-unaggregated benefits that burden women. As the primary water collectors and managers, women are at high risk of infection from fecal-transmitted diseases like ascariasis, trachoma, trichuriasis, and diarrhea among others (Ssemugabo *et al.*, 2019).

### **2.3 Participation and Equity in Decision Making**

At the household level, one person in a family can decide on where to set up a sanitation facility. Decisions concerning all family members can be made without recognising the needs of others within the household. Studies done previously show that when women are given a higher and increased bargaining power in the household, they spend more on the most basic needs of the family like health, education, and well-being of the family, which in turn promotes and improves children's and particular girls' well-being, education, and nutrition (Black *et al.*, 2021).

Women being in a position to make decisions can improve sanitation outcomes as they are in a better position to push and influence hygiene and sanitation as they play their roles as mothers and caregivers. Men and women have varying differences in influencing the adoption of a toilet system to be used (Rasoulkhani *et al.*, 2018). Marriage is one of the significant drivers for men to prioritize and invest in household sanitation facilities across geographies (Kennedy *et al.*, 2020). In India, if one is married and he has no toilet facility for the bride, one is encouraged to build it hence increasing men's investment in sanitation. Women and girl's mobility in search of privacy while urinating and defecating is restricted by most of the norms and diverse cultural practices and suggest that women and girls should stay at home for their safety.

Men's domination is felt at all levels, concerning education career training and leadership in water management, hence women are disregarded and underrepresented in the water domain. Water management should be democratic, transparent gender-sensitive in representing the needs of both men and women. In Africa, an improvement has been made a start by trying and increasing the number of women serving in leadership as Ministers for water and environment (Bishoge, 2021). Gordon (2020) observes that women's leadership is not much felt at the grassroots hence much effort needs to be put in for proper recognition.

#### **2.4 Equitable Access to Sanitation**

In Kenya, access to sewerage service connections remains with only 21 out of 47 counties having sewerage systems in place, this is a result of pro-sewerage disposition in various areas. However, there is a huge capital resources investment needed for sewerage development and attainment to achieve Vision 2030 goal on sanitation (Bellaubi & Visscher *et al.*, 2014).

Water Service Regulatory Board (WASREB, 2011) reported that 29% of the population had access to improved sanitation as per UNICEF 2020 and 59% of the population has access to safe drinking water. 1,765 villages are certified as open defecation free where an approximation of 5 million people are left behind practicing open defecation (Bekele *et al.*, 2020). Sanitation is one of the human basic rights and is crucial in achieving sustainable development, gender equality, and doing away with poverty.

Globally, about 4.2 billion of the population in 2020 used safely managed sanitation, 884 million people lacked access to clean and safe drinking water and 2.6 billion people had no access to a better sanitation facility (Boyd *et al.*, 2021). Approximately 2.2 billion people, globally, lack access to clean and safely managed water for drinking (Mogaji *et al.*, 2021). Women and girls can do better in education and income generation if provided with safe drinking water and improved sanitation to help them devote more time to other responsibilities duties installing and management of water and sanitation services (Usman *et al.*, 2021).

Education and Health safety for adolescent girls and women are greatly affected by the lack of safe sanitation disposal facilities (Kaur *et al.*, 2018). In several cultures, girls and women can hardly go out to empty the bowels after nightfall and very early in the morning before dawn, this poses a great risk to women and girls' safety, education, and health (Brontë, C. 2018). Adolescent girls and women regularly and involuntarily avert their energy and time from other potential and productive activities into seeking places with adequate privacy and disclosure to relieve themselves.

Reduced consumption of fluids during the day as a way of coping and avoiding going to the toilet frequently poses a health risk to adolescent girls and women including kidney stones (Howard and Bartram *et al.*, 2020). Increased numbers of fecal-oral diseases are a health risk associated with living in highly populated environments. Lack of enough

toilets and separate latrines for girls going through puberty in schools are some of the factors that lead to parents' decision to prohibit their daughters from going to school and attaining their education successfully (MacRae and Clasen *et al.*, 2019).

Poor people residing on riverbanks and low-lying areas experience poor sanitation impacts extensively. (Ballesteros, M. M. 2010). This is because some poor families are continually exposed to flood water runoff contaminated due to open defecation and poor sludge disposal in neighbourhood at higher grounds. Poor families with no sanitary facilities i.e. bathrooms and toilets bath, wash their dishes and clothes, and obtain drinking water from contaminated rivers (World Health Organization. 2019).

Their shallow wells are polluted by pipe leakages, spillover septic tanks, and soak pits. Financial losses as a result of poor sanitation are very high and house occupants lose time and income that could be used for better and more productive resolutions like education and business. High reported cases of frequent diseases and deaths in those communities are directly associated with poor improvised living conditions and many challenges that further exceed health care and burial expenditures add to households' health budget (Mavhura *et al.*, (2019).

It's a good idea to involve women in large numbers to ensure the achievement of sanitation goals and targets. Several researchers have recommended the need to promote and support women, and potentially disadvantaged groups to fully be effective, by ensuring equal participation in decision-making in WASH management to ensure that diverse needs are met accordingly (Lopes *et al.*, 2021). Women's empowerment is a process of transforming power and leadership relations with the aim and in favour of women's rights and social justice and the transformation of economic, social, and political structures (Anderson *et al.*, 2021).

Economic empowerment and inclusion is the capability of strengthening poor women and weaker groups to take part by participating in, contributing to, and benefiting from growth processes in terms that recognize the value of their contributions. Respect for women's opinions, ideas, and dignity, will make it possible for them to negotiate an equal and fair distribution of the benefits of growth and development in sanitation (Saint and Germain, *et al.*, 2021). Women taking part in social and economic activities in the water, sanitation, and hygiene (WASH) sector in Indonesia, promoted and increased women participation in sanitation and experience empowerment (Indarti and Rostiani *et al.*, 2019) Empowerment should therefore be realized and understood well and not as an endpoint, but as a journey characterized by recognition, negotiation, cooperation, and acceptance with various determinate consequences due to its dependent nature. Empowerment must be made brainpower amid the particular environment in which women stay (Crittenden *et al.*, 2021), and based on the context of the relations between people, they may experience disempowerment or come to acquire the ability to make strategic life choices contingent on a prior or future state. Women face multiple and common constraints related to the social expectation that women carry out the largest share of unpaid care work and chores in their households, and continuously experience gender segregation in the labour market (Tandrayen and Ragoobur *et al.*, 2021). Increasing and promoting women's involvement in economic activities may not reduce subordination based on their gender unless accompanied by a change in men's self-conceptions and roles as well as those of women (Venugopalan *et al.*, 2021).

Raising awareness is a crucial step in addressing gender inequalities, as it informs decision-making by highlighting the impact on the circumstances and roles of men and women and their interactions. Any changes or interventions aimed at promoting equality across all sectors, including sanitation, should consider this understanding (Iverson *et al.*,

2018). According to United Nations, Economic and Social Council (Aguilar and Revelo *et al.*, 2021), a mainstream gender perspective is a process of assessing the implication for women and men of any planned action, including legislation, policies, or program, in all areas and at all levels, which is a strategic concern and making and experiences of women and men. Gender differences focus is of great importance with the concern of improving sanitation initiatives and gender equality measures should be encouraged in plans, structure, policy implementation, empowerment, participation in information capacity building, and leadership (Dery *et al.*, 2020).

### **2.5 Equitable Access to Sanitation Rights for Better Productivity**

Women's involvement and empowerment in sanitation can help increase their productivity by ensuring equitable access to sanitation rights, this can be possible by tackling the main causes of poverty and gender inequality (Tang, 2022). This can be possible by promoting and ensuring coherent policies, dedicated financing, legal framework, partnership, and strong institutions with the inclusion of all relevant stakeholders in the community. Accountability and transparency are important key values to attain gender balance in sanitation and fighting corruption (Tull *et al* 2019).

However, lack of land ownership rights is the underlying reason for limited access to water and sanitation by the majority of women and maybe the main reason for greater poverty challenge to many women-headed households, as shown by World Bank research studies done in many countries (e.g. in most of Latin America), where ownership is a precondition for water points access (Kay, 2006). Shockingly, the research shows that very few women hold title deeds which are approximately 2% of the world's private land and this limits women from fully engaging in sanitation.(Gaddis *et al.*, 2018).

In most of the areas where women have legal rights to own a piece of land, cultural beliefs and some customs often limit their say, hence preventing them from taking de facto land control and natural resources as realized in Cameroon and Zimbabwe (Achieme, 2019). In response to the needs of poor farmers who require a well-explained and detailed understanding of both men's and women's basic knowledge systems, resource utilization, and income-generating chances as well opportunities to help women have the right to take full charge of sanitation spaces and utilize every available resource for the improvement of sanitation at the household level. (Weltzien *et al.*, 2019).

In low-income areas, food security is dependent on women's continuous production to feed the family population. Evidence shows that women are responsible for nearly half of the food production in the whole world when given equal rights in managing sanitation spaces (Hovorvka *et al.*, 2009). In most developing nations women living in rural areas produce an average of 60%-80% of the world's food (Jacobson, 2018). Women have also shown a leading role in initiating sustainable use of resources for small-scale farming in many communities leading to improved sanitation.

Women are also very important in managing and safeguarding watersheds and wetlands (Njiriri, 2013). Despite their efforts to feed their families and the nation at large, they face various challenges which include sexual harassment, poor postnatal hygiene, risk of infections leading to death of infants and mothers as a result of poor sanitation. Women are primary family caregivers hence most of their time is tied to family responsibilities (Matamanda *et al.*, 2021). The time, energy, and resources can be better used in self-advancement in education, children's education, and improvement of sanitation conditions for better health and nation-building. Incorporating women in sanitation goals can bring a huge impact on sanitation development plans. This can help in promoting sanitation coverage to minimize resource wastage and this enlightens on how crucial it is

to accord many women recognition in sanitation as key contributors to our nation's development process (Clasen *et al.*, 2019)

## **2.6 Resource Mobilization in Sanitation**

The Kenyan government is aiming and striving to improve water and sanitation coverage by 2030 for the population living in low-income areas. It is approximated that a population of about 68 % is served by non-sewered systems where this percentage is aimed to increase in order to take care of minority groups in Kenya (Nzau *et al.*, 2020). However, the government has faced several challenges over the decade including inadequate resources. To achieve total sanitation coverage by 2030, the Water Sanitation Financial Trust aims at mobilizing USD 310 Million by June 2022 (WSFT, 2012).

This will be achieved through sanitation policy implementation with the inclusion of all genders. The sanitation sector is responsible for implementing proper policy frameworks that will aid in promoting and giving guidance on sanitation coverage increment in terms of safe management (Tortajada, 2020). Various inducement mechanisms have been proposed to ensure sanitation achievements which include, annual reporting and monitoring of onsite sanitation and sewer systems (Mulder, 2020).

Financial accountability for sewerage services with improved onsite sanitation and sewers should be ensured to promote proper and sustainable sanitation for all (Berg, 2021). The Kenyan Government has outlined various mechanisms to mobilize sanitation resources which include, collaborative UNICEF Humanitarian and WASH donor mechanisms to mobilize sanitation resources (Dickin *et al.*, 2022).

In 2010, the Kenya Constitution declaration manifested significant indicators in policy implementation reforms for both sanitation and water sectors. Article 42 recognizes the right to a healthy and clean environment for all Kenyan citizens and Article 43 gives rights to safe and clean water, adequate measures and the right to accessible, sustainable,

adequate and reasonable standards of sanitation by 2030 (Heymann & Levy *et al.*, 2019). The Kenya Vision 2030 is Kenya's development blueprint that aims to transform Kenya into an industrialized middle-income country. It also aims at ensuring the provision of high and better quality life entailing safe, and clean water, equitable and sustainable sanitation to all citizens in consideration of gender by 2030 (Hutton & Varughese, 2016). The vision development was done through inclusion of both men and women and all other stakeholder process by consulting Kenyans from various part of the country.

The government should continue to primarily be responsible for funding water projects from general public revenue, loans, cross-subsidization, user fees, and borrowing from other organizations to finance water resources and sanitation infrastructure needs (Alford *et al.*, 2009). In India women groups and organization networks have steered and played a critical and stimulating duty and role in promoting and mobilizing resources to ensure sustainable and equitable water and sanitation management projects (Aguilar and Revelo *et al.*, 2021). For example, Swayan Shikshan Prayog in India in 2005 encouraged and promoted the formation of over 1000 women credit and saving groups that have sustained their savings where they give loans to one another.

