INTERNATIONAL JOURNAL OF LATEST TECHNOLOGY IN ENGINEERING, MANAGEMENT & APPLIED SCIENCE (IJLTEMAS)

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

An Exploration of The Socio-Economic State of Household Sanitation Project Beneficiaries in George Compound.

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DOI: https://doi.org/10.51583/IJLTEMAS.2025.1410000143

Received: 02 November 2025; Accepted: 10 November 2025; Published: 22 November 2025

Abstract: The study explored the perceived solutions to the sanitation challenges in George Compound in Lusaka, Zambia. The study objective was to assess the socio-economic situation of the beneficiaries of Household Sanitation Project in George Compound. The researcher adopted the social constructivist ontology, knowledge was co-constructed with participants through an interpretive phenomenological approach, and reflexive thematic analysis. The sample was selected purposively and determined using data saturation, ensuring rich, contextual insights from relevant stakeholders. The study revealed that poor sanitation affects men and women differently and it was further observed that women are more affected due to their biological nature, which limit their ability to use public spaces for relief, unlike men who can use open areas. The construction of toilets under the project helped address gender-specific concerns related to sanitation. Moreover, most study participants noted that in the past, cultural norms discriminated against women and favoured men. Similarly, the researcher disclosed that most study participants revealed that toilets constructed by LWSC significantly reduced the disease burden for both men and women. Furthermore, the study revealed that the company offered flexible payment options, making it easier for beneficiaries to access sanitation products. Theoretically, it corroborates systems theory by illustrating the interrelated roles of stakeholders in sustainable sanitation. For policy, the study emphasizes integrated, multi-stakeholder interventions informed by practical experiences. Practically, it highlights the need for community sensitization and engagement to ensure sustainability of sanitation innovations. Knowledge-wise, the study provides contextual evidence specific to George Compound, documenting challenges, innovations, and operational insights that can inform similar peri-urban settings. In conclusion, addressing sanitation challenges in peri-urban Lusaka requires a holistic, systems-oriented approach that integrates infrastructure, regulation, education, cultural socialization, and community participation to ensure equitable, sustainable, and effective on-site sanitation services.

Keywords: On-Site Sanitation, Gender Inclusion, Pit Emptying Services.

I. Introduction

This section presents the introduction, background of study, methodology, findings, discussions, and references. The study was guided by the objective which sought to assess the socio-economic situation of the beneficiaries of Household Sanitation Project in George Compound.

II. Background of The Study

Globally, Water and sanitation services are critical to protecting public health. They are also recognized human rights under international law (UNGA, 2010). Ensuring effective delivery of these services is one of the most basic responsibilities of any government leading to social and economic benefits to the population of their countries. However, as the international monitoring data shows, the world has a long way to go to ensure everyone gets access to safe services.(Howard, 2021). Despite governments' commitment to the United Nations Sustainable Development Goals (SDGs) and the African Union's Agenda 2063, most countries are not on track to meet their objective of ensuring the availability and sustainable management of water and sanitation for all.(United Nations, 2015).Sanitation is a pressing health problem that adversely impacts billions of people around the world. In 2015, over 2.3 billion people all over the world still lacked basic sanitation service, 844 million people still lacked basic drinking water while only two out of five people using safely managed sanitation services (Kivunja & Kuyini, 2017). According to the World Health Organization (WHO), the population of those who do not have basic sanitation facilities such as toilets or latrines is around two billion. Sustainable Development goal 6 (SDG6) is to ensure the availability and sustainable management of safe water and sanitation for all by 2030. The water and sanitation goals are defined by 8 targets that specify the goals, and the progress towards the 2030 Agenda for sustainable development is measured with 11 indicators as metrics by which the world aims to track whether these targets are achieved, (Rajapakse et al., 2023). Most of the research took place in developed countries, especially the United States of America, although sanitation problems are more serious in developing countries.(Zhou et al., 2018).

According to Srivastava and Mishra, (2022) "global sanitation crisis" the population of those who do not have basic sanitation facilities such as toilets or latrines is around two billion. Most alarmingly, inadequate sanitation results into negative health consequences particularly among children which attests to interlinkages between sanitation, health, and hygiene and "burden of diseases" exemplified through disability-adjusted life years or DALYs. Globally, an estimated 3.4 billion people or 45% of the population used safely managed sanitation services in 2017. However, data availability is limited, and national estimates were only available for 96 countries, representing 54% of global population. Furthermore, while many countries had national data on treatment of wastewater from households connected to sewers, very few had data on treatment and disposal of waste from on-site facilities.

