

**SOCIAL, CULTURAL, AND ECONOMIC FACTORS  
INFLUENCING PROMOTION OF LATRINE UTILIZATION  
IN LAISAMIS SUB COUNTY, MARSABIT, KENYA**

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**A Thesis Submitted in Partial Fulfillment 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 a degree in any other institution.

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## **DEDICATION**

This work is dedicated to my family, friends, and colleagues and to all public health practitioners worldwide.

## **ACKNOWLEDGEMENT**

All glory and honor to our almighty God for the strength, good health, wisdom and guidance all throughout my studies, in special way I extend my deepest expression to my research supervisors Dr. Elijah Walubuka and Dr. Mary Amatu for their wisdom, patience and guidance. They have been an excellent source of encouragement and motivation, patiently devoting their valuable time for review and insightful comments, their support motivated me to stay on course. I wish to extend my acknowledgement to various person and institution for contribution they made toward development and completion of my thesis report, to begin with I will like to thank and appreciate my sub county public health officer for study approval, equally I appreciate Meru university sanitation program for golden opportunity to be part of Belinda and Gate scholarship program and finally my lovely family and friends for their support.

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## **OPERATIONAL DEFINITION OF TERMS**

- Cultural Factors:** These factors shape the way individuals think, behave, and interact with others, impacting various aspects of life such as communication, education, healthcare, and governance. These factors include; cultural beliefs, cultural acceptances, cultural barriers and belief systems (laws and penalties).
- Economic factors:** Refers to various financial and material aspects that influence individual or household decisions and behaviors, particularly regarding their capacity to purchase goods, access services, and sustain economic activities.
- Latrine Utilization:** Refers to regular and proper use of latrines by individuals and households for the purpose of sanitation.
- Social Factors:** Refers to the influences that arise from the social environment and community interactions, which can significantly affect latrine utilization. These include social networks, social norms and perceptions, social support, and policies and directives.
- Social Norms:** The shared expectations and rules that guide the behavior of people within a society or community.
- Social Stigma:** Refers to the negative attitudes and beliefs that society holds towards individuals or practices that deviate from accepted norms.

## **ABBREVIATIONS, SYMBOLS AND ACRONYMS**

AOR	Adjusted Odds Ratio
ASAL	Arid and Semi-Arid Land
CHV	Community Health Volunteer
CIDP	County Integrated Development Plan
CI	Confidence Interval
CLTSH	Community-Led Total Sanitation and Hygiene
CLTS	Community-Led Total Sanitation
CSG	County Steering Group
df	Degrees of Freedom
FGD	Focus Group Discussion
HBM	Health Belief Model
JMP	Joint Monitoring Programme
KESHP	Kenya Environmental Sanitation and Hygiene Policy
KIHBS	Kenya Integrated Household Budget Survey
KFSSG	Kenya Food Security Steering Group
KNBS	Kenya National Bureau of Statistics
MOH	Ministry of Health
MOH-513	Ministry of Health Dataset Form 513
MUST	Meru University of Science and Technology
NACOSTI	National Commission for Science, Technology and Innovation
NGO	Non-Governmental Organization
OD	Open Defecation

ODF	Open Defecation Free
OR	Odds Ratio
p	p-value
PHO	Public Health Officer
SCT	Social Cognitive Theory
SD	Standard Deviation
SDG	Sustainable Development Goal
SHDS	Somalia's national Health Demographic Survey
SPSS	Statistical Package for the Social Sciences
SSA	Sub-Saharan Africa
USAID	United States Agency for International Development
VIF	Variance Inflation Factor
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization
UNICEF	United Nations Children's Fund
X <sup>2</sup>	Chi-square

## ABSTRACT

The issue of sanitation has long existed and drawn criticism from figures like Mahatma Gandhi, who stated that sanitation in a community is more important than independence. Latrine utilization is among ways of ensuring that communities are safe and are not interacting with disease causing pathogens. Evidence studies have revealed that the presence of latrines has not completely been a guarantee for their utilization especially among the pastoral communities. The study aimed to assess influence of social, cultural, and economic factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya. The study adopted cross-section survey design, to obtain both quantitative and qualitative data. Quantitative data was obtained using Structured questionnaires and qualitative data from Focused group Discussions (FGD). Cluster, purposive, and simple proportionate random sampling was used to identify 177 Households heads and participants of FGD. Quantitative data was analyzed using Statistical Package for Social Science (SPSS) version 26.0 for descriptive statistics and logistic regression analysis. Logistic regression was computed in univariate and multivariate analysis to determine the relationship between predictors and latrine utilizations, and results were presented as an odds ratio with 95% Confidence Interval (CI). Qualitative data was analyzed thematically and presented in verbatim. From results 76.3% of respondents indicated latrine to be accessible and only 35.6% of latrine was utilized. The study found that social factors such as societal network (AOR = 9.793,  $p = 0.023$ ), perception of latrine use as a sign of respect and cleanliness (AOR = 2.708,  $p = 0.004$ ), and social stigma (AOR = 12.084,  $p < 0.001$ ) were significantly associated with latrine utilization. Cultural predictors included cultural acceptance of latrines (AOR = 1.662,  $p = 0.009$ ), OD signifies continuation of ancestors (AOR = 1.823,  $p = 0.004$ ) and cultural taboos (AOR = 0.255,  $p = 0.002$ ) were statistically significant. Additionally, Pastoralism (AOR = 6.305,  $p = 0.007$ ), affordability (AOR = 2.243,  $p = 0.028$ ) and incentives (AOR = 0.429,  $p = 0.001$ ) significantly influence latrine utilization. The study concludes that latrine ownership alone does not ensure consistent use in pastoralist settings. Social, cultural beliefs, and economic barriers significantly hinder utilization, contributing to continued open defecation and poor public health outcomes. Addressing these challenges requires more than infrastructure it demands a holistic approach that considers the socio-cultural context and economic realities of rural households. The study recommends community-based behavior change programs involving local leaders, elders, and influencers to challenge taboos and social stigma. Government and non-governmental actors should integrate culturally responsive education and participatory approaches to ensure lasting impact.