Women groups have started organizing and addressing development issues by ensuring water supply in their communities and water sanitation needs are promoted (Dery *et al.*, 2020). Regardless of extensive progress in sanitation and hygiene in Kenya, most Arid and semi-arid regions are still experiencing poor environmental conditions (Mwai and Nyole *et al.*, 2022). For example, Kitui county is characterized by poor sanitation, hygiene coverage, and water supply shortages, and in Kakamega prevalence of WASH related-illness like diarrhea and typhoid amongst the community members was ascribed to the poor sanitary, inaccessibility to safe water for drinking and poor hygiene conditions (Mwenje *et al.*, 2021)

A report by AMREF revealed that 39.9% of people in Kitui obtained water from rivers with 57.4% walking for more than 2 km to get water. Toilet coverage is at 56.4% and the open defecation rate was at 8.5% (Bukachi and Omia *et al.*, 2021). Gender inclusiveness can boost sanitation coverage in various ways by involving women to take part in decision making in any community activities. In Meru County, pit latrine coverage was at 60% in 2019 hence encouraging the practice of open defecation in various areas within the county. Including women in sanitation decision making and developments plans can promote sanitation coverage within Meru (Njuguna,2019).

## **2.7 Capacity Building**

Focusing and targeting girls and women in education, training, and capacity building is key to the sustainability of water and sanitation needs. For a fresh approach and specifically in technical and managerial duties to ensure women and girls presence and opinion are taken into account in the decision-making process. In very few cases, programs and projects are targeted to improve women's expertise in social sanitation (Katusiime *et al.*, 2020).

Development on hygiene and education that focuses on gradual scaling down to ensure responsibility in the operation and maintenance of water supply and sanitation (Nhamo *et al.*, 2018). The UN water policy capacity building is important in promoting and improving sanitation because it aids in mobilizing resources and integrating more people both men and women with diverse skills. There is a gap in women's participation in sanitation in most developing countries (Franco *et al.*, 2019).

## **2.8 Women in Conflicts, Hazards, and Emergencies**

A disaster of any type either natural or human-influenced conflict leads to endangering lives and women's dignity. Inadequate sanitation, insecurity, and poor hygiene practices in emergencies affect women greatly (Dery *et al.*, 2020). At times women are left to

cater for family needs where fathers and husbands have lost their lives in conflicts, joined armed groups in the fight, or are serving imprisonment terms in jail. In refugee camps where most people seek asylum during conflicts, sanitation situations are of high risk to expectant mothers and those nursing their under-age babies (Verwimp & Van Bavel, 2005).

Poor human waste management leads to great exposure to fecal-related diseases among children under the age of five years. Unhygienic environmental-related diseases can lead to acute diarrhoeal resulting in death if left untreated within a short time (Perry *et al.*, 2021). Inadequate sanitation and insecurity in accessing sanitation facilities, result in double hardships for women as it causes them to wait until late hours to urinate or defecate. Such situations are of great risk and endanger women and girls by exposing them to rape and harassment. In most cases, women are also disproportionately affected by both natural and human disasters such as war, terrorism attacks, floods, and earthquakes which result in gender inequality regarding economic, political, social status, education human rights, and health among other conditions (Bolin *et al.*, 2018).

Women also have high death rates in disaster occurrences as they often do not receive a caution or other knowledge and information about hazards and risks. Women can be trained to have skills and knowledge on how to develop hygiene practices that are healthier to prevent future sickness to their children and themselves (Gribble *et al.*, 2021). Food safety has turned out to be one of the threats to world-wide health in 2019 and the epidemics of foodborne ailments are the main public health hitches and had affected about 76 million illness, 325,000 hospitalizations and 5000 deaths annually. However, 20 - 40% of such sickness is related with the ingesting of contaminated food which result to outbreak of foodborne infection comprising WASH related diseases. T

he problem is more evident in developing countries owing to dominant poor food handling, sanitation practices, insufficient food safety laws, weak monitoring systems, inadequate of financial resources to capitalise on safer utensils, and absence of education for food handlers (Odipe and Raimi *et al.*, 2019). Gender inequality complicates and extends the time for women's recovery in cases where women don't receive timely care for the trauma experienced in disasters. For example, during floods in Mozambique in 2000, there was scarcity in clean water supply and many women were forced to use flood water for domestic use like cooking, cleaning, and drinking among others, thereby increasing the risk of water-related diseases outbreaks (Ghosh, 2007).

## **2. 9 Theoretical Framework**

Bronfenbrenner (1974) developed the environmental theory, which shapes how people encounter and respond to different ecological dynamics that impact their behaviour at diverse degrees. The ecological theory bids a structure through which the society can discover the connection between the individual and their surroundings. Bronfenbrenner theory has five phases which include individual, interpersonal, organizational, community, and public policy. The five phases go hand in hand with various stages in human life and how their behaviour is shaped by environmental individuals thrive in. Women participation in sanitation is influenced by the five stages of this theory hence they concede with their environmental factors they live in.

Women participation in South Iment Sub-county has been disregarded for decades and for all generation have adapted to the men dominance in the community. Social cultural factors practised in the community have also shaped how the society members perceive and respond to the trend in the community on women participation in sanitation. Women's participation in sanitation has also been challenged by various environmental factors which has limited them from fully taking part in sanitation. Both external and

internal environmental determinants have a great impact on how women's participation has been shaped leading to poor sanitation practices in South Iment sub-county. This has continually led to human health risk resulting to wastage of resources in treating illnesses which can be prevented by ensuring proper sanitation practices in the community by ensuring gender inclusivity and all the stakeholders are consulted and their opinions and ideas considered in sanitation decision-making. Diverge participation can have a great impact to how sanitation activities and projects are carried out.

There is still an unceasing struggle to access equitable and sustainable safe water and improved sanitation services in the selected three wards, Igoji East, Abogeta East and Mitunguu in South Iment sub- county. This study is a stepping stone to having a healthy community, with safe sanitation management to promote development and growth of the community and the country as a whole.

## **2.10 Conceptual Framework**

This section gives description of the conceptual framework and explains the structure of ideas, theories, and concepts underpinning the study, showing how core variables are connected and guiding the research process.

### **2.10.1 Contextual Factors Influencing Sanitation Practices**

The framework begins with an examination of the contextual factors that shape sanitation practices. These factors include cultural norms, infrastructure, and policy and governance. Cultural norms dictate societal beliefs and practices around gender roles, which often marginalize women's contributions and involvement in sanitation. Infrastructure pertains to the availability and accessibility of sanitation facilities, with a particular focus on how these facilities meet or fail to meet women's specific needs for privacy and safety.

Policy and governance involve the decision-making processes and regulations that either include or exclude women's perspectives in sanitation management. Together, these factors create an environment that influences who participates in sanitation practices and how these practices are managed.

### **2.10.2 Central Issue - Women's Participation in Sanitation**

At the heart of the framework is the central issue of women's participation in sanitation. This research focuses on the stark reality that women, despite being vital to maintaining hygiene and sanitation at the household level, are significantly underrepresented in sanitation-related matters. Women's involvement in sanitation is minimal due to systemic barriers and gender biases, resulting in a lack of consideration for their needs and inputs in sanitation planning and decision-making processes. Addressing this issue is crucial for improving sanitation outcomes and ensuring that women's voices are heard and valued in this sector.

### **2.10.3 Core Variables:**

- i. **Gendered Management and Knowledge of Sanitation:** The framework explores how sanitation knowledge and management practices are divided along gender lines. It examines the ways in which men and women are perceived and treated differently in terms of their knowledge, roles, and responsibilities in sanitation. This variable highlights the gender biases and disparities that exist in the management and understanding of sanitation practices.
- ii. **Women's Participation in Sanitation Development and Governance:** This variable focuses on the extent and nature of women's involvement in the sanitation sector. It looks at how women participate in the planning, decision-making, and implementation of sanitation projects. Understanding the level of

women's participation helps identify gaps and opportunities for improving their engagement in sanitation governance and development.

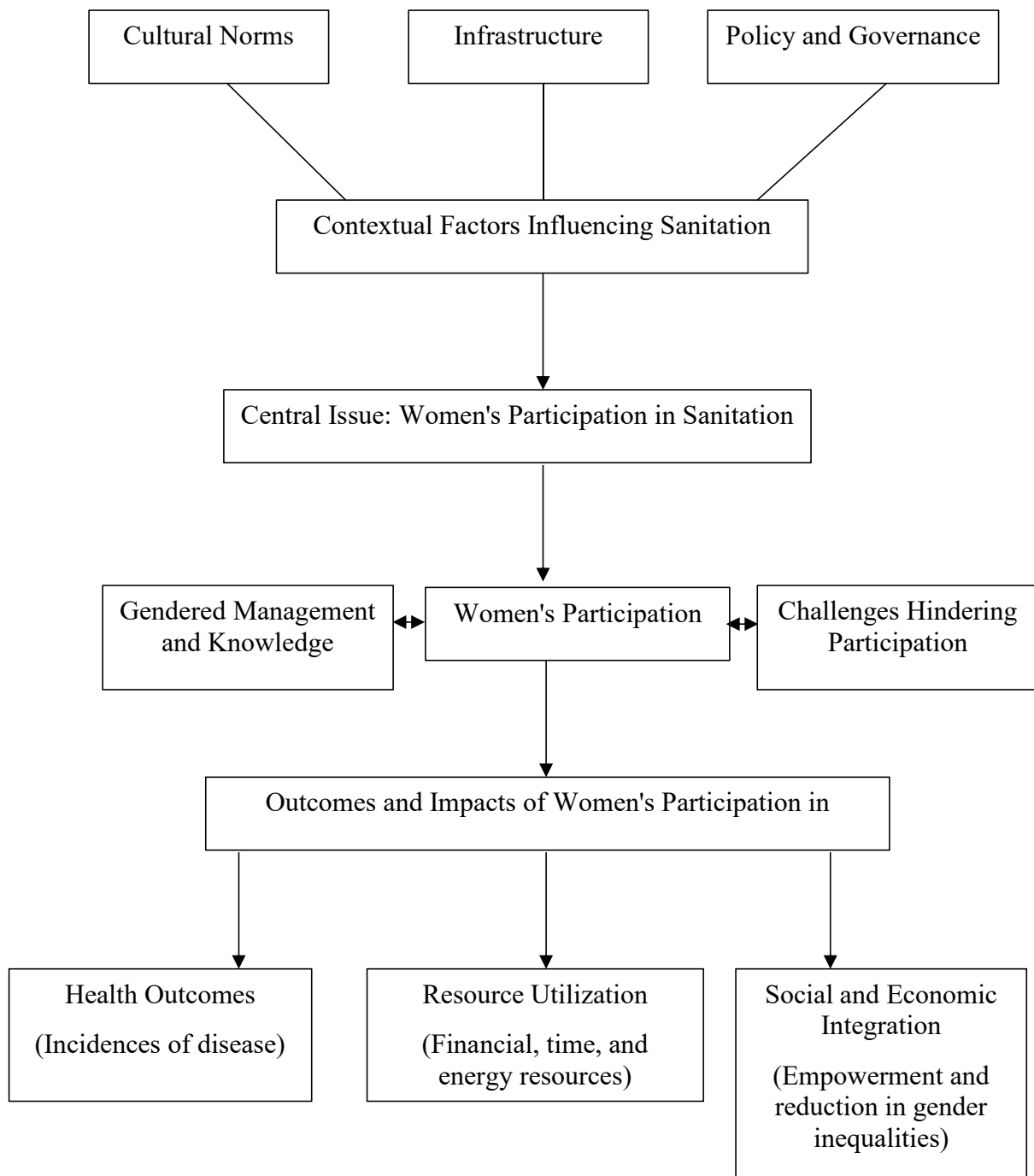
- iii. **Challenges Hindering Women's Participation:** The framework identifies the barriers that prevent or limit women's active involvement in sanitation activities. These challenges may include societal norms, lack of access to resources, inadequate infrastructure, and policy constraints. By recognizing these obstacles, the research aims to propose solutions to enhance women's participation in sanitation.

**2.10.4 Outcomes and Impacts:** The framework illustrates the potential positive outcomes of increased women's participation in sanitation. Enhanced participation can lead to improved health outcomes by reducing the incidence of waterborne diseases such as cholera, typhoid, and hepatitis. Better resource utilization is another significant impact, as financial, time, and energy resources currently spent on treating preventable diseases can be redirected toward more productive uses. Moreover, greater involvement of women in sanitation can lead to their social and economic integration, empowering them and reducing gender inequalities. These outcomes highlight the broader benefits of addressing the central issue of women's participation in sanitation.

Overall, this conceptual framework serves as a guide for the research by illustrating the relationships among the key variables and their impact on women's participation in sanitation. It provides a comprehensive understanding of the issue and helps identify strategies to improve women's involvement in sanitation practices, ultimately leading to better health, resource utilization, and gender equality outcomes.

**Figure 2. 1**

*Conceptual Framework*



*Source: Researcher, 2022*

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Introduction**

This chapter focused on the procedures and methods that were applied in the study to satisfy the three objectives for the study. The chapter included study design and approach, the study area, study population, sample size determination, sampling techniques and sampling procedure, data collection tools and procedure, data analysis and management, eligibility criteria, pretesting and pre-visit and ethical considerations.