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(UNICEF and WHO, 2019).This remains the single biggest data gap for global monitoring of the SDG sanitation target (Bain et al., 2018). Other areas where there is missing or poor-quality data include sanitation system typologies, emptying practices in both urban and rural areas, and the ability to assess the magnitude of the fecal exposure risks associated with the appropriate management of such on-site systems. There are further data gaps around the influence of weather conditions on on-site sanitation management, which are altered further by climate change (World Health Organization, 2018), knowledge of these impacts is limited to small scale study areas.(Frenoux, C. and Tsitsikalis, A., 2015).

After decades promoting sanitation in low and middle-income countries, several countries and the global sanitation community have come to realize that it is time to rethink the approach to accelerating access to quality services. Since 2000, the WHO/UNICEF Joint Monitoring Programme of the Millennium Development Goals (MDGs) has consistently reported that the share of the population in low and middle-income countries that use pit latrines, septic tanks and systems termed as 'unimproved' sanitation facilities is growing.(NWASCO, 2018).

It is now estimated that between 2.1 and 2.6 billion people in low and middle-income countries rely on onsite technologies that produce tons of untreated Faecal Sludge (FS) every day. When septic tanks and pit latrines become full, the sludge that is collected from them is largely discharged untreated into open drains, irrigation fields, open lands or surface waters. The amount of untreated FS discharged into the open environment poses serious public health risk. A $5m^3$ truckload of FS dumped into the environment is the equivalent of 5,000 people practicing open defecation. Adding to this is the heavy load from raw faeces excreted in the open by an additional 1.1 billion people who still do not have access to any toilet.(NWASCO, 2018).The consequences of this waste entering the environment are staggering. The World Bank estimates that poor sanitation costs the world 260 billion USD annually. Poor sanitation contributes to 1.5 million child deaths from diarrhea each year. Chronic diarrhea hinders child development by impeding the absorption of essential nutrients that are critical to the development of the mind, body and immune system. It can also impede the absorption of life-saving vaccines(NWASCO, 2018).

Regionally, Safe water and sanitation are essential to the health of all Africans as well as to the social and economic development of their countries, yet millions lack access to both.(World Health Organization, 2023). The study is anchored on the agenda 2063 whose aspiration is that Africa shall have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation and the environment (*Agenda 2063*, 2015).

Nationally, The National Water Supply and Sanitation Council (NWASCO) reports that one of the greatest challenges facing water and sanitation supply utilities in Zambia is poor infrastructure development and maintenance. Inadequate water and sanitation infrastructure is mainly due to low financial investments in the sector, with an annual allocation of less than 3% of the national budget. According to NWASCO, the investments have been skewed towards water supply as opposed to sanitation and this situation has been compounded by lack of a clear policy on sanitation issues. Subsequently, Zambia has developed a comprehensive policy to guide the development and management of sanitation and water sectors. The specific policy measures for rural water supply and sanitation include a community-based approach; the promotion of appropriate technology; and capacity building at all levels. (National Rural Water Supply and Sanitation Program, 2006).

III. Literature Review

Socio-Economic aspects affecting Gender Mainstreaming in Sanitation

Gender Participation

A study conducted by Maseno and Kilonzo, (2011) disclosed that societal pressures can frequently affect a woman's ability to participate freely in development projects. Failure to recognize the burden of unpaid labour diminishes engagement in projects, and the assumption that gendered participation (in other words, the participation of a woman because she is a woman) needs no remuneration constrains the very participation it seeks to foster. Both the evaluations and the survey in this study show that such restrictions manifest predominantly in the form of voices being suppressed. There was little information on whether this view is consistent with the experiences of the beneficiaries in the study area or not.

Roles and Responsibilities

Another study conducted by Maseno and Kilonzo, (2011) observed that women and men assume different responsibilities for the water resources. They tend to take different roles in water, and more emphasis is about the reproductive roles of women to safeguard, manage and provide for the family. In this regard, gender disparities ensure that those needs go unmet, with discrepancies in the land tenure system, access to water, participation, resource control, capacity and skills development and marketing and commercial linkages", (ibid). The study also sought to assess gender roles and views on sanitation particularly in the study area where little is known about differential roles men and women perform when it came to households' sanitation construction and management thereby providing contextual knowledge.