## CHAPTER ONE: INTRODUCTION

### 1.0 Introduction

This chapter provides an overview of the background to the study, followed by the problem statement, objectives, research questions, justifications and significance of the study. The chapter also discusses the study's limitations and delimitations.

### 1.1 Background to the study

The rural sanitation crisis globally is like a neglected orphan child that no one seems ready to adopt merely because the world is seeking to urbanize cities. About, 3.5 billion people globally lack access to safely managed sanitation services, including 419 million people still practice open defecation, especially in sub-Saharan Africa and South Asia (World Health Organization [WHO] & United Nations Children's Fund [UNICEF], 2023). While sanitation infrastructure has improved over the years, there is a substantial gap between latrine availability and actual utilization. This gap underscores the importance of focusing not only on "hardware" interventions like latrine construction but also on "software" components such as behavior change and cultural norms (Fagunwa et al., 2025). Achieving universal sanitation as outlined in Sustainable Development Goal 6 by 2030 requires a concerted effort to address both physical infrastructure gaps and the underlying social, cultural, and economic barriers to sanitation adoption.

Latrine utilization is commonly defined as the consistent and proper use of latrine facilities by all members of a household, including at night and during times of illness or water scarcity (Belete *et al.*, 2024; Ismail *et al.*, 2024). About 68% of the world population has access to improved sanitation facilities, with high-income countries reporting 99% to 100% access to improving sanitation facilities, while 27% of middle-income countries have access

to improving sanitation (World Bank, 2022). However, substantial disparities exist between latrine coverage and actual use. According to the WHO/UNICEF Joint Monitoring Programme (JMP), as of 2021, only 50% of households in Southern Asia had access to and used safely managed sanitation services, despite widespread efforts to build infrastructure (WHO & UNICEF, 2023). A study by Takhelchangbam et al. (2023) in rural India found that nearly 20% of households with latrines did not use them consistently, contributing to high rates of mortality and morbidity.

Similarly, in Sub-Saharan Africa (SSA), the disparity between access to sanitation infrastructure and actual latrine utilization remains a persistent public health concern. According to WHO and UNICEF (2023), only 38% of the rural population had access to basic sanitation services in 2022 a modest increase from 23% in 2000. However, access does not necessarily translate into usage, as SSA remains the region with the highest prevalence of open defecation (Busienei et al., 2019). This stark difference reflects a common regional pattern where behavioral change has not kept pace with infrastructure development, thereby limiting the anticipated health and environmental benefits of sanitation programs

In Kenya, rural sanitation coverage remains a significant challenge, despite being recognized as a basic need and a right under Article 43 of the Constitution of Kenya. According to Nyamusi (2021), only 31% of the Kenyan population has access to improved sanitation facilities, while millions of people still practice open defecation. The widespread lack of access to improved sanitation are profound, may contributes to the continued cycle of poor health outcomes, environmental degradation, and economic setbacks in rural communities. The WHO/UNICEF Joint Monitoring Programme (2023) reported that 12.3 million people in Kenya continue to practice open defecation, particularly in arid and semi-arid regions like

Marsabit and Turkana. Despite various efforts by the Kenyan government to improve sanitation access, including policies such as the National Sanitation and Hygiene Policy (2016) and interventions like Community-Led Total Sanitation (CLTS), progress has been slow. For example, studies in Marsabit and Turkana have shown that, despite the availability of sanitation infrastructure, the persistent practice of open defecation can be attributed to socio-economic challenges, lack of behavioral change, and limited community engagement (Graham et al., 2019; Busienei et al., 2021). This highlights the need for a comprehensive approach that not only focuses on building infrastructure but also promotes sustainable behavioral changes, community ownership, and long-term sanitation practices.

The influence of social networks on latrine utilization has become a central focus in sanitation behavior research, particularly in low- and middle-income countries (Pakhtigian et al., 2022; Lopez et al., 2019). A study by Patil (2019) in rural India revealed that individuals embedded in communities where toilet use was the norm were more likely to adopt similar behaviors, emphasizing the role of peer influence and communal pressure.

Similarly, Pakhtigian et al. (2022) found that while external interventions like subsidies increase latrine adoption, sustained use is largely influenced by neighbors' behaviors, especially among women. De et al. (2021) further highlighted that sanitation norms were enforced through interpersonal influence, with women at the center of household hygiene enforcement. Lopez et al. (2019) in Ecuador showed that social pressure and individual attitudes significantly impacted latrine use, though economic barriers remained a major obstacle. In Ethiopia, Chambers et al. (2021) found that community support and neighborhood ties were key to latrine reconstruction after disasters. However, Kwiringira et al. (2023) in Uganda showed that weak social ties in urban slums limited cooperative

sanitation efforts. While these studies shed light on the role of social networks, there remains a significant gap in understanding how social networks in pastoralist communities, such as those in Laisamis Sub-County, Marsabit, can sustain long-term latrine use.

Past studies have demonstrated that social stigma might profoundly shape latrine use, especially among marginalized populations, including women and people with disabilities.