### **3.1 Research Design**

The study adopted a convergent methods design approach (qualitative and quantitative) to collect data among low-income rural households within three selected wards; Igoji east, Abogeta East and Mitunguu in the South Imenti sub-county. This research design was used in collecting information because it was the most preferred for being valid and reliable in gathering information on women's participation in sanitation in low-income rural areas of South Imenti. The validity of the convergent method design was to demonstrate that there was a positive correlation between measures of related constructs. The reliability of the convergent design was the integration of both data to help the researcher gain a complete understanding of the data provided by quantitative and qualitative results.

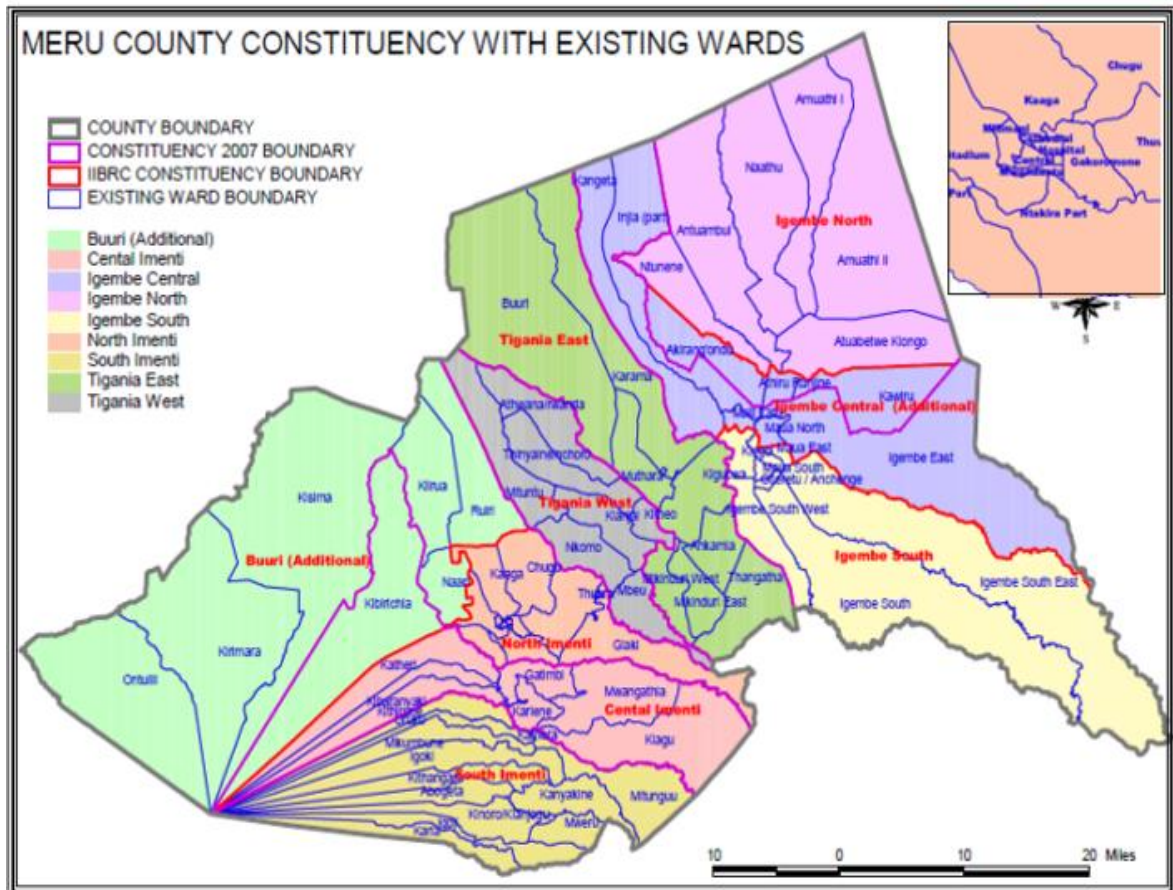
The study design was very flexible to explore and allowed a thorough investigation of participants' Knowledge on how sanitation is gendered, the determinants of women's participation and challenges which hindered women participation in sanitation. Questionnaires and interviews were used to gather comprehensive and detailed information about women's participation. Cautious examination of any perceived limitations in all targeted respondents was very useful in obtaining information. The

design relied on the ability and capacity of participants to give relevant and useful information.

### 3.2 Study Area

**Figure 3. 1**

*Map of Meru County with existing wards*



*Source: Google map.2022*

The study was conducted in three wards namely Igoji East, Abogeta East, and Mitunguu in South Imenti sub-county in Meru County. South Imenti sub-county is one of the eleven sub-counties of Meru County. According to the national census (2019), the county has a total population of 1,406,796 people comprising 699,532 males, 707,228 females, and 36 intersex persons (KNBS, 2019). South Imenti sub-county has a total population of 206,506 (KNBS, 2019). The three wards consisted of Igoji East with 10,498 households, Abogeta East with 10,917 households and Mitunguu with 9,729 households a total of

31,144 households. The main economic activities in the areas is agricultural farming and livestock keeping which are done on small-scale farming.

### 3.3 Target Population

The target population of the study was 384 participants consisting of 170 men and 214 women. The participants were all drawn from the 3 wards which include Igoji East with 130 respondents, Abogeta East with 134 respondents, and Mitunguu with 120 respondents. The key informers included Public Health Officers, Sanitation Officers, Community Health Volunteers, women leaders and area chiefs, who helped in spearheading the assessment of women’s participation in sanitation.

**Table 3.1**

*Study participants from 3 selected Locations in South Imenti.*

<b>Participants Category</b>	<b>Men</b>	<b>Women</b>	<b>No. of participants</b>
Igoji East	58	72	130
Abogeta East	60	74	134
Mitunguu	52	68	120
<b>Total</b>	<b>170</b>	<b>214</b>	<b>384</b>

*Source: Researcher, 2022*

### 3.4 Eligibility Criteria

The eligibility criteria were the specific requirements each participant had to meet to take part in the research. The target population of the study was interrelated in terms of demographic areas information, social status, age, level of education, source of income, and gender. The eligibility criteria helped the researcher to accurately attain very useful information.

### 3.4.1 Inclusion criteria

Inclusion criteria were the standards characteristics each respondent must had to be eligible to take part in this research. Permanent respondents above the age of 18 years and who had lived in the study area for the last five years took part during this study.

### 3.4.2 Exclusion criteria

Persons under the age of 18 years and non-residents were all excluded from this research. This was to help in acquiring valid data for study findings and analysis.

### 3.5 Sample Size Determination

Yamane's formula

$$n = \frac{N}{(1 + N(e^2))} \quad (1)$$

Where  $n$  = desired sample,  
 $N$  = target population,  
 $E$  = sampling error (taken to be  $\pm 10\%$ )  
 $E$  = error margin/ margin of error (0.05)

Igoji East  $10498/31144 * 384 = 130$ ,

Abogeta East  $10917/31144 * 384 = 134$ ,

Mitunguu  $9729/31144 * 384 = 120$ ,

$$\frac{31144}{(1 + 31144(0.05)^2)} = 384$$

For equal representation and selection from every ward random sampling approach was to all household participants were selected from unevenly distributed strata.

A sample of 384 respondents was selected from 3 wards, namely, Igoji East, Abogeta East, and Mitunguu in South Imenti, Sub-county. Cluster sampling of the constituency into its 3 respective wards was randomly selected. A simple random method was employed for proportions that were unevenly and universally distributed. The selection

was done through the use of a simple random sampling technique that depended on probability. The sample included all the respondents and the key informants who were 2 public health officers, 3 Sanitation Officers, Area chiefs, 3 Community Health volunteers, 4 women leaders, and men and women members in various women groups.

### **3.6 Sampling Techniques**

Households were the study sample; Simple random sample procedures were used to identify the first household to start with to arrive at the research sample. The three wards in South Imenti were purposive identified sampling was used to identify the key informants in the stratum across the various sections of sanitation department in South Imenti sub-county.

The 3 wards in South Imenti were purposively identified. The area is served by Public health officers, sanitation officers, and community health volunteers. Data collection by use of a questionnaire was undertaken within the three wards which include Igoji East, Abogeta East and Mitunguu.

Stratified random sampling was employed to choose participants in 3 locations for the research as it helped in ensuring a fair and equal representation of the variables. The population was divided into subgroups known as strata. The stratification was based on gender, age, geographical area, and occupation. Within each section, the selection of participants was simple random sampling where heads of households were selected since they hold precise information about the social family setup. This method was the best since the study area comprises different subgroups with different views and opinions on women's participation in sanitation.

### **3.7 Data Collection Methods**

This section discusses the data collection methods, which are the systematic techniques and procedures used by researchers to gather information from various sources in order to answer research questions, test hypotheses, or evaluate outcomes.

#### **3.7.1 Questionnaires**

A semi-structured questionnaire was used to collect primary data from the households. Kothari (2007) terms the questionnaire as the most appropriate instrument for its capacity to gather a lot of data in a sensibly speedy range of time. It guarantees the confidentiality of the source of information complete anonymity while ensuring standardization (Kerlinger, 1973). It is for this above reasons that the questionnaire was select as the most suitable instrument for this study. The questionnaire contained a mix of questions, allowing for both specific responses to a broad range of questions and open-ended questions. The questions were in line with the specific objectives of the study. The open ended questions were to allow the respondents to freely express themselves without any limitations of closed ended questions.

They also allowed the respondents to talk about issues that maybe were not foreseen in the closed ended questionnaires. The questionnaires were structured to ensure that each objective of the study was adequately addressed as highlighted in Mugenda and Mugenda (2003) separated into two sections where; section one was to pact with the demographic information while section two was to deal with the study variables. Additionally, section two was subdivided into subsections in line with the study objectives. Primary and secondary data was gathered. For quantitative data, structured questionnaires were distributed at the household level to both men and women above 18 years and having residents in the selected for more than five years. The study used primary data sourced from informants where questionnaires were administered to

informants from income low-income rural areas in South Imenti Sub-County in the three selected wards.

### **3.7.2 Interview guides**

The study adopted a key informant interview guide to collect data from the key informants who included Public Health Officers, Community Health Volunteers (CHVs), Areas chiefs and women leaders. Key Informant Interviews were conducted using a structured schedule for the principal people involved in the sanitation. The selection of the informants took into account their knowledge about the community and their role in the implementation of the Sanitation policy. For qualitative data in-depth interviews were conducted with key informants' Public health officers, community health volunteers, area chiefs and women leaders. The study used primary data sourced from key informant interviews and questionnaires in low income rural areas in South Imenti Sub-County.

### **3.8 Reliability and Validity**

Content legitimacy was established by supervisors; who ceaselessly tested, assessed and featured mix-ups in the research instruments. The validity of an instrument is the degree to which an instrument measures what is intended to measure (Graham *et al.*, 2021). Content Validity refers to how much the results got from the investigation of the information really address the facts of the study. According to Borg and Gall (1989), "validity of an instrument is improved through master judgment". To achieve this, interviews and questionnaires included a variety of questions on the knowledge of sanitation and women's participation. The questionnaires and interviews were based on research objectives.

The research tool (questionnaire) was pretested in Igoji East one of the three selected wards in South Imenti Sub County, by administering 10% of questionnaires to 12

respondents in one of the three wards. This was done to identify any hitches with the process and determine areas that required improvement and amendments. The selected wards had the same characteristics as those where the study was based.

### **3.9 Data Analysis**

The data collected was qualitative and quantitative. Qualitative data was coded, cleaned, and checked to realize any error and omit to guarantee quality data was analyzed. Coding was by allocating the numerical figures to a response to each question on a questionnaire paper to enable data entry and analysis. Data was later entered into SPSS (Version 22) where analysis was done. Frequency tables were generated to present findings on which interpretation, discussion, and conclusions were made, followed by grouped themes and a narrative summary to illustrate and clarify information derived from the field.

### **3.10 Ethical Considerations**

Approval to conduct this research was sought from the Meru University of Science & Technology Institutional Research and Ethics Review Committee. MU/1/39/28 Vol.2(68) Approval to carry out the research was obtained from the Office of the Deputy County Commission, Meru after submitting an introduction letter obtained from the Dean, School of Engineering and Architecture, Meru University of Science and Technology. Additionally, official permission to conduct the study was sought from the relevant Area Public Health Officer's (PHO) office, Chief and respective village elders to give authority and necessary support to carry out the study.

These ethical considerations were fully observed to ensure the success of the research.

## CHAPTER FOUR: RESEARCH RESULTS

### 4.1. Introduction

This chapter presents the study findings according to the data collected in the field. The findings were presented according to the study objectives. Tables were used in the presentation of the results. The data was acquired from a sample size of 301 respondents. The findings attained from the study have been discussed in the sub-sections below.

The researcher obtained 301 questionnaire copies and conducted 14 interviews with respondents as per the sample size of the study. The respondents who returned their dully filled questionnaires and the interviews response rate was 78.4 % (n=301) as shown in table 4.1 below.