Decision Making and Control

Socially excluded groups are continuously underrepresented at all levels, including in household level WASH decision-making, leaving most WASH decision making structures and processes to be dominated by able-bodied men. This has resulted in WASH

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service delivery being insensitive to the needs of women and other SEGs at both the community and societal levels. Additionally, socioeconomic factors such as disproportionate access to education, and thus low literacy levels, greatly inhibit the economic status of women and girls and limit their participation in WASH decision-making (Bartram and Cairncross, 2010). There are limited studies conducted in George compound focusing on decision making and control in sanitation thus this study helped in bridging the knowledge gap.

Education and Sanitation

The study conducted by WaterAid and SAFAIDS, (2014) further disclosed that additionally, socioeconomic factors such as disproportionate access to education, and thus low literacy levels, greatly inhibit the economic status of women and girls and limit their participation in WASH decision-making. Moreover, there are unsafe toilets, insufficient water access, and limited access to MHM materials are commonly associated with increased school absenteeism among girls. Studies conducted in sub-Saharan Africa suggest that poverty, inadequate MHM resources (pain management, pads, water and sanitation facilities) and limited psychosocial (self-confidence, attitude) support are key drivers for poor school attendance for girls (Bility, 1997).There are limited studies in George Compound regarding education situation for men and women and how it affects them regarding accessing sanitation thus creating the contextual gap and empirical gap which this study sought to address.

IV. Study Methodology

This chapter outlines the research paradigm, design, methodology, methods, and measures taken to ensure trustworthiness.

Research Paradigm

This study is grounded in the social constructivist paradigm, which recognizes multiple realities rather than a single objective truth. Scotland (2012) explains that reality is relative shaped by how individuals experience it at different times and places. Ontology, as Scotland defines it, deals with the assumptions we make about what is real or meaningful in the social phenomena we investigate. In line with this view, I examined reality by bringing together multiple perspectives. From an epistemological standpoint, I took a subjective approach, meaning knowledge was generated through my personal experiences and interactions with participants (Kivunja & Kuyini, 2017). This allowed me to co-create knowledge by interpreting the meanings participants drew from their own experiences. I also adopted a value-bound axiological stance, recognizing that my own background, experiences, values, and beliefs inevitably influenced the study. Kivunja and Kuyini (2017) describe axiology as the ethical considerations essential to research planning. Because of the nature of this study, I couldn't separate myself from what I was researching—I was part of it (Saunders et al., 2009). My positionality helped me integrate my own beliefs and experiences into the co-construction of meaning throughout the study. Finally, I used a methodological stance that encompassed the research approaches, designs, methods, and procedures-essentially, the planned investigation framework (Keeves, 1997). I applied inductive reasoning, which involves combining multiple observations or premises to reach a broader conclusion (Sauce & Matzel, 2017). This meant I moved from specific data collected from participants to more general insights about the study area.

Research Design

I adopted an interpretive phenomenological approach, which aims to describe the essence of a phenomenon by exploring it through the eyes of those who have lived it. As Neubauer et al. (2019) explain, phenomenology seeks to capture both what was experienced and how it was experienced. This philosophical approach allowed me to generate meaning from participants lived experiences.

Sampling, Location, Population, and Procedure

Study Location

The study took place in George Compound, a peri-urban area west of Lusaka. I chose this location because it had been the site of sanitation program interventions implemented by the Government of Zambia through the Lusaka Sanitation Program.

Study Population

The study population refers to the defined, limited, and accessible set of cases that form the basis for sample selection and must meet specific criteria (Arias-Gómez et al., 2016). My study population included beneficiaries of sanitation programs, members of the Ward Development Committee, the Water and Sanitation Committee, the Lusaka City Council (Public Health Department), the Zambia Environmental Management Agency (Inspectorate), the National Water Supply and Sanitation Council, and the Lusaka Water Supply and Sanitation Company (Peri-Urban Department). I selected these participants based on their firsthand experience working on sanitation programs in peri-urban areas.

Study Sample Size

I used a qualitative research approach where sample size was determined by data saturation. Suri (2011) describes data saturation as the point when collecting more data yields little in terms of new themes, insights, or information. I reached saturation after conducting interviews with 29 participants (10 men and 15 women) and 4 key informants.