A qualitative study by Gauri et al. (2023) in rural India revealed that open defecation was often associated with shame, embarrassment, and social disgrace, particularly for women.

Similarly, Vogel et al. (2022) found that individuals were more likely to adopt latrine use when they feared negative social evaluation, such as being labeled “dirty” or “uncivilized.”

These findings underscore that sanitation choices are shaped by social expectations and emotional triggers, particularly the fear of social exclusion. Stigma operates as a powerful motivator for behavioral change but also cautions against coercive approaches. However, these studies do not address how stigma functions in remote, pastoralist settings, which is a significant gap. A study by Getahun et al. (2022) in Ethiopia found that 22% of people with disabilities had access to suitable latrines, but social stigma and exclusion were widespread. Likewise, Ukpabi (2024) in Nigeria highlighted how open defecation led to gender-based violence and shame, particularly for women. While these studies focus on urban or peri-urban settings, they overlook pastoralist communities, where mobility, traditional norms, and collective practices influence sanitation behaviors.

Cultural barriers to latrine usage remain a significant public health challenge in low-income settings, as highlighted by Eliud et al. (2022), Kefeni and Yallew (2018), Godana and Mengistie (2017), Aiempjoy et al. (2017), and Belete et al. (2024). Eliud et al. (2022) assessed the influence of cultural factors on latrine adoption in Nzau Sub-County, Makueni

County, and found that gender norms significantly shaped latrine use, with women reluctant to use latrines due to cultural associations with impurity.

Kefeni and Yallew (2018) similarly identified gendered sanitation norms in Addis Ababa, where women in informal settlements faced discomfort using communal latrines due to privacy, cleanliness, and odor issues. Godana and Mengistie (2017) explored cultural taboos in Southern Ethiopia, revealing that beliefs linking feces to witchcraft or spiritual impurity entrenched open defecation practices. Aiemjoy et al. (2017) found similar cultural barriers in the Amhara region, where outdoor defecation was culturally accepted. Belete et al. (2024) reinforced that pastoralist mobility significantly impacts latrine adoption, with semi-nomadic communities prioritizing mobility over permanent sanitation. While these studies identify gender and cultural norms as barriers, none fully explore how cultural diversity and regional variations such as those in Laisamis Sub-County, Marsabit, Kenya may create unique sanitation challenges.

Research consistently supports that income levels could play a role in latrine construction, maintenance, and usage (Woyessa et al., 2022; Omer et al., 2022; Ahmed & Ali, 2024; Meili et al., 2022; Bankole et al., 2023). Woyessa et al. (2022) found that while financial status influenced latrine ownership, the consistent use of latrines was more dependent on behavioral factors like cleanliness and convenience. Similarly, Omer et al. (2022) observed that income indirectly affected latrine quality and upkeep, but other factors, such as education and hygiene practices, were stronger indicators of sustained use. In Somalia, Ahmed and Ali (2024) demonstrated that wealthier households were significantly more likely to adopt improved latrines, though urban-rural disparities remained substantial. Meili et al. (2022) highlighted that, while income predicts access, the effective management and

upkeep of sanitation services often depend more on community engagement than on wealth. Bankole et al. (2023) echoed this sentiment, suggesting that behavioral attitudes and institutional support were more influential than economic status alone. However, while these studies confirm income's impact on sanitation access, they overlook how income interacts with pastoralist lifestyles, seasonal mobility, and geographic isolation factors that likely shape sanitation behaviors differently in places.

Studies conducted across Sub-Saharan Africa and South Asia consistently demonstrate that while Community-Led Total Sanitation (CLTS) interventions effectively facilitate initial latrine adoption, economic limitations might constrain the long-term sustainability of latrine use, maintenance, and necessary upgrades (Kouassi et al., 2023; Wasonga et al., 2023; Ahmed & Ali, 2024). In a study by Gitonga et al. (2024) in Imenti North Sub-County, Kenya, 22.2% of households cited financial constraints as a primary barrier to latrine ownership and maintenance.

Despite 77.8% of households utilizing personal funds for latrine construction, many were unable to afford repairs or upgrades. Ajemu et al. (2020) in Tigray, Ethiopia, similarly identified financial incapacity as a significant barrier, especially in households unable to rebuild latrines after structural collapse. Kouassi et al. (2023) in a multi-country study across 10 African nations found that 65% of latrines were structurally inadequate due to the inability of households to afford necessary maintenance. Ahmed and Ali (2024) also highlighted stark disparities in latrine access in Somalia, with wealthier households having far greater access compared to poorer ones. These findings highlight the importance of integrating financial support mechanisms, such as subsidies and low-cost technologies, to ensure the durability and sustainability of sanitation systems. However, the findings from

these studies may not be directly applicable to the unique geographical and socio-economic context of the study area.

Research by Peletz et al. (2021), Tiwari et al. (2022), Scott et al. (2019), Hoo et al. (2022), and Doe and Aboagye (2022) consistently highlights that economic constraints and competing household priorities could be significant barriers to investing in sanitation infrastructure, particularly latrines, in low-income and informal settlements

A study by Tiwari et al. (2022) observed that in India, lower-income households prioritized basic survival needs like food and shelter over sanitation, often leading to the use of shared or unimproved facilities. Doe and Aboagye (2022) in Kumasi, Ghana, emphasized that despite the recognition of latrine benefits, households with irregular income deprioritize sanitation. Hoo et al. (2022) demonstrated that combining poverty-targeted subsidies with sanitation marketing increased latrine purchases in rural Cambodia. These studies suggest that addressing financial barriers is critical to improving sanitation access. However, the applicability of these findings to study area, remains uncertain.