**Table 4. 1:**

*Response Rate*

<b>Response rate</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Returned (Questionnaire + Interview)	301	78.4
Non returned	83	21.6
Total	384	100

*Source: Researcher, 2022*

The research targeted to obtain data from 384 households within south Imenti constituency sub-county. However due to turn down of the respondents to take part the questionnaire which were fully filled were 301 which represented a response rate of 78.4%. According to Mugenda and Mugenda (2003), a response rate of 70% and above is regarded adequate to generate reliable data for analysis and therefore the data collected fortis study was reliable.

## 4.2. General Characteristics of the Respondents

The General characteristics here provide information about respondents' general features to help get a clear picture of all respondent characteristics. The study attained general information from the respondents to help understand sample characteristics and to define if samples were the representation of the target population to take part in data collection. In this case study, the researcher wanted to establish the gender of the respondent, age of the respondents, level of education of the respondent and source of income.

### 4.2.1. Gender of the respondent

Among the respondents (from both questionnaire and interviews), there were 60.8% (183) female and 39.2% (118) male as shown in the table 4.2

**Table 4. 2:**

*Gender of Respondents*

<b>Gender</b>	<b>N</b>	<b>%</b>
Female	183	60.8%
Male	118	39.2%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

### 4.2.2 Age of the respondent

The respondents were categorized in the following age brackets: 12.6% (38) of the respondents were in the age of 18-25, 45.5% (137) were between the age of 25-33, 22.3% (67) were 34-41, 15% (45) were 42-49, and 4.7% (14) were aged 50 years and above and above as shown in table 4.3.

**Table 4. 3:***Age of the Respondent*

<b>Age Range</b>	<b>N</b>	<b>%</b>
18-25	38	12.6%
26- 33	137	45.5%
34-41	67	22.3%
42-49	45	15.0%
Above 50	14	4.7%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

**4.2.3 Type of household**

The study determined household type within the study area, for Man-headed, more than one wife was 11.3% (34), Man-headed, one wife 80.1%(241) and women-headed, widowed 5.3%(16) and 3.3%(10) did not answer to this particular questionnaire. The data in table 4.4 shows the distribution of the type of household.

**Table 4. 4:***Household Type*

	<b>N</b>	<b>%</b>
No response	10	3.3%
Man-headed, more than one wife;	34	11.3%
Man-headed, one wife;	241	80.1%
Woman-headed, widowed;	16	5.3%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

#### 4.2.4 Household head

The study sought to establish the head of household. Majority of the respondent were not the household head. In particular, 5.6%(17) did not respond, 68.1%(205) were not household head and 26.2% (79) were household head as the table 4.5 below.

**Table 4. 5:**

##### *Head of Household*

	N	%
No response	17	5.6%
No	205	68.1%
Yes	79	26.2%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

#### 4.2.5 Relationship to household head

The respondent relationship to the house head was asked to ensure the respondent was a member of that household. Majority of respondent where the house head was not present were wife with 42.5%(128), daughter 18.3%(55), Husband 22.6%(68), Worker 4.7%(14), for sons were 8%(24) and 4% (12) did not respond. Table 4.6 below shows the relationship of the respondent to the household head.

**Table 4. 6:**

##### *Relationship to household head (if the person being interviewed is not the head)*

Relationship	N	%
No response	12	4.0%
Daughter	55	18.3%
Husband	68	22.6%
Manager/Worker	14	4.7%

Son	24	8.0%
Wife	128	42.5%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

#### **4.2.6 Gender of household head**

This section presents data on the gender distribution of household heads.

**Table 4. 7:**

*Gender of Household Head*

<b>Gender</b>	<b>N</b>	<b>%</b>
No response	16	5.3%
Female	46	15.3%
Male	239	79.4%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

The data in Table 4.7 shows that the majority of households were headed by males, accounting for 79.4% (239 households), while 15.3% (46 households) were headed by females. Additionally, 5.3% (16 households) did not provide a response regarding the gender of the household head.

#### **4.2.7 Age of household head**

This section details the age distribution of household heads. The data in Table 4.8 shows that 4.0% (12 households) had heads aged 18-25 years, 20.9% (63 households) had heads aged 26-33 years, 25.9% (78 households) had heads aged 34-41 years, 27.2% (82 households) had heads aged 42-49 years, and 21.9% (66 households) had heads aged above 50 years.

**Table 4. 8:**

*Age of Household Head*

<b>Age range</b>	<b>N</b>	<b>%</b>
18-25	12	4.0%
26 -33	63	20.9%
34-41	78	25.9%
42-49	82	27.2%
Above 50	66	21.9%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

**4.2.8 Education level of household head**

This section describes the educational attainment of household heads. The results are shown in Table 4.9.

**Table 4. 9:**

*Educational level of household head*

<b>Education level</b>	<b>N</b>	<b>%</b>
Adult education	39	13.0%
Primary	114	37.9%
Secondary	36	12.0%
Tertiary	112	37.2%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

The majority had primary education (37.9%, 114 households), followed by tertiary education (37.2%, 112 households), adult education (13.0%, 39 households), and secondary education (12.0%, 36 households).

#### 4.2.9 Major occupation of household head

This section highlights the primary occupations of household heads. The results are shown in Table 4.10.

**Table 4. 10:**

*Major Occupation of Household Head*

<b>Occupation</b>	<b>N</b>	<b>%</b>
Employed (public/ private sector)	67	22.3%
Farming	195	64.8%
Self-employed (business)	39	13.0%
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

The majority were engaged in farming (64.8%, 195 households), followed by employment in the public or private sector (22.3%, 67 households), and self-employment (13.0%, 39 households).

#### 4.3 Gender and Sanitation

The first objective of the study was to examine how management and knowledge of sanitation is gendered. Understanding the gender dynamics in the management and knowledge of sanitation practices is critical for the development of effective and inclusive sanitation policies. This section aims to explore how sanitation knowledge and practices are influenced by gender and how this affects the implementation and management of sanitation projects. The findings are based on a comprehensive survey conducted within various communities, focusing on respondents' knowledge, training, involvement, and decision-making in sanitation practices.

#### 4.3.1. Knowledge of sanitation practices

The study sought to gauge the level of knowledge among respondents regarding sanitation practices and how this knowledge varies between genders. The majority of respondents indicated having limited knowledge of how sanitation practices are gendered. The distribution of knowledge levels among respondents is detailed in the table below:

**Table 4. 11:**

*Level of Knowledge of Sanitation*

Level of Knowledge	Number of Respondents	
	(N)	Percentage (%)
High	48	15.9
Low	129	42.9
Moderate	88	29.2
Very Low	36	12.0
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

These results highlight a significant gap in the understanding of gendered sanitation practices, with nearly 55% of respondents reporting low to very low knowledge levels. This indicates a need for targeted educational initiatives to improve awareness and understanding of gendered aspects of sanitation.

#### 4.3.2. Formal training or education on sanitation

The study also assessed whether respondents had received any formal training or education on sanitation. The findings reveal that a significant portion of the population has not undergone formal training in this area. The responses are summarized as follows:

**Table 4. 12:***Formal Training or Education on Sanitation*

<b>Formal Training Status</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
No Response	3	1.0
No	158	52.5
Yes	140	46.5
<b>Total</b>	<b>301</b>	<b>100.0%</b>

*Source: Researcher, 2022*

With over half of the respondents indicating they have not received formal training, it underscores the need for comprehensive training programs to enhance sanitation knowledge and practices. Such programs should address both general sanitation practices and the specific roles and challenges faced by different genders.

**4.3.3. Kind of training the respondent took part in**

To further understand the nature of sanitation-related training received by respondents, the survey investigated the specific types of training they had participated in. The results are presented in the table 4.13 below:

**Table 4. 13***Type of training*

<b>Type of Training</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
No Response	100	33.2
Any Other Training	74	24.6
Training on Gender Inclusivity in Sanitation	22	7.3

<b>Type of Training</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
Training on Sanitation Management and Knowledge	76	25.2
Training on Women Empowerment and Technology	29	9.6
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

The data shows a diverse range of training experiences among respondents. However, a significant proportion (33.2%) did not indicate any specific type of training, suggesting gaps in training participation or awareness. Training on sanitation management and knowledge was the most common, followed by general training unrelated to sanitation, highlighting a potential area for increased focus on gender-specific sanitation training.

#### **4.3.4. Access to sanitation information**

The study explored whether men and women had equal access to sanitation information within their communities. The responses indicate a disparity in access, as shown in table 4.14 below:

**Table 4. 14:**

*Access to Sanitation Information*

<b>Access to Information</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
No Response	5	1.7
No	231	76.7
Yes	65	21.6

<b>Access to Information</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

A significant majority (76.7%) of respondents believe that men and women do not have equal access to sanitation information. This highlights a critical issue that needs to be addressed to ensure equitable access to sanitation information and resources for both genders.

#### **4.3.5. Involvement in sanitation matters**

The study examined the degree of agreement among respondents on whether women are more involved in sanitation matters than men. The responses are summarized below:

**Table 4. 15:**

*Involvement in Sanitation Matters*

<b>Level of Agreement</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
Agree	49	16.3
Disagree	149	49.5
Neutral	16	5.3
Strongly Agree	48	15.9
Strongly Disagree	39	13.0
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

Nearly half of the respondents (49.5%) disagreed that women are more involved in sanitation matters than men, while a smaller percentage (16.3%) agreed. This indicates a perception that men may be more involved in these matters, which could influence the implementation and management of sanitation projects.

#### 4.3.6. Gender involvement in construction of toilets

The study also investigated the involvement of different genders in the construction of toilets. The findings are presented in the table below:

**Table 4. 16:**

*Gender Involved in Construction*

<b>Gender Involved in Construction</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
Female	3	1.0
Male	298	99.0
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

The results in table 4.16 clearly show that males are predominantly involved in the construction of toilets, with 99% of respondents indicating male involvement. This significant gender disparity suggests a need for increased female participation in such construction activities.

#### 4.3.7. Decision making in toilet construction

The study examined who is primarily involved in decision-making regarding toilet construction. The responses are summarized below:

**Table 4. 17:**

*Decision Maker Gender*

<b>Decision Maker Gender</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
No Response	2	0.7
Female	31	10.3
Male	268	89.0

<b>Decision Maker Gender</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

The data in Table 4.17 shows that males are predominantly involved in decision-making related to toilet construction, with 89% of respondents confirming male involvement. This suggests that decision-making power in sanitation projects is largely male-dominated.

#### **4.3.8. Maintenance of toilets**

The study also explored the involvement of different genders in the maintenance of toilets. The findings are shown below:

**Table 4. 18:**

*Gender Involved in Maintenance*

<b>Gender Involved in Maintenance</b>	<b>Number of Respondents (N)</b>	<b>Percentage (%)</b>
No Response	2	0.7
Female	262	87.0
Male	37	12.3
<b>Total</b>	<b>301</b>	<b>100.0</b>

*Source: Researcher, 2022*

The results in Table 4.18 indicate that females are more involved in maintaining toilets, with 87% of respondents confirming female involvement. This highlights the significant role women play in the upkeep of sanitation facilities.

#### **4.3.9. Duties and responsibilities played by men and women for management and implementation of sanitation projects**

Understanding the specific roles and responsibilities of men and women in sanitation projects is essential for developing effective and inclusive sanitation policies. This section examines the duties and responsibilities played by men and women in the management and implementation of sanitation projects.

**Roles of men-** Men play a variety of roles in sanitation projects, primarily revolving around leadership, decision-making, and labour provision. Men are often responsible for making key decisions about sanitation matters, chairing and directing meetings, mobilizing funds, providing labour during construction, coordinating day-to-day project activities, organizing meetings with donors and visitors, and contributing financially to the projects. They are also key actors during elections and other critical processes within sanitation groups.

Men's roles in sanitation projects are often associated with leadership and managerial positions. They are responsible for overseeing the progress of sanitation projects, ensuring that funds are appropriately allocated, and that projects are completed on time. Men also play a crucial role in engaging with external stakeholders, such as donors and local authorities, to secure support and resources for sanitation initiatives.

One respondent explained that men were primarily responsible for decision-making on matters of concern for the sanitation group. They chaired and directed meetings, held discussions on the progress of sanitation projects, and mobilized funds for these projects. Men were also tasked with providing labour during the construction of sanitation projects and coordinating the day-to-day running of these projects. Additionally, men organized meetings with sanitation donors and visitors and contributed funds to run the

sanitation groups. They were key actors during elections, preparing for the process and ensuring the smooth functioning of the sanitation groups.

Another respondent pointed out that men were often appointed as managers of sanitation projects. They acted as committee members and were the main organizers of sanitation projects. Men were also responsible for campaigning and promoting funds drives for sanitation project construction. Those with little education offered labour during construction, such as gathering resources for the constructors and providing any other manual assistance required.