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Sampling Procedure

I used purposive sampling, which involves intentionally selecting participants based on their ability to shed light on a specific theme or phenomenon (Robinson, 2014). More specifically, I employed criterion purposeful sampling, where participants must meet specific criteria to be included in the study. This approach ensured that relevant data could be collected (Haruna, 2023). I selected participants who had directly experienced and benefited from sanitation programs implemented by the government over the past ten years. Government stakeholders were chosen based on their experience implementing these programs in the study area. The final group included beneficiaries of sanitation programs, the Ward Development Committee, the Water and Sanitation Committee, the Lusaka City Council (Public Health Department), the Zambia Environmental Management Agency (Inspectorate), the National Water Supply and Sanitation Council, and the Lusaka Water Supply and Sanitation Company (Peri-Urban Department).

Data Collection Instruments

I collected primary data through two main methods: Key Informant Interviews with government officials and community opinion leaders, and In-Depth Interviews with sanitation program beneficiaries.

Key Informant Interviews

I used key informant interviews because they allow for intensive, one-on-one conversations with a small number of respondents to explore their perspectives on a particular program or situation. This tool is well-suited for open-ended questions in qualitative research. Key informant interviews are valuable for gathering in-depth insights from individuals with specialized expertise in a particular field (Akhter, 2022). I used this method with government officials and community leaders who had direct experience working in the sector or with sanitation program interventions in the study area.

In-Depth Interviews

I also conducted in-depth interviews to generate qualitative data. These interviews can be unpredictable and varied, making them well-suited for exploratory research focused on meaning and experiences (Osborne & Grant-Smith, 2021). This approach was ideal for my study because it allowed me to gather beneficiaries lived experiences in an open-ended way, rather than restricting their responses with structured instruments.

Data Collection Procedures

I conducted the interviews myself to gather participants' views and experiences. Interviews were conducted in English or translated into the participant's local language. Participants were selected using criterion purposive sampling. Each interview lasted between 50 and 60 minutes. I used audio recording with participants' consent.

Data Analysis

I analysed the data manually using a reflexive thematic analysis approach. Thematic analysis is well-suited for understanding experiences, thoughts, or behaviors across a dataset (Kiger & Varpio, 2020). Themes are actively constructed patterns of meaning that answer a research question, not just summaries or code categories (Kiger & Varpio, 2020). I followed Braun and Clarke's six-step framework: familiarizing myself with the data, generating initial codes, identifying themes, reviewing themes, defining and naming themes, and producing the report (Kiger & Varpio, 2020). The themes I developed helped me build patterns for interpreting the findings in relation to the study objectives and purpose.

Study Trustworthiness

I ensured rigor by focusing on trustworthiness, which Lincoln and Guba describe through four criteria: credibility, transferability, dependability, and confirmability (Ahmed, 2024). I established credibility by building trust and rapport with participants over time, which allowed me to gain deeper insights into their experiences, behaviors, and beliefs (Ahmed, 2024). This helped me capture rich data that might not emerge during brief interactions. I achieved transferability by thoroughly describing the research context, participants, and methods, allowing readers to assess similarities between my study and their own contexts and judge whether the findings might apply to their settings (Ahmed, 2024). I also detailed my sampling methods and participant selection criteria so others could determine if the findings might transfer to similar populations or settings. For dependability, I documented each step of the research process to ensure transparency and allow others to replicate the study or assess the reliability of the findings (Ahmed, 2024). Kakar et al. (2023) note that dependability refers to the consistency of findings over time. Eryilmaz (2022) adds that maintaining an audit trail—a detailed log of decisions made throughout the research—allows other researchers to reproduce the study, ensuring dependable results. Finally, I ensured confirmability through member checking, giving participants the opportunity to verify that their viewpoints and experiences were accurately represented. This strengthened the confirmability of the findings by allowing participants to validate or correct my interpretations. I also kept a reflective journal to track my evolving thoughts, biases, and reflections during the research process. This practice enhanced transparency and provided insights into my own subjectivity, contributing to the confirmability of the findings (Ahmed, 2024).

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IV. Study Findings

Demographic Characteristics of The Study Participants

Participants Age

The study revealed that; 5 were (18-35) representing (20%) of the study participants in the study area.12 were (36-55) representing (48%) and 8 were (56-78) representing (32%) of the study participants. Age was an important variable given that gender roles are shaped from childhood to adulthood hence this study sought appraise the age dimension in the study area to help inform the study.