## **1.2 Problem Statement**

Despite significant efforts to enhance sanitation through programs such as Community-Led Total Sanitation (CLTS) in rural Kenya, open defecation remains pervasive in many regions, particularly in arid and semi-arid areas. In these communities, particularly those predominantly occupied by pastoralist populations, ownership of latrines does not necessarily translate into consistent usage (Abebe & Tucho, 2020; Busienei et al., 2019). A report by the Kenya Food Security Steering Group and the Marsabit County Steering Group (KFSSG & CSG, 2023) highlights that latrine coverage in Marsabit County stands at approximately 49.2%, with significant disparities observed between sub-counties. Within

Laisamis Sub-County, a part of Marsabit, sanitation coverage is considerably lower, with only about 32.8% of households having access to latrines (MOH-513, 2023).

Even more concerning, despite the presence of functional latrines, utilization rates are alarmingly low, with 25% of households reporting at least one member practicing open defecation, underscoring a critical gap in behavioral change regarding sanitation practices (MOH-513, 2023). Open defecation has significant public health implications, as it increases the risk of the spread of infectious diseases such as cholera, dysentery, and diarrhea, which are major causes of morbidity and mortality in rural Kenya. Understanding the specific socio-cultural, economic, and behavioral barriers in Laisamis Sub-County is crucial in designing strategies that can effectively promote latrine utilization and ultimately improve public health outcomes

The ideal situation would involve the successful implementation of Community-Led Total Sanitation (CLTS), where the community collectively adopts improved sanitation practices and ensures the maintenance and proper use of latrines. This would not only help reduce open defecation but also improve public health outcomes by minimizing the spread of waterborne diseases. Such an approach would align with the objectives of Kenya's National Sanitation and Hygiene Policy (2016–2030), which aims to achieve universal access to safely managed sanitation by 2030 (Ministry of Health, 2016). Achieving this ideal, however, requires more than just the construction of infrastructure. Behavioral change, community engagement, and addressing local socio-cultural barriers are critical components of the solution

While previous studies Kenya research largely focuses on the physical presence of latrines and basic health outcomes (Eliud et al., 2022; Gitonga et al., 2024; Isunju et al., 2022), but

few studies have examined the intersection of cultural taboos, social stigma, and economic constraints in shaping latrine utilization in such communities (Fagunwa et al., 2025). Additionally, despite improvements in sanitation facilities across Kenya, contextual aspects may impede latrine usage, (Munyigi & Mang'uriu, 2024). The unique pastoralist lifestyle, seasonal mobility, and cultural perceptions of sanitation require a more localized assessment to develop interventions that are both socially and culturally acceptable. This research aimed to fill this gap by exploring how social, cultural, and economic factors specifically affect latrine utilization in Laisamis Sub-County.

### **1.3 Justification of the Study**

Proper toilet usage is essential for enhancing public health by preventing the spread of waterborne diseases and reducing infections. Toilets provide a controlled environment for waste disposal, significantly lowering exposure to harmful pathogens like *E. coli*, cholera, and typhoid, which are prevalent in regions with inadequate sanitation (Prüss-Üstün et al., 2019; World Health Organization, 2020). Research by Shang et al. (2022) in rural China revealed that improved latrines reduced the risk of diarrhea by 60%, schistosomiasis by 42%, and soil-transmitted helminths (STH) by 65%, compared to areas with no intervention. This highlights the urgent need for this study, which aims to explore the behavioral aspects influencing latrine utilization. Understanding these factors is crucial for promoting sustainable latrine use and improving public health outcomes, particularly in regions with sanitation challenges.

Access to sanitation facilities, such as toilets, provides significant social benefits, particularly regarding dignity and safety. Proper sanitation reduces social stigma related to open defecation and provides privacy and security, particularly for women and marginalized

communities (Vatta et al., 2021; Raut et al., 2018). In many societies, toilets help individuals maintain dignity and promote gender equality, particularly for women during menstruation (Sahoo et al., 2020). The availability of toilets has been linked to increased school attendance for girls, as they can manage menstrual hygiene safely (Das & Das, 2019).

Toilets also provide safety by reducing the risk of sexual harassment associated with defecating in public spaces, fostering a healthier and more inclusive environment for all community members. However, when latrines are not utilized, these benefits are not fully realized, continuing the cycle of public health risks, safety concerns, and gender inequalities. This demonstrates the pressing need for this study, which could explore the factors affecting latrine utilization.

Economically, the benefits of toilet usage are substantial, as sanitation significantly impacts productivity, healthcare costs, and national economic growth. The World Bank has highlighted that every \$1 invested in sanitation yields a \$5 return in terms of health, productivity, and reduced medical costs (Hutton et al., 2017). Studies demonstrate that inadequate sanitation causes lost workdays due to illness, whereas proper sanitation improves workforce health and productivity (Wright et al., 2020). Furthermore, access to sanitation facilities promotes economic development by reducing healthcare costs and fostering more attractive investment conditions (Sasaki et al., 2020). The underutilization of latrines perpetuates this cycle, hindering both individual and community economic advancement. This reinforces the need for this study, which aimed to identify the barriers to latrine utilization in Laisamis Sub-County. By understanding these barriers, the research could provide valuable insights for overcoming challenges and maximizing the economic potential of sanitation in the region.

## **1.4 Objectives of the study**

These sections contain general and specific objectives of the study.