**Roles of women-** Women's roles in sanitation community projects were described as minimal compared to men. They were typically involved in supporting roles such as praying, preparing food for workers, providing labour during construction (e.g., fetching water), and ensuring the cleanliness of sanitation facilities and compounds at the household level. Women are less involved in managerial roles, largely due to their household responsibilities.

One-woman leader explained that women's roles in sanitation community projects were minimal compared to the roles played by men. She further said that women were not involved in managerial roles since the majority were so busy at home. Another interviewed woman mentioned that women were responsible for leading prayers before and after meetings. During sanitation projects, women would prepare food for workers and provide labour during construction. One woman recounted how a man in sanitation requested her to join a meeting to provide statistical numbers in project involvement since men were a majority. This helped ensure the required membership was achieved in any sanitation project.

A man interviewed explained that women ensured sanitation facilities, such as compounds and toilets, were clean at the household level. They were the primary

"experts" in sanitation. Women were also responsible for preparing family meals, fetching water, babysitting, and other household chores. He further explained that during community meetings, where various guests, including public health officers and sanitation experts, were invited, women were responsible for welcoming and entertaining the guests.

The majority of women respondents took part in hospitality for guests and project meetings, doing general cleaning, and entertaining guests. The interviewed women explained that since they were often unavailable during meetings and training, they were sometimes called to provide labour. Another woman pointed out that women acted as organizers and secretaries, taking notes and ensuring the project's success. Women provided labour during sanitation projects and took part in informal training, which was provided at the site of a sanitation project.

One respondent, who acted as a mobilizer for men during sanitation projects, indicated that women took part in practical training in sanitation projects, such as cooking for men and labour during construction. Women also led prayers at the beginning and end of sanitation project meetings.

The study highlights the need for a more balanced and inclusive approach to sanitation management, where both men and women are equally involved in all aspects of sanitation projects. This includes decision-making, leadership, labour provision, and maintenance. By addressing the gender disparities in sanitation management and knowledge, communities can develop more effective and sustainable sanitation solutions that benefit everyone.

#### **4.4 Determinants Promoting Women's Participation in Sanitation**

The second objective of the study was to determine the factors that promote women's participation in sanitation. The findings are categorized into participation rates,

determinants of participation, roles played, representation in committees, decision-making participation, and barriers to involvement.

#### 4.4.1 Participation in any sanitation-related community projects or initiatives

A majority of the respondents (63.5%, 191) confirmed that they had never participated in any sanitation-related community projects or initiatives, while 36.5% (110) had participated. This distribution is presented in Table 4.19 below.

**Table 4. 19:**

*Participation in Sanitation Activities*

<b>Participation</b>	<b>N</b>	<b>%</b>
Yes	110	36.5
No	191	63.5
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### 4.4.2 Determinants of participation in sanitation projects

The study investigated whether there are any sanitation committees or groups in the respondents' communities. A significant majority (72.4%, 218) confirmed the existence of sanitation groups, while 27.6% (83) indicated there were none, as shown in Table 4.20 below.

**Table 4. 20:**

*Existence of Sanitation Groups*

<b>Existence of Sanitation Groups</b>	<b>N</b>	<b>%</b>
No	83	27.6
Yes	218	72.4
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

The factors promoting women's participation in sanitation projects include both positive and negative aspects. Positive determinants include job creation (6.3%, 19), financial rewards (6.3%, 19), a sense of belonging (6.0%, 18), social satisfaction (4.3%, 13), improving living standards (10.3%, 31), promoting safe environments (30.9%, 93), and promoting social unity (7.3%, 22). Negative determinants include fear of consequences (3.7%, 11) and influence by leaders (8.3%, 25). These determinants are summarized in Table 4.21.

**Table 4. 21:**

*Determinants of Participation*

<b>Determinant</b>	<b>N</b>	<b>%</b>
Fear of Consequences	11	3.7
For Creation of Jobs	19	6.3
For Financial Rewards	19	6.3
Influenced by Leaders	25	8.3
To Have a Sense of Belonging	18	6.0
To Have Social Satisfaction	13	4.3
To Improve Living Standards	31	10.3
To Promote Safe Environments	93	30.9
To Promote Social Unity	22	7.3
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### **4.4.3 Roles in sanitation projects**

Respondents who participated in sanitation projects played various roles, including cleaning (26.6%, 80), committee membership (12.6%, 38), hospitality (16.9%, 51),

managerial (7.3%, 22), worker roles (20.3%, 61), and other unspecified roles (16.3%, 49).

This distribution is presented in Table 4.22.

**Table 4. 22:**

*Roles in Sanitation Projects*

<b>Role</b>	<b>N</b>	<b>%</b>
Any Other Role	49	16.3
Cleaning	80	26.6
Committee Member	38	12.6
Hospitality	51	16.9
Managerial	22	7.3
Worker	61	20.3
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

**4.4.4 Women well-represented in sanitation committees**

The majority of respondents (48.2%, 145) disagreed that women are well-represented in sanitation committees. Additionally, 10% (30) agreed, 9% (27) were neutral, 5.6% (17) strongly agreed, 9.3% (28) strongly disagreed, and 17.9% (54) did not respond, as shown in Table 4.23.

**Table 4. 23:***Women representation in sanitation committees*

<b>Opinion</b>	<b>N</b>	<b>%</b>
No Response	54	17.9
Agree	30	10.0
Disagree	145	48.2
Neutral	27	9.0
Strongly Agree	17	5.6
Strongly Disagree	28	9.3
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022***4.4.5 Participation in decision-making related to sanitation**

A significant majority of respondents (78.4%, 236) reported not participating in decision-making processes related to sanitation in their community, while 21.6% (65) confirmed their involvement. This distribution is shown in Table 4.24.

**Table 4. 24:***Participation in decision making*

<b>Participation</b>	<b>N</b>	<b>%</b>
No	236	78.4
Yes	65	21.6
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### **4.4.6 Interview insights on promoting women's participation**

Interviewed respondents identified various factors promoting women's participation in sanitation, including social satisfaction, improved living standards, environmental hygiene promotion, financial rewards, job creation, social unity, fear of consequences, and leader influence. They suggested measures to enhance participation, such as women empowerment through education, abolishing outdated cultural practices, labor division, mass awareness on sanitation projects, gender balance in decision-making, sanitation training programs, and transparency in sanitation leadership.

Interviewees recommended training in proper sanitation practices, women's inclusivity, and technological knowledge in sanitation. They emphasized the importance of abolishing practices like early marriages and FGM to empower women and improve their participation in sanitation initiatives.

#### **4.5 Main Hindrances to Women's Participation in Sanitation**

This section discusses the specific hindrances to women's participation in sanitation, outlining the barriers that limit their active involvement.

##### **4.5.1. Main hindrances to women's participation**

The study identified various challenges hindering women's participation in sanitation projects. These included busy schedules (31.9%, 96), economic limitations (14.6%, 44), social cultural barriers (14.6%, 44), low literacy levels (13%, 39), lack of transparency (6.3%, 19), demotivation by management (5.3%, 16), dissatisfaction with leadership (3%, 9), language barriers (3%, 9), age disparity (2%, 6), fear of negative effects (0.7%, 2), and other challenges (5.6%, 17). These findings are summarized in Table 4.25.

**Table 4. 25:***Hindrances to women participation*

<b>Hindrance</b>	<b>N</b>	<b>%</b>
Age Disparity	6	2.0
Any Other Challenge	17	5.6
Busy Schedules	96	31.9
Demotivation by Management	16	5.3
Dissatisfied with Leadership	9	3.0
Economic Limitations	44	14.6
Fear of Negative Effects	2	0.7
Lack of Transparency	19	6.3
Language Barrier	9	3.0
Low Literacy Level	39	13.0
Social Cultural Barriers	44	14.6
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### **4.5.2 Existence of cultural or societal factors limiting women's involvement**

A significant majority of respondents (88%, 265) confirmed the existence of cultural practices that limit women's participation in sanitation, while 11% (33) disagreed, as shown in Table 4.26.

**Table 4. 26:**

*Existence of Cultural or Societal Factors Limiting Women's Involvement*

<b>Response</b>	<b>N</b>	<b>%</b>
No	33	11.0
Yes	265	88.0
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### **4.5.3 Cultural factors limiting participation**

The cultural factors identified include fear of negative effects (49.5%, 149), age disparity (26.6%, 80), and other unspecified factors (13.6%, 41), as shown in Table 4.27.

**Table 4. 27:**

*Cultural Factors Limiting Participation*

<b>Cultural Factor</b>	<b>N</b>	<b>%</b>
Age Disparity	80	26.6
Any Other	41	13.6
Fear of Negative Effects	149	49.5
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

#### **4.5.4 Financial barriers to participation**

A majority of respondents (88.7%, 267) agreed that financial limitations prevent women from participating fully in sanitation projects, while 11.3% (34) disagreed, as shown in Table 4.28.

**Table 4. 28:**

*Financial Barriers to Participation*

<b>Response</b>	<b>N</b>	<b>%</b>
No	34	11.3
Yes	267	88.7
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

**4.5.5 Gender-based discrimination in sanitation activities**

A significant majority of respondents (78.1%, 235) agreed that there is gender discrimination in sanitation activities, while 21.9% (66) disagreed, as shown in Table 4.29.

**Table 4. 29:**

*Gender-Based Discrimination in Sanitation Activities*

<b>Response</b>	<b>N</b>	<b>%</b>
No	66	21.9
Yes	235	78.1
<b>Total</b>	<b>301</b>	<b>100</b>

*Source: Researcher, 2022*

**4.5.6 Interview insights on hindrances and solutions**

Interviews revealed challenges such as low literacy levels, lack of transparency in management, busy schedules, economic limitations, age disparity, language barriers, social cultural factors, and fear of negative effects. Respondents highlighted that women were often limited to roles like cleaning and hospitality due to these challenges. They suggested measures to empower women, including promoting girl child education,

sanitation training, labor division, gender balance in sanitation projects, and benchmarking with other successful women groups.

Interviewees also recommended training in safe sanitation practices, encouraging women's participation in sanitation training, abolishing outdated cultural practices, and empowering women to take up managerial positions. These measures would help overcome the identified barriers and enhance women's participation in sanitation initiatives.

#### 4.6 Inferential Statistics

This section explores the inferential statistics related to the study, focusing on the relationship between gender and participation levels in sanitation-related activities. The analysis uses Chi-Square tests to examine whether there is a statistically significant association between gender and the extent of participation. Table 4.30 presents the distribution of participation levels (high, low, moderate, and very low) by gender, while Table 4.31 shows the results of the Chi-Square tests, indicating the significance of the observed differences. This analysis helps in understanding the gender dynamics in sanitation participation within the community.

**Table 4. 30:**

*Participation Levels by Gender*

		<b>High</b>	<b>Low</b>	<b>Moderate</b>	<b>Very Low</b>	<b>Total</b>
Gender	Female	34	90	39	20	<b>183</b>
	Male	14	39	49	16	<b>118</b>
<b>Total</b>		<b>48</b>	<b>129</b>	<b>88</b>	<b>36</b>	<b>301</b>

*Source: Researcher, 2022*

**Table 4. 31:**

*Chi Square Test*

	<b>Value</b>	<b>Df</b>	<b>Asymptotic Significance (2-sided)</b>
Pearson Chi-Square	16.825 <sup>a</sup>	3	.001
Likelihood Ratio	16.753	3	.001
N of Valid Cases	301		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.11.

The Pearson Chi-Square test is a statistical tool used to examine whether there is a significant association between two categorical variables. In this particular analysis, the variables being investigated are gender and knowledge about sanitation.

The Pearson Chi-Square test produced a Chi-Square value of 16.825 with 3 degrees of freedom. The degrees of freedom, in this context, are determined by the number of categories in each variable minus one. Given that the degrees of freedom are 3, it suggests that the knowledge about sanitation variable has four distinct categories.

The key statistic to focus on is the p-value, also known as the Asymptotic Significance (2-sided) in this test. Here, the p-value is 0.001. This p-value represents the probability that the observed association between gender and knowledge about sanitation could have occurred by random chance if there were actually no association between these variables. In hypothesis testing, a common threshold for significance is a p-value of less than 0.05. In this case, the p-value of 0.001 is far below this threshold, which means we have strong evidence to reject the null hypothesis. The null hypothesis in a Chi-Square test assumes that there is no association between the variables. Therefore, rejecting the null hypothesis implies that there is indeed a significant association between gender and knowledge about sanitation.

The Pearson Chi-Square test results indicate a statistically significant relationship between gender and knowledge about sanitation. This significant p-value (0.001) suggests that the differences observed in the data are unlikely to have occurred by chance. Consequently, we can conclude that gender does play a significant role in determining knowledge about sanitation among the individuals surveyed.

In summary, the Pearson Chi-Square test has shown that there is a meaningful and statistically significant association between gender and knowledge about sanitation, highlighting that these two factors are related in a way that is unlikely to be due to random variation alone.