Sex Distribution

The study disclosed that 10 were male representing (40%) and 15 were female representing (60%). The data on variable sex was collected because the researcher wanted to assess who between the two was most affected by gender inequalities in the study area. The findings established that there more women involved and interested in water and sanitation issues and also shows that women were readily available at homes performing household domestic roles which includes fetching water and ensuring sanitation needs for the households.

Income and Livelihood

The study revealed that participants' sources livelihoods and income is generated from rentals, business, employment, and family support. The study further established that 5 participants representing (22%) were employed, 8 of the study participants earned their income from rentals, representing (35%). Moreover, the study further established that 6 participants were into business representing (26%) and 4 drew their supported from family's members representing (17%). The above finding is significant in this study because it sought to ascertained participants sources income whilst applying the triple role framework to ascertain whether men and women both participated in gainful community activities.

Participants Education Status

The study disclosed that 8 of the study participants completed their primary school and this was representing (32%), 5 of the participants completed their secondary school, representing (20%). Moreover, 4 of the study participants completed college representing (16%), and 2 were graduates from university representing (8%). The study further established that 6 of the study participants were school dropouts, representing (24%) the study population. The above findings were important in this study as they helped to establish the population literacy level and helped to ascertain that education played out an important role when it came to appreciating sanitation investments by the beneficiaries in the area.

Poor Sanitation

The study revealed that poor sanitation affects men and women differently and it was further observed that women are more affected due to their biological nature, which limit their ability to use public spaces for relief, unlike men who can use open areas. The construction of toilets in the study, area helped address gender-specific concerns related to sanitation. A male key informant, aged 52 and a university graduate, submitted that:

"Mmm, poor sanitation affects both men and women in different ways, we men tend to use public places like bars, while women often have to ask neighbours for toilets, which undermines women's' dignity." Participant (GC 1).

Additionally, many female participants expressed concerns that due to poor toilet designs, women were more prone to infections than men, owing to their biological makeup. A female community beneficiary, aged 64 and with a grade seven education, shared her experience:

"The toilets were very dirty, and this made us women to contract fungal infections because of how we are made." Participant (GC 2).

Other participants shared the view that once the toilets were full, the owners would demolish them and build new ones in different locations at the same property. A 58-year-old female beneficiary, who had completed grade nine, explained to the interviewer:

"Mmm, when the old toilet is filled up, we dig a new one in a different area within the same yard, and this eventually make entire yard with toilets sites." Participant (GC 3).

Many participants interviewed highlighted that a major issue they faced was the lack of space for constructing toilets due to poor housing planning. Additionally, constructing toilets was challenging because of high costs, with an initial payment of 25%, which many could not afford. A key informant from the gender committee revealed that:

"Men and women both face challenges with space and boundary disputes with their neighbours. Others struggled to meet the 25% initial contribution, which most people in the area couldn't afford." Participant (GC 4).

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Education and Sanitation

Study participants emphasized that education was crucial in helping many beneficiaries understand the importance of constructing sanitation facilities. However, some participants noted that those who were illiterate often did not see the value in building such facilities on their premises. A key informant narrated that:

"Education plays a key role in raising awareness on the importance of sanitation for every household. It prepares you, so when you purchase land, you understand what services are needed. A lack of education impacts sanitation because many illiterate people didn't care whether they had a toilet or not." Participant (GC 5).

Moreover, most of the community beneficiaries interviewed indicated that illiteracy was a significant factor contributing to poor cleanliness due to a lack of knowledge. One beneficiary noted:

"Illiteracy is a major barrier to constructing toilets because many feels it's just a waste of money to build the toilets by the Lusaka Water Supply and Sanitation Company." Participant (GC 6).

In line with this perspective, other community beneficiaries stated that education increases awareness of what is beneficial and what is not. Knowledge enables individuals to assess the importance of having a toilet before deciding whether to rent a house. A 36-year-old male participant narrated that:

"I believe that if you are not educated, it can be difficult to discern what is good or bad. If one is educated, it helps you recognize the importance of having a good toilet before renting a house." Participant (GC 7).

Gendered Sanitation Challenges

Most study participants noted that in the past, cultural norms discriminated against women and favoured men. However, they observed that things have changed, with women now playing a more influential role in water and sanitation projects. Women are taking the lead in acquiring sanitation facilities and managing them. One informant shared:

"In the past, women were not allowed to participate in community programmes because power rested with men. Ah! In my view, my wife was fully involved; she was the one who initiated contact with the service provider. I also helped in mobilizing funds." Participant (GC 8).