### **1.4.1 General objectives**

To assessed influence of social, cultural, and economic factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya.

### **1.4.2 Specific objectives**

- i. To examine the influence of social factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya.
- ii. To assess the influence of cultural factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya.
- iii. To establish influence of economic factor in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya.

## **1.5 Research Question**

- i. Which social factors influence latrine utilization in Laisamis Sub County, Marsabit County?
- ii. Which cultural factors that influence of utilization of latrine in Laisamis Sub County, Marsabit County?
- iii. Which economic factors that influence latrine utilization in Laisamis Sub County, Marsabit County?

## **1.6 Significance of the Study**

The findings from the study could plays a crucial role in informing and shaping sanitation policies at both local and national levels. The findings can help refine national sanitation policies, such as the Kenya National Sanitation and Hygiene Policy (2016–2030), by

incorporating more context-specific approaches that cater to the unique challenges faced by pastoralist and rural communities. Furthermore, the research can guide policymakers in designing inclusive programs that promote long-term behavior change, with a focus on addressing social stigma, cultural barriers, and economic constraints. This can contribute to achieving the Sustainable Development Goal (SDG) 6, ensuring access to sanitation and hygiene for all, particularly in marginalized regions.

For practitioners, this study could serve as a guide to designing behavior change interventions that are sensitive to local norms and values, ensuring higher adoption rates of sanitation practices. Additionally, the identification of specific social stigma and cultural barriers related to sanitation can inform the design of culturally appropriate education materials and strategies. Practitioners can use these findings to develop tailored programs that improve access to sanitation facilities, maintain community support, and ensure sustainability, thereby reducing open defecation and improving public health outcomes in rural and pastoralist areas.

This research offers valuable insights to local authorities, sanitation practitioners, and community stakeholders involved in promoting sanitation and hygiene practices. By identifying the key social, cultural, and economic factors that influence latrine utilization, practitioners can tailor their approaches to address the specific barriers in the community. This includes implementing community-based education programs, fostering partnerships with local leaders and influencers, and adopting culturally appropriate interventions that address the stigma and economic challenges associated with latrine use. By enhancing local practices, this study can contribute to improving sanitation outcomes and achieving long-term behavior change in the Sub-County.

The study contributes to the advancement of sanitation research by providing a comprehensive understanding of the multifaceted factors influencing latrine utilization. By employing a multidisciplinary approach that integrates social, cultural, and economic perspectives, the study sets a precedent for future research endeavors in similar contexts. This methodological approach can be used to guide future studies that seek to explore the barriers to sanitation adoption in pastoralist communities or other low-resource settings, providing a framework for improving sanitation practices and ensuring sustainable outcomes.

### **1.7 Limitation of the Study**

The study specifically targeted households with latrines and communities that had achieved Open Defecation Free (ODF) status. This focus excluded households without latrines or those in areas with lower sanitation adoption, which could lead to a biased representation of latrine utilization behaviors. While the focus was on ODF areas, efforts were made to diversify the sample across various demographic groups within the study areas. Additionally, the use of a random sampling method aimed to reduce the potential for selection bias.

The study also relied heavily on self-reported data from respondents, which can be subject to social desirability bias or recall bias. Participants may have provided answers they believed were more socially acceptable or aligned with community norms, potentially affecting the accuracy of the data. To address this limitation, triangulation was employed by collecting both quantitative and qualitative data from randomly selected respondents. This method provided a more comprehensive understanding and balanced the potential biases in self-reported responses. Furthermore, confidentiality was assured to encourage truthful and honest feedback from participants.

### **1.8 Delimitation of the Study**

The study was delimited to Laisamis Sub-County in Marsabit County, Kenya. Therefore, the findings may not be directly applicable to other regions with differing geographical, cultural, or socio-economic contexts, whether urban or rural. While latrine utilization and sanitation practices can be influenced by various factors, including technological and environmental aspects, this study focused specifically on the social, cultural, and economic factors affecting latrine utilization in the region. The research relied primarily on data collected during the study period, meaning that any potential changes in policies, technologies, or socio-economic conditions occurring after the research period may not be reflected in the findings.

## CHAPTER TWO: LITERATURE REVIEW

### 2.0 Introduction

This chapter provides an overview of latrine utilization, reviews empirical literature on the social, cultural, and economic factors influencing its use, discusses the theoretical framework, identifies research gaps, and presents the study's conceptual framework.

### 2.1 Overview of Latrine utilization

Globally, access to improved sanitation continues to present a significant public health challenge, especially in low- and middle-income countries. An estimated 3.5 billion people still lack access to safely managed sanitation services, while approximately 419 million people continue to practice open defecation, primarily in sub-Saharan Africa and South Asia (WHO & UNICEF, 2023). Despite decades of progress in latrine construction and sanitation programming, the world remains far from achieving universal sanitation coverage as envisioned under Sustainable

Development Goal (SDG) 6 (Rajapakse, Otoo, & Danso, 2023). While there has been success in increasing physical access to sanitation infrastructure, there is growing concern among global health experts and development actors regarding the substantial gap between latrine availability and actual utilization. This discrepancy has prompted a shift in focus toward not only “hardware” interventions such as construction but also “software” components like sanitation behavior change (Fagunwa et al., 2025). WHO and UNICEF recommend that sanitation interventions be designed not only to expand access but also to address cultural norms, community participation, and behavior reinforcement (WHO, 2023). This global context is essential for framing localized challenges and evaluating how global strategies align with realities on the ground.