## **CHAPTER FIVE: DISCUSSION OF FINDINGS**

### **5.1 Introduction**

This chapter discusses the key findings of the study in relation to the existing literature reviewed in Chapter 2. The discussion is organized around the main themes that emerged from the research objectives and findings. It compares and contrasts the results of this study with previous research to highlight areas of agreement, disagreement, and new insights. The chapter aims to contextualize the findings within the broader body of knowledge on gender and sanitation, and to explore their implications for policy and practice.

### **5.2 Gender and Sanitation Knowledge**

This section discusses how gender influences sanitation knowledge, highlighting the relationship between gender roles and the level of awareness or practices in sanitation.

#### **5.2.1 Limited knowledge of gendered sanitation practices**

One of the key findings of this study was the limited knowledge among respondents regarding how sanitation practices are gendered. The majority of respondents (54.9%) reported low to very low knowledge levels in this area. This finding aligns with previous research highlighting the general lack of awareness about gender-specific sanitation needs and practices in many communities. A majority of the population has limited knowledge about gendered sanitation, leading to poor practices that contribute to disease and resource wastage.

For instance, Khanna & Das *et al.* (2016) noted that despite efforts by the Kenyan government to adopt gender-sensitive policies in sanitation, implementation at local levels has been slow and challenging. The findings of this study provide empirical evidence supporting the observation that a significant gap exists between policy formulation and grassroots awareness. This gap hinders the promotion of proper

sanitation practices and coverage, particularly when women are not given equal opportunities in sanitation-related efforts.

The limited knowledge about gendered sanitation practices revealed in this study also resonates with Huggett *et al.*'s (2022) observation that while national policies often aim at women's empowerment, inclusion in sanitation is frequently overlooked. This disconnect between broader gender equality goals and specific sanitation-related knowledge and practices persists at the community, national, and global levels. Addressing it requires coordinated efforts in policy implementation and resource allocation to ensure balanced representation of women, who often serve as key sanitation attendants at the grassroots level.

### **5.2.2 Lack of formal training in sanitation**

The study found that over half of the respondents (52.5%) had not received any formal training or education on sanitation. This finding is concerning when considered alongside the literature emphasizing the importance of education and capacity building in promoting gender-inclusive sanitation practices.

Nhamo *et al.* (2018) highlighted the Kenyan government's efforts in promoting gender differences in sanitation training and education. However, the current study's findings suggest that these efforts may not have reached a significant portion of the population, particularly at the grassroots level. This gap in formal training could be a contributing factor to the limited knowledge of gendered sanitation practices observed in the study.

The lack of formal training also aligns with Tantoh *et al.*'s (2020) observation from Cameroon, where women's exclusion from sanitation leadership positions resulted in uninformed decision-making. While the contexts differ, both cases highlight the critical need for targeted education and training initiatives to bridge the knowledge gap and promote more inclusive sanitation practices.

Therefore, the lack of awareness and training revealed in this study highlights a significant barrier to achieving inclusive sanitation goals. Without targeted efforts to educate communities and build local capacity particularly among women the potential for long-term improvements in sanitation coverage, health outcomes, and gender equality remains limited.

### **5.2.3 Unequal access to sanitation information**

A significant majority of respondents (76.7%) believed that men and women do not have equal access to sanitation information. This finding is particularly noteworthy when considered in light of the literature on gender disparities in water and sanitation access.

Caruso *et al.* (2015) noted that women are disproportionately affected by inadequate sanitation globally. The current study's findings suggest that this disparity extends beyond physical access to sanitation facilities and includes access to information about sanitation practices. This information gap could further exacerbate the challenges women face in managing their sanitation needs effectively.

The unequal access to information revealed in this study also relates to Crawford *et al.*'s (2020) discussion of SDG 6, which focuses on ensuring access to water and sanitation for all, prioritizing the needs of women and girls. The findings suggest that achieving this goal will require not only improving physical access to sanitation facilities but also addressing the information asymmetry between men and women.

### **5.2.4 Gender differences in sanitation roles**

The study revealed significant gender differences in various aspects of sanitation management. Men were found to be predominantly involved in decision-making (89%) and construction of toilets (99%), while women were more involved in maintenance (87%). These findings align with and provide empirical support for observations in the existing literature about gendered roles in sanitation.

For instance, the dominance of men in decision-making roles observed in this study mirrors Tanto *et al.*'s (2020) findings from Cameroon, where women were excluded from sanitation leadership positions. This pattern of male-dominated decision-making appears to be consistent across different cultural contexts, highlighting the pervasive nature of gender inequalities in sanitation management.

The high involvement of women in maintenance tasks aligns with Caruso *et al.*'s (2015) observation that women are often the primary attendants of sanitation at the household level. This division of labour, where women are responsible for the day-to-day upkeep of sanitation facilities while men make key decisions, reflects broader gender norms and power dynamics within communities.

However, the near-total exclusion of women from construction activities (only 1% involvement) revealed in this study presents a starker picture than what is generally described in the literature. This extreme gender segregation in construction roles may be specific to the study area or could indicate a more widespread issue that has been underreported in previous research.

### **5.2.5 Implications of gender disparities in sanitation roles**

The gender disparities in sanitation roles revealed by this study have significant implications for the effectiveness and sustainability of sanitation initiatives. The concentration of decision-making power in the hands of men, combined with women's limited involvement in construction but high involvement in maintenance, creates a situation where those most affected by and responsible for day-to-day sanitation management have the least say in key decisions.

This imbalance aligns with Black *et al.*'s (2021) observation that when women are given higher bargaining power in households, they tend to prioritize basic needs including health and sanitation. The current study's findings suggest that this potential for

improved outcomes through women's involvement in decision-making is not being fully realized in sanitation projects.

Furthermore, the gender disparities in roles and decision-making power observed in this study may contribute to the persistence of gender-blind sanitation policies and practices. As Htun & Jones *et al.* (2002) noted, while Kenya has partnered with international organizations to enact gender policies, implementation at local levels has been challenging. The current findings provide insight into one possible mechanism for this implementation gap: the exclusion of women from key decision-making roles in sanitation projects at the community level.

### **5.3 Women's Participation in Sanitation Projects**

This section discusses in detail the ways in which women participate in sanitation projects, highlighting the extent and nature of their involvement.

#### **5.3.1 Low overall participation rates**

The study found that a majority of respondents (63.5%) had never participated in any sanitation-related community projects or initiatives. This low participation rate is concerning when considered against the backdrop of literature emphasizing the importance of community involvement, particularly women's participation, in successful sanitation projects.

For instance, Lopes *et al.* (2021) recommended the need to promote and support women and potentially disadvantaged groups to ensure equal participation in decision-making in WASH management. The low participation rates observed in this study suggest that this recommendation has not been effectively implemented in the study area.

The finding also contrasts with the emphasis placed on community participation in sanitation initiatives by international organizations and national policies. As noted by Bellaubi & Visscher *et al.* (2014), Kenya's Vision 2030 goal on sanitation requires

significant investment and community involvement. The low participation rates observed in this study indicate a gap between policy aspirations and on-the-ground realities.

### **5.3.2 Factors promoting women's participation**

Despite the overall low participation rates, the study identified several factors that promote women's participation in sanitation projects. These include job creation (6.3%), financial rewards (6.3%), a sense of belonging (6.0%), social satisfaction (4.3%), improving living standards (10.3%), promoting safe environments (30.9%), and promoting social unity (7.3%).

The importance of these factors aligns with Anderson *et al.*'s (2021) definition of women's empowerment as a process of transforming power and leadership relations in favour of women's rights and social justice. The factors identified in this study represent both practical and strategic interests that can motivate women's participation and contribute to their empowerment.

The finding that promoting safe environments was the most significant factor (30.9%) resonates with the literature on the health impacts of poor sanitation. For instance, Hossain & Sohel *et al.* (2020) discussed the various adverse health effects of inadequate sanitation systems. The current study suggests that women are highly motivated by the potential to create safer, healthier environments through participation in sanitation projects.

### **5.3.3 Roles played by women in sanitation projects**

The study found that women who participated in sanitation projects primarily played roles in cleaning (26.6%), hospitality (16.9%), and as workers (20.3%), with fewer women in managerial roles (7.3%) or committee membership (12.6%). This distribution of roles reflects and provides empirical support for observations in the literature about the gendered division of labour in sanitation projects.

The concentration of women in cleaning and hospitality roles aligns with Caruso *et al.*'s (2015) observation that women are often the primary attendants of sanitation at the household level. However, the low representation of women in managerial roles contrasts with recommendations in the literature for increased women's leadership in sanitation initiatives.

For instance, Bishoge (2021) noted efforts in Africa to increase the number of women serving in leadership positions as Ministers for water and environment. The current study's findings suggest that while progress may be occurring at higher levels of government, women's leadership in community-level sanitation projects remains limited.

#### **5.3.4 Underrepresentation in sanitation committees**

A majority of respondents (48.2%) disagreed that women are well-represented in sanitation committees. This perception of underrepresentation aligns with observations in the literature about the lack of women's voices in decision-making processes related to sanitation.

For example, Gordon (2020) observed that women's leadership is not much felt at the grassroots level in water and sanitation management. The current study provides empirical evidence supporting this observation, suggesting that the underrepresentation of women in sanitation committees is a recognized issue within communities.

This underrepresentation is particularly concerning when considered alongside Kennedy *et al.*'s (2020) finding that marriage is a significant driver for men to prioritize and invest in household sanitation facilities. The lack of women's voices in sanitation committees may result in decisions that do not fully account for women's needs and perspectives, despite women being primary users and maintainers of sanitation facilities.

### **5.3.5 Limited participation in decision-making**

The study found that a significant majority of respondents (78.4%) reported not participating in decision-making processes related to sanitation in their community. This finding aligns with and provides quantitative support for observations in the literature about women's limited involvement in sanitation decision-making.

For instance, Rasoulkhani *et al.* (2018) noted that men and women have varying differences in influencing the adoption of toilet systems. The current study's findings suggest that these differences may be due, in part, to women's overall exclusion from decision-making processes rather than just differing priorities or perspectives.

The low participation in decision-making revealed in this study also relates to Usman *et al.*'s (2021) observation that women and girls can do better in education and income generation if provided with safe drinking water and improved sanitation. The current findings suggest that the potential for improved outcomes through women's involvement is not being fully realized due to their limited participation in key decisions about sanitation projects.

## **5.4 Barriers to Women's Participation in Sanitation**

### **5.4.1 Multiple barriers to participation**

The study identified several key barriers hindering women's participation in sanitation projects. These include busy schedules (31.9%), economic limitations (14.6%), social cultural barriers (14.6%), low literacy levels (13%), lack of transparency (6.3%), and demotivation by management (5.3%), among others.

These findings align with and provide empirical support for observations in the literature about the challenges women face in participating fully in sanitation initiatives. For instance, the prominence of busy schedules as a barrier (31.9%) resonates with Tandrayen and Ragoobur *et al.*'s (2021) observation that women face multiple

constraints related to the social expectation that they carry out the largest share of unpaid care work and chores in their households.

The economic limitations identified in this study (14.6%) align with Saint and Germain *et al.*'s (2021) discussion of the need for economic empowerment and inclusion to strengthen poor women's ability to participate in and benefit from growth processes. The current findings suggest that economic barriers remain a significant obstacle to women's participation in sanitation projects.

#### **5.4.2 Cultural and societal factors**

A significant majority of respondents (88%) confirmed the existence of cultural practices that limit women's participation in sanitation. This finding provides strong empirical support for observations in the literature about the role of cultural norms in shaping women's involvement in sanitation.

For example, Brontë (2018) noted that in several cultures, girls and women can hardly go out to relieve themselves after nightfall or before dawn, posing risks to their safety, education, and health. The current study suggests that such cultural constraints extend beyond personal sanitation practices to limit women's participation in broader sanitation initiatives.

The identification of fear of negative effects (49.5%) and age disparity (26.6%) as specific cultural factors limiting participation aligns with Iverson *et al.*'s (2018) emphasis on the importance of creating awareness to understand gender inequalities and their impact on decision-making in various sectors, including sanitation.

#### **5.4.3 Financial barriers**

The study found that a majority of respondents (88.7%) agreed that financial limitations prevent women from participating fully in sanitation projects. This finding provides

strong empirical support for observations in the literature about the economic challenges women face in accessing and participating in sanitation initiatives.

For instance, Kay (2006) noted that lack of land ownership rights is an underlying reason for limited access to water and sanitation for many women, particularly in women-headed households. While the current study did not specifically examine land ownership, the strong agreement about financial barriers suggests that economic constraints remain a significant obstacle to women's participation in sanitation projects.

This finding also relates to Gaddis *et al.*'s (2018) observation that very few women hold title deeds, which limits their ability to fully engage in sanitation. The current study suggests that financial limitations may be both a cause and consequence of women's limited control over resources, creating a cycle that hinders their participation in sanitation initiatives.