Many participants expressed that:

"I know that not long ago we faced discrimination, but now we are included thanks to gender sensitization programs. Previously, women couldn't hold leadership positions because men felt jealous about being led by them. Now, we see women in leadership roles, and I feel comfortable with women taking on these positions because they can be just as knowledgeable as men. "Participant (GC 9).

Additionally, key informants indicated that cultural beliefs deeply embedded in the community also influenced toilet construction. Many were hesitant to have their toilets built by service providers due to concerns that they might leave something behind. One key informant explained:

"Mmm, because of traditional beliefs, people think that when others construct your toilets, they might leave something in them." Participant (GC 10).

Other female participants shared that women were socialized not to speak in public meetings, especially when their husbands were present, which made them passive recipients of sanitation services. Key informants noted:

"Women, by nature, are quiet and culturally tend not to express their needs except through their husbands. In mixed-gender meetings, women often can't voice their needs, such as menstrual hygiene, leading to the construction of toilets that cater more to men's needs, resulting in facilities that don't meet women's requirements." Participant (GC 11).

Diseases Burden and Financial Challenges

Most study participants revealed that toilets constructed by LWSC significantly reduced the disease burden for both men and women, as well as the associated costs of medical bills. The newly built toilets featured clean squat pans that provided comfort, free from unpleasant Odours and flies. The company also offered flexible payment options, making it easier for beneficiaries to access sanitation products. One informant remarked:

"When men are involved, they know exactly where the money goes and can plan payments in instalments, allowing them to understand sanitation expenses." Participant (GC 11).

Participants noted that toilet construction increased property values, enabling homeowners to charge higher rents than before. Many men and women actively participated in the construction process as bricklayers, painters, and carpenters.

"The immediate benefits include higher rental income due to improved sanitation. Another advantage is the ability to work as bricklayers, painters, and carpenters, sometimes providing construction materials, which helps reduce costs." Participant (GC 12).

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Most community beneficiaries indicated that constructing new toilets was cost-effective, as they did not have to spend much money, especially with the flexible payment plans. A 37-year-old female community member with a grade 12 education shared:

"One benefit is that our yard is small, so the construction of the toilet helped us maximize space and reduce Odours. It typically takes three to four years before needing to be emptied, which means we don't spend much money. Plus, we can pay in instalments instead of a lump sum." Participant (GC 13).

Furthermore, many male and female key informants noted that one economic benefit of household sanitation was the reduction in illnesses, which alleviated the financial burden on communities. When a family member fell ill, it was typically women who took care of them, while men focused on productive roles, such as managing family finances. Improved sanitation therefore provided economic advantages for both genders by saving money and allowing them to allocate time to other income-generating activities. One key informant explained:

"The clear economic benefits for both men and women include health improvements and reduced illnesses, which meant women had less time spent caring for the family. This also allowed them more opportunities for productive activities, while men could save their money for other needs. "Participant (GC 14).

Additionally, other female beneficiaries stated that household toilet construction enhanced sanitation and provided economic stability, as tenants were less likely to move to other locations once a house had a toilet. One female beneficiary remarked:

"The construction of toilets improved sanitation and cleanliness, preventing tenants from leaving due to poor conditions. This improvement helps us maintain rental income." Participant (GC 15).

V. Discussion of Findings

The socioeconomic aspects affecting gender mainstreaming in sanitation

Demographic Information

The study established that, most participants (48%) were between 36–55 years, followed by those aged 56–78 years (32%). This age distribution is consistent with findings from community-based gender and WASH studies, which indicate that middle-aged and older adults tend to participate more actively in community consultations and household decision-making processes (UNICEF, 2019; WHO, 2021). Literature further suggests that individuals in this age range often assume key gender roles—both productive and reproductive-making them valuable informants on issues relating to water, sanitation, and gender norms (Cleaver & Baden, 1998). Thus, the age patterns observed in this study align with evidence that gender roles intensify and become more defined as individuals grow older, influencing their engagement with WASH services.