Latrine utilization is commonly defined as the consistent and proper use of latrine facilities by all members of a household, including at night and during times of illness or water scarcity (Belete *et al.*, 2024; Ismail *et al.*, 2024). Temesgen *et al.*, (2021) defined as the use of the functional latrine, by all the family members (above 5 years) in the households, that own private latrine and no feces visible in the compound. Utilization extends beyond mere ownership or presence of a structure; it includes behavioral adoption, facility maintenance, and safe hygiene practices. Scholars often assess utilization using observational indicators such as visible footpaths, presence of feces, latrine cleanliness, and user reports (Weems, 2022; Yirdaw *et al.*, 2023). The distinction between latrine ownership and utilization is critically important, as it reveals a common flaw in many sanitation interventions infrastructure without ensuring sustained behavior change. Ultimately, latrine utilization reflects not just access, but deep-rooted perceptions, habits, and sociocultural dynamics.

Globally, substantial disparities exist between latrine coverage and actual use. According to the WHO/UNICEF Joint Monitoring Programme (JMP), as of 2021, only 50% of households in Southern Asia had access to and used safely managed sanitation services, despite widespread efforts to build infrastructure (WHO & UNICEF, 2023).

A study by Takhelchangbam *et al.* (2023) in rural India found that nearly 20% of households with latrines did not use them consistently, citing cultural taboos, poor maintenance, and fear of confined spaces as contributing factors. Similarly, Venkateswarlu (2019) reported that open defecation persisted in communities where latrines were technically available, revealing a gap between hardware provision and behavioral change. In Vietnam, a study by Le and Makarchev (2020) estimated latrine utilization at approximately 71%, indicating progress but still falling short of universal behavior adoption. The authors noted that

perceived cleanliness, user safety, and convenience strongly influenced daily use. However, authors also observed that sanitation programs often lacked post-construction follow-up, leading to neglect or improper usage over time. Non-utilization may contribute to the spread of fecal-oral diseases, increases child mortality, and weakens the effectiveness of public health investments. Despite growing recognition of this issue, findings may not be directly applicable to study area due to different geographical context.

In sub-Saharan Africa, the disparity between access to sanitation infrastructure and actual latrine utilization remains a persistent public health concern. According to WHO and UNICEF (2023), only 38% of the rural population had access to basic sanitation services in 2022 a modest increase from 23% in 2000. However, access does not necessarily translate into usage. A study by Nanyim et al. (2022) conducted in the Bole District of Ghana found that while 22.3% of respondents reported owning latrines, only 6.6% consistently used them. This stark difference reflects a common regional pattern where behavioral change has not kept pace with infrastructure development, thereby limiting the anticipated health and environmental benefits of sanitation programs.

Supporting this view, a meta-analysis by Atalay et al. (2025) revealed that the average latrine utilization rate across East African countries was 57.05%, though substantial variation existed within the region. Uganda reported the highest rate at 65.21%, followed by Ethiopia at 60.38%. Further disaggregation showed that urban households had slightly higher utilization rates (60.56%) than rural ones (55.42%), emphasizing the influence of spatial and structural factors. In a related study, Temesgen et al. (2021) assessed latrine utilization in Southern Ethiopia under Community-Led Total Sanitation and Hygiene (CLTSH) programs, finding that 65.8% of households used latrines regularly, with

proximity less than six meters from the household positively associated with use. Collectively, these findings affirm that improving sanitation outcomes in sub-Saharan Africa demands not only increased latrine coverage but also targeted strategies to foster behavioral adoption and long-term commitment to hygienic practices.

In Kenya, access to sanitation is recognized as a constitutional right and a foundational component of public health and human dignity. The country has enacted progressive frameworks such as the Kenya Environmental Sanitation and Hygiene Policy (KESHP 2016–2030), which aims to eliminate open defecation and ensure universal access to safe sanitation by 2030 (Ministry of Health, 2016). Additionally, the adoption of Community-Led Total Sanitation (CLTS) has been instrumental in mobilizing rural communities toward behavioral change.

However, despite these initiatives, regional disparities in latrine utilization persist, particularly in arid, semi-arid, and pastoralist counties such as Turkana, Marsabit, and Samburu. According to the Kenya National Bureau of Statistics (2022), only 36% of rural households in ASAL (Arid and Semi-Arid Lands) regions reported consistent latrine use compared to over 80% in central Kenya. Recent field studies in Marsabit County show that although CLTS has led to improvements in latrine coverage, many households still revert to open defecation due to entrenched cultural norms and seasonal mobility (Yusuf et al., 2024). This reveals a persistent implementation gap between policy aspirations and on-the-ground realities.

## **2.2 Influence of Social Factors in Latrine Utilization**

Social aspects such as societal networks, social stigma, norms, social support, information on benefits of toilets, and government policies have been explored in past studies by

Pakhtigian et al. (2022), Lopez et al. (2019), Chambers et al. (2021), De et al. (2021), Gauri et al. (2023), Patil (2019), Kwiringira et al. (2023), Mbemba (2022), Nunbogu et al. (2019), and Libby et al. (2020) that could have an influence on toilet usage.

The influence of social networks on latrine utilization has gained increasing attention within sanitation behavior research, especially in low- and middle-income countries (Pakhtigian et al., 2022; Lopez et al., 2019; Chambers et al., 2021). A study by Patil (2019) explored open defecation practices in rural India using social network analysis. The study findings revealed that individuals embedded in communities where toilet use was the norm were significantly more likely to adopt similar behaviors.