#### **5.4.4 Gender-based discrimination**

A significant majority of respondents (78.1%) agreed that there is gender discrimination in sanitation activities. This finding aligns with and provides quantitative support for observations in the literature about persistent gender inequalities in the sanitation sector.

For example, Achiume (2019) noted that even in areas where women have legal rights to own land, cultural beliefs and customs often limit their control over land and natural resources. The current study suggests that similar discriminatory practices extend to sanitation activities, limiting women's involvement and influence.

This finding also relates to Venugopalan *et al.*'s (2021) observation that increasing women's involvement in economic activities may not reduce gender-based subordination unless accompanied by changes in men's and women's self-conceptions and roles. The high perception of gender discrimination in sanitation activities revealed in this study

suggests that such fundamental changes in gender roles and perceptions have not yet occurred in the context of sanitation projects.

## **CHAPTER SIX: CONCLUSION, RECOMMENDATIONS AND PUBLICATION**

### **6.1 Introduction**

This chapter synthesizes the key findings, conclusions, and recommendations derived from a comprehensive study on gender and sanitation in South Imenti, Kenya. The investigation aimed to understand the gendered nature of sanitation knowledge, analyze women's participation in sanitation development and management, and identify the challenges impeding their involvement. This study's insights provide a foundation for proposing actionable strategies to enhance gender equality in sanitation projects and broader community development initiatives.

### **6.2 Summary of Findings**

This section synthesizes all the key results of a study in a clear and detailed manner, providing the reader with an overview of the major outcomes in relation to the research objectives.

#### **6.2.1 Gendered roles and cultural beliefs**

The study reveals that traditional practices and cultural beliefs within the Ameru community significantly shape gender roles, influencing the division of labor and responsibilities. Women are primarily relegated to domestic duties, while men are typically seen in leadership positions, including those related to sanitation. This gendered division is deeply ingrained, limiting women's opportunities to participate meaningfully in decision-making processes.

The exclusion of women from decision-making processes sustains a self-perpetuating cycle of marginalization, wherein their specific needs and perspectives remain insufficiently addressed. This lack of inclusion results in policies and interventions that inadequately reflect the lived experiences of half the population, thereby reinforcing systemic gender inequalities. To disrupt this cycle, it is imperative that institutional

frameworks prioritize women's participation at all levels of governance and policy development. Ensuring meaningful representation not only promotes equity but also enhances the relevance, effectiveness, and sustainability of outcomes, ultimately contributing to the reduction of entrenched gender disparities.

### **6.2.2 Low participation in leadership**

Women's participation in leadership roles within sanitation projects is markedly low. Despite their critical contributions to maintaining household sanitation, women are often overlooked for leadership positions in sanitation groups and broader community projects. The persistent underrepresentation of women in sanitation governance is rooted in deeply embedded societal norms that undervalue women's leadership potential and perpetuate male-dominated institutional structures.

This structural exclusion results in the systematic omission of women's perspectives and lived experiences in the design, planning, and implementation of sanitation initiatives, thereby producing outcomes that fail to holistically meet community needs. To address this gap, it is recommended that sanitation policies and programs incorporate mechanisms that guarantee women's active and meaningful participation at every stage of the process. Such mechanisms may include targeted leadership training for women, gender-sensitive recruitment and promotion policies, quotas or minimum representation thresholds in decision-making bodies, and the integration of gender analysis into program design and evaluation. By institutionalizing women's inclusion, sanitation initiatives are more likely to achieve effectiveness, equity, and sustainability, while simultaneously challenging entrenched gender hierarchies.

### **6.2.3 Financial challenges**

Financial constraints pose a significant barrier to women's active participation in sanitation projects. Many women face economic challenges that prevent them from

joining sanitation groups or contributing financially to project activities. Membership fees and other financial requirements can be prohibitive, discouraging women from participating. Moreover, even when women do participate, the available financial resources are often insufficient to support comprehensive sanitation initiatives. The financial constraints faced by sanitation projects significantly restrict their scope and effectiveness, with disproportionate consequences for women, whose contributions are often undervalued or overlooked in resource allocation.

This dynamic not only undermines the inclusivity and sustainability of sanitation initiatives but also reinforces gender-based marginalization. To address this challenge, it is recommended that funding frameworks for sanitation projects explicitly integrate gender-responsive budgeting. Such an approach would ensure that financial resources are allocated in ways that recognize and support women's roles, priorities, and innovations in sanitation management. In addition, partnerships with governmental agencies, international donors, and community-based organizations should prioritize resource mobilization strategies that enhance women's participation in both the design and implementation of sanitation projects. Establishing transparent monitoring and accountability mechanisms for financial allocations will further safeguard against inequities, ensuring that investments in sanitation infrastructure and services contribute to both improved public health outcomes and the advancement of gender equity.

#### **6.2.4 Social and cultural barriers**

Social norms and cultural taboos perpetuate gender discrimination, limiting women's involvement in community and sanitation projects. These cultural frameworks foster beliefs that women are subordinate to men, reinforcing their exclusion from leadership and management roles. The societal expectation that confines women primarily to domestic and caregiving roles creates structural barriers that limit their engagement in

public and community life, including participation in sanitation projects and broader development initiatives.

This exclusion not only undermines women's empowerment but also impedes holistic community progress, as valuable perspectives and skills remain untapped. To address these barriers, it is recommended that development frameworks integrate gender-transformative strategies aimed at challenging restrictive social norms. Such strategies may include community awareness campaigns that promote the equitable distribution of domestic responsibilities, educational programs that highlight the importance of women's leadership in public life, and the engagement of men and boys as allies in dismantling gender stereotypes. Additionally, institutional measures such as flexible participation arrangements, provision of childcare services during community meetings, and incentives for women's involvement in local governance and project management should be implemented. By reducing the caregiving burden and normalizing women's public participation, sanitation initiatives and other development projects will not only become more inclusive but also more effective in driving sustainable and equitable community outcomes.

#### **6.2.5 Lack of awareness and education**

A critical finding is the lack of awareness and education among women regarding their potential roles in community development and sanitation projects. Many women are unaware of how traditional gender roles can be transformed to enable their full participation in community work. This lack of awareness perpetuates gender disparities, as women do not have the information or confidence to challenge existing norms and advocate for their involvement. Educational and awareness-raising initiatives are essential tools for empowering women and advancing gender equality within community development processes. Limited access to education and persistent gender stereotypes

often prevent women from fully engaging in leadership roles and decision-making spaces. To overcome these barriers, it is recommended that governments, development agencies, and community organizations invest in targeted capacity-building programs that enhance women's knowledge, skills, and confidence in areas such as leadership, financial management, and project planning. Parallel to this, community-wide awareness campaigns should be implemented to challenge discriminatory norms, promote the value of women's contributions, and foster an environment supportive of gender equality. These campaigns may include school-based gender-sensitivity curricula, media outreach programs, and participatory community dialogues that engage both men and women in rethinking traditional gender roles. Furthermore, integrating gender equality modules into existing development training programs ensures that women's empowerment is mainstreamed across sectors rather than treated as an isolated initiative. By strengthening women's capacities while simultaneously transforming societal attitudes, educational and awareness-raising efforts can create enabling conditions for women's meaningful participation in community development, thereby contributing to more inclusive, effective, and sustainable outcomes.

#### **6.2.6 Decision-making exclusion**

Decisions related to sanitation projects often exclude women's perspectives, resulting in gender-insensitive outcomes. The assumption that men's perspectives are sufficient for community planning and development leads to decisions that do not consider the specific needs and experiences of women. This exclusion not only marginalizes women but also undermines the effectiveness of sanitation projects, as critical insights from half of the population are missing. Inclusive decision-making processes are critical to ensuring that sanitation projects are responsive to the diverse needs of all community members. When decision-making is dominated by a narrow group, particularly in contexts where women

and marginalized groups are excluded, the resulting interventions risk overlooking key social, cultural, and practical considerations that determine project effectiveness. To address this gap, it is recommended that sanitation initiatives institutionalize participatory governance structures that guarantee equitable representation of women, youth, and other underrepresented groups at every stage of planning, implementation, and evaluation. Practical measures may include the establishment of gender-balanced community committees, the use of participatory rural appraisal (PRA) techniques to capture diverse perspectives, and the implementation of mandatory consultation processes prior to project approval. Additionally, capacity-building programs should be provided to equip marginalized groups with the skills and confidence needed to engage meaningfully in decision-making forums. Embedding accountability mechanisms—such as transparent reporting systems and community feedback channels—will further strengthen inclusivity by ensuring that all voices are not only heard but also acted upon. By prioritizing inclusive decision-making, sanitation projects will be better positioned to achieve equitable, sustainable, and community-owned outcomes.

### **6.3 Conclusion**

The study on gender and sanitation in South Imenti, Kenya, reveals critical insights into the complex interplay between traditional cultural practices, financial constraints, and the lack of awareness that perpetuate gender disparities in community sanitation projects. The findings highlight that women, despite being central to maintaining household sanitation, face significant barriers to participating in leadership and decision-making roles within broader sanitation initiatives.

The entrenched traditional practices and cultural beliefs within the Ameru community significantly influence gender roles, relegating women to domestic duties and excluding them from leadership positions. This exclusion is not only a reflection of societal norms

that undervalue women's contributions but also a systemic issue that undermines the effectiveness of sanitation projects. Without the inclusion of women's perspectives, sanitation initiatives often fail to address the specific needs of the entire community.

Financial challenges further exacerbate these disparities. Many women are unable to meet the financial requirements to join and participate in sanitation groups due to economic constraints. This financial barrier limits their involvement and the overall resource pool available for sanitation projects, resulting in initiatives that are underfunded and less effective. Additionally, social and cultural barriers, such as taboos and gender discrimination, restrict women's participation in public and community life, reinforcing their marginalization.

The lack of awareness and education among women regarding their potential roles in community development is another significant finding. Many women do not recognize their capacity to transform traditional gender roles and engage actively in sanitation projects. This lack of awareness perpetuates existing gender disparities and prevents women from advocating for their rights and needs.

Moreover, the exclusion of women from decision-making processes in sanitation projects leads to gender-insensitive outcomes. Decisions are often made based on the assumption that men's perspectives are sufficient, resulting in initiatives that do not fully address or cater to the needs of women. Inclusive decision-making processes are essential to ensure that sanitation projects are effective and equitable, benefiting all members of the community.

#### **6.4 Recommendations**

Based on the study's findings, the following recommendations are proposed to address the identified challenges and promote greater gender equality in sanitation projects:

#### **6.4.1 Capacity building and gender training**

Implement comprehensive gender training programs for both men and women to promote awareness and understanding of gender equality in sanitation. These programs should include practical skills and theoretical knowledge to encourage women's participation in leadership and managerial roles. Training should also focus on challenging traditional gender norms and promoting the benefits of gender equality for community development. By equipping both men and women with the tools to advocate for gender equality, these programs can foster more inclusive and effective sanitation projects.

when individuals especially women and girls are equipped with the knowledge, skills, and resources to engage in sanitation planning and management, the outcomes are more sustainable, equitable, and health-promoting.

Education not only raises awareness about proper hygiene and sanitation but also helps to dismantle deeply rooted gender norms that often exclude women from decision-making processes in the water, sanitation, and hygiene (WASH) sector. Capacity building, through training programs, community engagement, and leadership development, empowers women to take active roles in sanitation governance, leading to solutions that are more responsive to the needs of all genders.

#### **6.4.2 Financial support mechanisms**

Develop financial support mechanisms to assist women in meeting the financial requirements of joining and participating in sanitation groups. This could include subsidies, micro-loans, or community funding initiatives designed to alleviate the economic barriers that prevent women from engaging in sanitation projects. Financial support can empower women to contribute more actively to project activities and ensure that sanitation initiatives have the resources needed to be effective. By addressing the

financial challenges that women face, these mechanisms can promote greater participation and inclusion.

#### **6.4.3 Promotion of women's education**

Enhance the education and training opportunities for women and girls, focusing on equipping them with the necessary skills and knowledge to participate actively in sanitation projects and other community development initiatives. Educational programs should emphasize the importance of women's contributions to community well-being and provide the tools needed for effective participation. By improving access to education and training, these programs can empower women to take on leadership roles and advocate for their needs and rights within the community.

#### **6.4.4 Inclusive decision-making**

Ensure that women are included in all decision-making processes related to sanitation projects. This can be achieved by setting quotas for female participation in leadership roles and creating platforms for women to voice their opinions and ideas. Inclusive decision-making processes can lead to more gender-sensitive outcomes and ensure that sanitation projects address the needs of all community members. By valuing women's perspectives and incorporating their insights, communities can develop more effective and equitable sanitation initiatives.