Furthermore, the study revealed that 60% of participants were female, which reflects broader patterns documented in gender and WASH literature. Numerous studies (e.g., Sorenson et al., 2011; Graham & Polizzotto, 2013) emphasize that women carry the primary responsibility for water collection, sanitation management, and household hygiene. As such, they are more likely to participate in research related to these themes. Similarly, gender studies highlight that women's domestic roles increase their vulnerability to water shortages, poor sanitation, and related health risks (UN Women, 2020). Therefore, the overrepresentation of women in the sample aligns with global research showing that women have more at stake—and more experiential knowledge—in water and sanitation matters.

Moreover, the study found diverse income sources, including employment (22%), rentals (35%), business activities (26%), and family support (17%). These findings reflect patterns observed in socio-economic studies in low- and middle-income communities, where households often rely on mixed and informal income streams (Chant & Sweetman, 2012). The use of the triple role framework is also supported by literature demonstrating that women's engagement in productive roles is often constrained by their heavy involvement in unpaid domestic activities (Moser, 1993). Similar studies (e.g., Deka, 2019) show that livelihood patterns influence how men and women access, use, and invest in community services such as water and sanitation. Thus, the livelihood trends observed in this study correspond with existing research and support the argument that gendered economic roles shape community participation in WASH initiatives.

Equally, the study showed that most participants had primary-level education (32%) or were school dropouts (24%), with only a small proportion being college graduates or university-educated. This pattern reflects existing research indicating that education levels in many peri-urban and rural communities remain low, particularly among older populations (UNESCO, 2020). Literature further demonstrates that education plays a critical role in shaping individuals' awareness of sanitation needs and their willingness to invest in improved facilities (Jenkins & Scott, 2007). Communities with lower literacy levels may have limited understanding of the long-term health and socio-economic benefits of sanitation investments, which aligns with the findings in this study. Therefore, the education profile of participants is consistent with wider evidence suggesting that literacy significantly influences attitudes toward sanitation, hygiene, and household health.

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Gender Inequalities

The study conducted by Assfa (2021) 'Gender equality and social inclusion in relation to water, sanitation, and hygiene in the Oromia Region of Ethiopia' established that poor sanitation affects men and women differently. Women are more negatively affected than men because of their biological nature which limits them from using public places to relieve themselves as compared to men who use open areas and public places to help themselves. The foregoing finding is consistent with the study conducted in Ethiopia, which disclosed that "During the menstrual time, we get ashamed to go to the toilet in the absence of water. Therefore, is need for men and women to be included in sanitation interventions rather than focusing on men alone hence collaborating with systemic thinking of which the researcher applied which holds that the whole is not greater than the sum of its parts hence furthering use of the theory. Similarly, evidence from Ethiopia demonstrates that inadequate sanitation facilities have far-reaching implications for women, girls, and other socially excluded groups (SEGs). In communities where open defecation remains widely practiced, women often avoid relieving themselves during the daytime due to concerns about privacy, dignity, and social norms. As a coping strategy, many reduce their food and water intake throughout the day to delay the need to use the toilet, a practice that carries serious health risks, including dehydration and urinary tract infections. Even at night, when privacy is perceived to be greater, women still face significant challenges. Moving to isolated areas to defecate exposes them to heightened risks of harassment, assault, and other forms of gender-based violence. The act of open defecation becomes unsafe and distressing, reinforcing gendered vulnerabilities associated with poor sanitation infrastructure (Baker, 2018). These findings underscore the urgent need for gender-responsive and inclusive sanitation solutions that address safety, privacy, and the specific needs of vulnerable populations.

The study also disclosed that there is unequal role sharing in the study area and this was accounted for going by the fact that women were the ones who performed most of the roles in the study area during sanitation development. The study concluded that WASH roles are culturally a responsibility of women. The participants expressed that cleaning the toilet and fetching water is mainly done by women early in the morning before anyone wakes up women make sure that the toilets are cleaned up. Whereas men only play the role of mobilizing finances for buying cleaning soaps and other chemicals. The men were only involved whenever the toilets got damaged or filled up. Moreover, the finding is in collaboration with the triple role which shows that women are the ones who are usually placed in subordinate positions when it comes to carrying out domestic roles such as water and sanitation requirements at household level. Therefore, using this theory, the researcher was able to explore the roles that are done during sanitation development and using this lens the study was informed that women were the ones who performed triple roles with little involvement of their male counter parts whose role was more pronounced in the productive role performance.