These results emphasized the role of perceived peer behavior and communal pressure in sanitation decision-making. Similar findings were submitted by Pakhtigian et al. (2022) in a study to examine policies and peer effects as drivers of household sanitation behaviors in rural India over 14 years period. The study established that while external interventions, such as subsidies and policies, are effective in increasing latrine adoption in the short term, sustained latrine use is largely influenced by neighbors' behaviors. Specifically, the study found that latrine use among neighboring women had a significant positive effect on the sanitation behaviors of both men and women, while latrine use by neighboring men showed small, imprecise effects on men's behaviors and no significant impact on women's behaviors. The study highlights the importance of social networks and the gendered dynamics of sanitation adoption, suggesting a gap in understanding the long-term sustainability of sanitation behaviors.

A qualitative study using social network analysis (SNA) was conducted by De et al. (2021) in rural India to explore the influence of reference networks and social norms on sanitation

behavior. The study found that sanitation norms were largely enforced through interpersonal influence rather than formal policy. Community members were more likely to adopt latrine use if their reference network (family, neighbors, local leaders) visibly practiced and supported it. Social approval and fear of exclusion were strong behavioral drivers. Women emerged as central nodes in these influence networks, especially in enforcing hygiene within households.

Additionally, a quantitative study conducted by Lopez et al. (2019) in rural coastal Ecuador to identify the determinants of latrine use behavior, focusing on the psychosocial proxies of individual-level defecation practices, revealed that psychosocial factors, such as perceived social pressure and individual attitudes towards hygiene, significantly influence latrine use. The study found that individuals with stronger community ties and those who perceived sanitation as a social norm were more likely to use latrines. However, economic barriers and lack of awareness were identified as key limitations, preventing some households from adopting regular latrine use. Lopez et al. (2019) alluded that while social influence played a key role, it was less effective in households with lower social capital. Similarly, a mixed method a study by Chambers et al. (2021) in Ethiopia to examined the drivers of sustained sanitation access in the aftermath of flooding disasters, focusing on social network and demographic predictors of latrine reconstruction, found that that social network, particularly neighborhood ties and community support, were key factors influencing the reconstruction of latrines after disasters. Additionally, demographic factors such as age, household income, and education were significant predictors of whether households rebuilt latrines.

A qualitative study was conducted by Kwirengira et al. (2023) in Kampala slums, Uganda to investigated why social networks in urban slums fail to foster neighborhood development,

particularly through the lens of sanitation practices. The study found out that despite physical proximity, slum residents had weak or transactional social ties, limiting collective ownership and cooperation in maintaining sanitation infrastructure. The study highlighted that economic vulnerability and mistrust overshadowed communal values, leading to poor latrine management.

The study called for further research into strategies that build trust and functional social capital in informal settlements. In the same line, a study by Mbemba (2022) in Mzimba District, Malawi to examined the influence of social networks on behavioral change and the promotion of basic sanitation services, recorded that strong social networks facilitated information flow and behavior modeling, positively influencing the uptake of sanitation technologies such as improved latrines Peer influence, particularly from local leaders and early adopters, significantly enhanced community-wide behavior change. Additionally, collective discussions and peer comparisons were more effective than top-down messages from authorities. Futhermore, Nunbogu, Harter, and Mosler (2019) investigated the factors influencing latrine completion and consistent latrine use following a Community-Led Total Sanitation (CLTS) intervention in northern Ghana, and found that Households influenced by social expectations and community approval were more likely to complete and use latrines. Additionally, those perceiving sanitation as a community standard had higher compliance.

Existing research underscores the significance of perceived benefits and awareness in promoting latrine utilization. Kanda et al. (2022) investigated long-term use of Blair ventilated improved pit latrines in rural Zimbabwe, showing that perceived health benefits, privacy, and odor control were key enablers. Yet, poor maintenance, cost, and intergenerational knowledge gaps impeded sustained usage. Complementing this,

Talat et al. (2023) developed a behavior change intervention in rural India that emphasized emotional and functional benefits such as safety, convenience, and pride. Talat et al. (2023) mixed-methods study found that households exposed to awareness tools were significantly more likely to use latrines. Perceived emotional and physical gains combined with targeted knowledge amplified behavior change. Still, barriers like water access and cultural inertia reduced effectiveness, pointing to the need for tailored awareness strategies. While both studies affirm the power of perceived benefits and awareness, they are rooted in stable, agrarian communities. Their relevance to mobile, pastoralist populations like those in Laisamis Sub-County remains uncertain, especially where infrastructure and cultural dynamics differ substantially

Theoretical perspectives further deepen this understanding. Ejigu and Yeshitela (2024) applied the Diffusion of Innovation and Theory of Planned Behavior to explore ecosan toilet adoption in Ethiopia. The study found that perceived relative advantage, compatibility, and awareness (through observability and social norms) strongly shaped positive attitudes and behavioral intention. A study in Panama by Libby et al. (2020) focused on pit latrine perceptions in indigenous communities and found that visible cleanliness, fear of contamination, and social stigma influenced sanitation behavior.

The study findings highlight the emotional and cognitive dimensions of sanitation use. While these models provide strong conceptual clarity, empirical evidence remains sparse in pastoralist, low-infrastructure settings such as Laisamis. There is little understanding of how awareness and perceived utility of latrines interact with cultural mobility, resource access, and localized belief systems

A growing body of research demonstrates that behavioral determinants particularly those tied to social norms, perceptions of cleanliness, and psychosocial motivations significantly shape sanitation practice. Friedrich et al. (2020) explored sanitation behavior in rural India and found that latrine use was strongly influenced by perceptions of cleanliness, fear of disease, and social expectations. Among these, social norms beliefs about what others do and approve of were particularly influential.