#### **6.4.5 Community sensitization**

Conduct community sensitization programs to challenge and change traditional beliefs and practices that perpetuate gender discrimination. These programs should highlight the importance of gender equality and the benefits of including women in all aspects of community development. Sensitization efforts can help shift cultural norms and create an environment that supports women's participation in sanitation projects. Promoting gender equality at the community level is integral to achieving inclusive and sustainable

development outcomes. Programs that actively address gender disparities not only enhance women's participation in decision-making but also strengthen the overall effectiveness and equity of development initiatives. It is therefore recommended that community development programs adopt gender-mainstreaming approaches that integrate equality principles across all stages of project design, implementation, and evaluation. This can be achieved through strategies such as gender-responsive budgeting, leadership training for women, and the establishment of community platforms that ensure equal representation in governance structures. Furthermore, awareness-raising campaigns should be implemented to challenge discriminatory norms and to highlight the social and economic benefits of gender equality for entire communities. Monitoring and evaluation systems must also include gender-sensitive indicators to track progress and ensure accountability. By embedding gender equality within the institutional fabric of community programs, development outcomes will be more inclusive, sustainable, and reflective of the diverse needs of all community members.

#### **6.4.6 Transparency and accountability**

Enhance transparency and accountability in the management of sanitation projects by regularly reporting on the allocation and use of resources. This will build trust among community members and encourage more women to participate in sanitation activities. Transparent and accountable management practices can ensure that resources are used effectively and that all community members have confidence in the project outcomes. By fostering a culture of transparency and accountability, communities can create an environment that supports inclusive and equitable development.

By implementing these recommendations, it is anticipated that there will be a significant improvement in women's participation in sanitation projects, leading to more equitable and sustainable community development in South Imenti. Addressing the root causes of

gender disparities and promoting inclusive practices can create a more supportive environment for women, enabling them to contribute fully to the well-being and development of their communities. This holistic approach can drive progress towards gender equality and enhance the overall effectiveness of sanitation and community development initiatives.

### **6.5 Publication**

Hydah Kinanu, Eunice Marete, Leunita Sumba. "Evaluating challenges hindering women's participation in sanitation in low-income rural areas of Igoji East, Abogeta East and Mitunguu wards in South Imenti Sub-County in Meru County, Kenya.", *ijcspub - International Journal of Current Science* (www.IJCSPUB.org), ISSN:2250-1770, Vol.14, Issue 4, page no.275-287, October-2024, Available :<https://rjpn.org/IJCSPUB/papers/IJCSP24D1030.pdf>

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## APPENDICES

### Appendix A: Information consent form

My name is Hydah Kinanu, a student from Meru University of Science and Technology, researching on the topic “Assessing Women’s participation in Sanitation in low-income rural areas: a case study of South Imenti Sub- County, Meru County”. The study is being undertaken in collaboration with various stakeholders in sanitation. The findings of this study will inform policy recommendations on gender to enable sustainable participation of women in sanitation. You have been selected to participate in the survey to give information on women participation in sanitation and it’s voluntarily. The interview will take about 60 minutes. This questionnaire is for research purpose only. Please answer all the questions in the questionnaire as honestly as possible and to the best of your knowledge. Do not write your name on this questionnaire. May I ask for your permission to proceed?

Yes/No: (1=Yes, 0=No)

Date of interview: .....

Start time: .....

End time: .....

## **Appendix B: Questionnaire for households**

### **SECTION A: General characteristics of the respondents**

*(enumerator to emphasize interviewing the Respondents. Only consider another respondent if the household head is not available. The selected person should have some authority and knowledge of sanitation for the selected household).*

- 1) Gender of respondent:
  - (a). Woman
  - (b) Man
- 2) Age of respondent .....
- 3) Relationship of respondent to household head *(if the person being interviewed is not the head)*:
  - a) Husband
  - b) Wife
  - c) Son
  - d) Daughter
  - e) Manager/Worker
  - f) Other (Specify \_\_\_\_\_)
- 4). Household type:
  - a) Man headed, one wife;
  - b) Man headed, more than one wife;
  - c) Woman headed, widowed;
  - d) others (Specify) \_\_\_\_\_

### **SECTION C: Household Demographics and Characteristics**

*5- 8 can be skipped if the respondent is the household head)*

- 5) Are you the Household Head?
- a) yes
  - b) No
- 6) Gender of the household head
- a) Woman
  - b) Man
- 7) Age of household head [\_\_\_\_\_] years
- 8) Educational level of the household head:
- a) No education
  - b) Primary
  - c) Secondary
  - d) Tertiary
  - e) Adult education
- 9) Major occupation of the household head:
- a) Farming
  - b) Employed (public/ private sector)
  - c) Self-employed (business)
  - d) Any other Occupation

#### **SECTION D: Knowledge and Management of Sanitation**

Objective 1. To examine how management and knowledge of sanitation are gendered.

- 10) How would you rate your knowledge of sanitation practices?  
(Scale)
- a) Very Low,
  - b) Low,
  - c) Moderate,
  - d) High, Very High
- 11) Have you received any formal training or education on sanitation?
- a) Yes
  - b) No
- 12) If yes, please describe the kind of training you took part in

13) Do you think men and women in your community have equal access to information about sanitation?

- a) Yes
- b) No

14) In your opinion, are certain sanitation tasks traditionally associated with men or women in your community?

**Objective**

**2. To determine women's participation in sanitation development and governance.**

14) Are you involved in any sanitation-related community projects or initiatives?

- a) Yes
- b) No

15) If yes,

- a) what encourages you to participate in sanitation?
- b) please describe your role and responsibilities in these projects?

16. If No, what limits you from taking part in sanitation?

17) Are there any sanitation committees or groups in your community?

- a) Yes
- b) No

18) If yes, are women well-represented in these committees?

- a) Yes
- b) No

19) Have you ever participated in decision-making related to sanitation in your community?

- a) Yes
- b) No

**Objective.**

**3. To evaluate challenges hindering women's participation in sanitation.**

20) What are the main challenges you face in participating in sanitation activities or projects?

21) Do you believe there are cultural or societal factors that limit women's involvement in sanitation?

- a) Yes
- b) No

22) If yes, kindly explain.

23) Are there any financial barriers preventing women from participating in sanitation initiatives?

- a) Yes
- b) No

24) Have you encountered any gender-based discrimination or biases in sanitation-related activities?

- a) Yes
- b) No

25) What do you think could be done to improve women's participation in sanitation?

**END**

THANK YOU FOR YOUR COOPERATION

## **Appendix C: Interview schedule for sanitation and support officers**

### **Part A: Demographic details**

This instrument seeks the views of relevant stakeholders in the Sanitation sector on women's participation in sanitation in Igoji East, Abogeta East, and Mitunguu in South Imenti Sub - county in Meru County.

1. Name.....
2. Gender.....
3. Title.....
4. Institution.....
5. Contact.....
6. Date of the Interview.....

### **Part B: Women's Participation in Sanitation**

1. In your opinion,
  - a) How is sanitation Knowledge gendered in your community?
  - b) How is sanitation management Gendered in your community?
2. Do you think men and women in your community have equal access to information about sanitation?
3. Comment on the roles of women in the implementation of sanitation projects
4. Who are the key decision-makers in sanitation management?
5. In your own opinion what do you think determines women's participation in sanitation?
6. What are some of measures to be taken to ensure women participate in sanitation?
7. Can you recommend any kind of training to ensure women participates equally with men in sanitation?

8. What challenges do you think women face in their participation in sanitation?
9. Are women given chances to take part in sanitation?
10. What contributes to those challenges women face when participating in sanitation groups
11. How can those challenges be dealt with to ensure gender balance in sanitation?
12. Could you recommend remedies to curb the trend of women's low level of participation in community projects?

**END**

I sincerely thank you for your commitment and willingness to participate.

## Appendix D: MIRERC Ethical Clearance



MERU UNIVERSITY INSTITUTIONAL RESEARCH & ETHICS REVIEW COMMITTEE  
(MIRERC)

TO: Hydah Kinanu  
FROM: Chairman MIRERC  
REF: MU/1/39/28 Vol.2 (68)  
SUBJECT: MIRERC clearance and approval of Research  
DATE: 11<sup>th</sup> April, 2022

I hereby forward Ethical clearance and approval of your research proposal titled "*Assessing Women Participation in Sanitation Value Chain in Low-Income Rural Areas: Case Study of South Imenti, Meru County*" for implementation: Note that the implementation of the project should strictly adhere to and follow expected attributes of Justice, Respect, Beneficence and Non-maleficence to the study subjects.

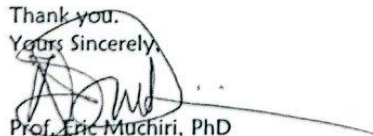
The committee expects to be informed on the progress of the project from time to time and any amendments that may be instituted or incorporated into the proposal during its implementation to be pointed out.

The committee also expects this research project implementer(s) will not at any time risk the study subjects/data in terms of unfair disclosure of information that may come to their knowledge by way of this project or subject the study subjects/data to any bias or consequences whatsoever if or not a study subject withdraws from the project or access to data is denied.

The committee and study subjects will expect to be considered favorably for any benefits that arise from this study. The university would be grateful to act as repository for the data that your project will generate.

The MIRERC committee therefore accords the clearance and approval for this project to be implemented by the investigator(s) during the period specified by the project.

Thank you.  
Yours Sincerely,

  
Prof. Eric Muchiri, PhD  
Chair, MIRERC



M.U.S.T IS ISO 9001:2015 CERTIFIED  
Foundation of Innovations



**EVALUATING CHALLENGES HINDERING  
WOMEN'S PARTICIPATION IN SANITATION  
IN LOW-INCOME RURAL AREAS OF IGOJI  
EAST, ABOGETA EAST AND MITUNGUU  
WARDS IN SOUTH IMENTI SUB -COUNTY IN  
MERU COUNTY, KENYA.**

Hydah Kinanu<sup>1\*</sup>; Eunice Marete<sup>1</sup>; Leunita Sumba<sup>2</sup>

<sup>1</sup>Meru University of science and Technology

<sup>2</sup>Women in water and Sanitation.

**Abstract**

**Introduction:** Public participation is extensively acknowledged as predominantly indispensable to the success of sanitation and water projects in rural areas in developing countries. Women are the foremost users of water in rural areas and have numerous ideas for enhancing water and sanitation management. Women's participation in sanitation in South Imenti is lagging due to various challenges that hinder them from fully participating in sanitation. The challenges hindering women's participation were grouped into social,

cultural, economic and those resulting from responsibilities. On responsibilities, the majority of women are faced with tight schedules and house chores, on addressing economic constraints, lack of registration fees, and mismanagement of project finances among others were the challenges, and social and cultural factors were age disparity, fear of negative perceptions, and traditional beliefs, norms and conduct. This results to minimal participation of women in sanitation. The study recommended promoting girls and women education to empower them to take on leadership and managerial positions, discouraging outdated cultural practices,

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implementing the 2/3 gender rule in sanitation, and encouraging women empowerment through training in sanitation technologies. Both men and women should be included in community sanitation projects to achieve the sector goals and meet sanitation targets. The study aimed to evaluate challenges hindering women's participation in sanitation in low-income rural areas, Igoji East, Abogeta East, and Mitunguu wards in South Imenti, sub-county in Meru County, Kenya.

**Methods:** Qualitative and quantitative research methods were used. In-depth interviews and questionnaires were used to conduct the study. Purposive sampling was used to select three wards in South Imenti sub-county and a sample size of 384 was determined using Yamane's formula. Data was collected from December 2021 to March 2022. 301 respondents aged 18 years and above took part in the study. The data was uploaded into a statistical package for Social Sciences (SPSS) version 22 software and inferential statistics was used for analysis.

**Results:** Majority of the respondents recounted that tight schedule 31.9%(96), other house chores 5.6%(17),

dissatisfaction with leadership 3%(9), Economic limitations 14.6%(44), demotivated by management of the project 5.3%(16) fear of negative perception 0.7%(2), age disparity 2 % (6), traditional beliefs, norms and conduct 14.6%(44) language barrier 3%(9) low literacy level 13%(39).

**Conclusion:** Many women in South Imenti Sub-County faced several challenges that impeded their participation in sanitation projects. These challenges included demanding schedules, household responsibilities, dissatisfaction with leadership, financial constraints due to the lack of registration fees, discouragement from project management, fear of negative perceptions, age disparities, traditional beliefs and norms, language barriers, and low literacy levels. These challenges had a significant impact on women, preventing them from actively participating in sanitation projects.

**Recommendation:** For women's participation in sanitation, various measures should be put in place to empower and encourage women in all capacities to take part. Doing away with regressive cultural beliefs, Women's and girls' education promotion, assurance and transparency in the sanitation group and division of labour at the household level among other factors to promote women's participation.

**Keywords:** Women Empowerment, sanitation project, traditional belief, promotion of women participation, leadership transparency, regressive cultural practices, promotion of women's education.

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# Appendix F: Plagiarism Report

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## Sources included in the report

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