Gender Roles

Another study conducted by (Assfa, 2021), established that socially and culturally induced gender roles disproportionately assign most WASH management activities, such as fetching, storing, and treating water to women and girls. Female children who are generally more involved in household activities than male children are also at a higher risk of experiencing WASH-related illnesses, such as diarrhoea; however, illness is also associated with other risk factors, including the hygiene of female caretakers, household practices, and perceptions of WASH related illness (e.g., diarrhoea) The reality of water fetching from long distances also exposes girls and women to crime, gender-based harassment, sexual assault, and chronic stress. Poverty and low awareness of gender and social mainstreaming topics increase the vulnerability of marginalized groups and often inhibit their social mobility at the individual level. The study revealed that education was important because it helped beneficiaries to appreciate the benefit of constructing sanitation facilities on the other hand most of the illiterate beneficiaries did not value constructing sanitation facilities. The study concluded that the aforementioned finding was collaborative with the study conducted by WaterAid which disclosed that, socioeconomic factors such as disproportionate access to education, and thus low literacy levels, greatly inhibit the economic status of women and girls and limit their participation in WASH decision-making, (WaterAid and SAFAIDS, 2014). Moreover, applying the triple role lens shows because of multiple roles women perform as compared to their male counterpart, they tend to have fewer chances of advancing with their education because there are few incentives for them to challenge their subordinate position to attain the gender strategic needs.

VI. Conclusion

The study revealed that poor sanitation affects men and women differently. It was further observed that women were more affected than men due to their biological nature. Given their biological nature, women were limited by their ability to use public spaces for relief, unlike men who can use open areas. The construction of toilets under the project helped address gender-specific concerns related to sanitation. Moreover, most study participants noted that in the past, cultural norms discriminated against women and favoured men. Similarly, the researcher disclosed that most study participants revealed that toilets constructed by LWSC significantly reduced the disease burden for both men and women. Furthermore, the study revealed that the company offered flexible payment options, making it easier for beneficiaries to access sanitation products. The findings of inequalities will help the policy makers and the service providers to target their sanitation interventions this would improve service delivery for all the people in the Peri-Urban areas. The findings collaborate with existing literature but furthers knowledge by providing contextual empirical evidence on the socio-economic situation of George Compound. In view of the above findings, I recommend that the Ministry of Education need to develop a gender sensitive curriculum should be developed to address inequalities that affects women sanitation

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XIV, Issue X, October 2025

specific needs early enough. And moreover, the Lusaka City Council needs to consider planning the peri-urban areas to address challenges of transportation of vacuum tankers when the toilets fill up.

Study Limitations

I conducted this study in the one peri-urban area due to time and financial constraint hence narrowing the scope making it difficulty to generalise the findings. The data generated was self-reported prone to biases which was overcome by member checking during data collection. There is also potential of possible translator bias which aligns with the philosophy I selected in terms of positionality which is value laden. Moreover, the study faced the limitation of generalisation due to its limited scope. This limitation would be overcome through journaling of the research findings.

VII. Study Recommendations

The Government:

- The Ministry of Education need to develop a gender sensitive curriculum should be developed to address inequalities that affects women sanitation specific needs early enough.
- The Lusaka City Council needs to consider planning the peri-urban areas to address challenges of transportation of vacuum tankers when the toilets fill up.
- The Ministry Water Development need to connect the peri-urban areas to water supply to address the water challenges faced by the communities.

VIII. Acknowledgements

I would like to express my heartfelt gratitude to my Supervisor Dr. Vincent Kanyamuna, Dr. John Moose and Prof Francis Simui for there insightful guidance and exceptional supervision during the preparation of this Thesis. Further acknowledge goes to my benefactors, friends, and mentors whose support and dedication have been instrumental in facilitating the research process. I wish for them abundant blessings and sustained good health.

Notes on Contribution

James Mwale is currently pursuing a Doctor of Philosophy Degree in Development Studies at the University of Zambia. He holds a Bachelor of Social Work, Master of Social Work and Master of Arts in Development Studies. He is also Pursuing Master of Science Degree in Public Health from the same institution. His research interests focus on the Household Sanitation Programmes Implementation in George Compound a Peri-Urban area in Lusaka, Zambia. Moreover, previously studies that were undertaken focused on: Programme, Youth Empowerment for the vulnerable youths: A case study of SOS Children's Villages, and Gender inclusion in the household sanitation programme in George compound.

Conflict of Interest

The researcher confirms that no conflicts of interest existed during this study, and neither personal nor financial considerations influenced the research or its findings.

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