The study emphasized that community perceptions of latrine use as a sign of respectability significantly motivated behavioral change. Similarly, Tamene and Afework (2021), in a study conducted in rural Ethiopia, reported that latrine adoption was constrained by both environmental factors and deep-rooted cultural attitudes. Traditional beliefs, including taboos around sanitation and skepticism toward modern facilities, hindered utilization despite awareness of health benefits. Both studies underscore the pivotal role that social norms and collective attitudes play in shaping sanitation practices. However, a notable gap remains in understanding how social norms operate in pastoralist and nomadic communities, where social cohesion, mobility, and traditional authority structures differ substantially from agrarian settings.

A study Babbar et al. (2023) investigated the role of social norms in shaping women's public toilet usage in India, highlighting the power of perceived community expectations. Using an experimental vignette design across multiple regions, the study found that both empirical expectations (what others do) and normative expectations (what others think one should do) significantly influenced women's intentions to use public toilets alone. The results revealed that when women believed toilet use was socially accepted and commonly practiced, their willingness to engage in the behavior increased, suggesting that sanitation

choices are deeply embedded in social context. Similarly, Golla et al. (2023) examined factors influencing latrine utilization in rural Ethiopia using the RANAS framework.

Their study found that injunctive norms perceptions of what is socially approved alongside personal confidence (self-efficacy) and behavioral planning, were major predictors of regular latrine use. This aligns with findings by Nastiti et al. (2025), who studied sanitation behavior in rural Indonesia. They reported that internal psychosocial factors such as emotional connection to cleanliness, personal commitment, and habit memory had stronger influence on latrine use than external factors like socioeconomic status or infrastructure access. Collectively, these studies demonstrate that sanitation behavior is not merely a function of access or knowledge but is powerfully shaped by social reinforcement, internal motivation, and perceived norms. However, much of this evidence is drawn from relatively stable or semi-urban communities where infrastructure exists and social structures are less fluid.

Studies by De Shay et al. (2020) and Tiwari et al. (2022) emphasize the critical role of social norms in shaping latrine adoption and use. In rural Odisha, De Shay et al. (2020) evaluated a multilevel sanitation behavior change intervention and found that latrine use evolved from being a private matter to a publicly reinforced community norm. Participatory activities such as the “palla” performance and “transect walk” promoted collective reflection and social pressure by invoking feelings of shame around open defecation. Latrine ownership was redefined as a symbol of dignity, social status, and modernity. Participants expressed pride in owning latrines and concern about how others viewed them, indicating that peer influence and community perceptions significantly shaped sanitation behavior.

Similarly, Tiwari et al. (2022), through a quantitative analysis of national survey data, found that sanitation infrastructure choices were not driven solely by affordability but also by social aspirations and symbolic value. Educated household heads and newly married couples were more likely to invest in improved toilet types, associating them with modern living and respectability. Cultural beliefs and caste dynamics further influenced sanitation preferences, reinforcing the deeply social nature of latrine decisions. However, both studies are grounded in South Asian contexts. A significant research gap remains in exploring how social norms, symbolic meanings, and dignity-based motivations influence latrine utilization in arid, pastoralist regions.

Past studies have demonstrated that social stigma could profoundly shape latrine use, especially among marginalized populations, including women and people with disabilities. A qualitative study conducted by Gauri et al. (2023) investigating rural sanitation uptake under India's Clean India Mission, highlighting how deep-rooted social stigma profoundly influenced latrine use. The study was based on in-depth interviews and field observations, revealed that open defecation was often associated with shame, embarrassment, and social disgrace, especially for women.

The perception of moral failure or lack of hygiene invited community judgment, which in turn drove behavior change. Similarly, Vogel, et al. (2022) applied social influence models in sanitation campaigns across South and Southeast Asia. Using behavioral experiments and ethnographic methods, they found that individuals were more likely to adopt latrine use when they feared negative social evaluation, such as being labeled "dirty" or "uncivilized." These findings underscore that sanitation choices are not merely functional but are heavily shaped by social expectations and emotional triggers, particularly the fear of social

exclusion. Both studies demonstrate that stigma operates as a powerful motivator for behavioral change but also caution against coercive or shaming approaches that may backfire. While these studies explore stigma in sanitation broadly, they do not address how stigma operates in remote, pastoralist settings a gap that this study intends to fill by contextualizing stigma within Laisamis Sub-County.

A study by Getahun et al. (2022) explored latrine access among people with physical disabilities in Northeast Ethiopia using a mixed-methods design. Only 22% of respondents had access to suitable latrines, and over half reported social stigma, exclusion from family latrine use, or verbal harassment. Socioeconomic status and knowledge were significant predictors. Similarly, Ukpabi (2024), through surveys and interviews in Southeast Nigeria, found that open defecation led to shame, gender-based violence, and health issues.

Over 69% of respondents believed open defecation endangered women, particularly at night. Social humiliation, especially for women seen defecating openly, emerged as a strong disincentive. Patkar (2020), a foundational figure in gender and WASH discourse, emphasized that beyond infrastructure, internalized stigma, lack of agency, and patriarchal control limit sanitation access for women and girls. Her work, rooted in participatory action research across South Asia and Africa, underscores the importance of community engagement and social norm transformation in sanitation projects. While these studies illuminate the gendered and disability-related challenges in sanitation, they primarily focus on urban or peri-urban areas or singular population groups.

Several studies have illustrated that community-based approaches are critical for the long-term success of sanitation and hygiene interventions (Lenai et al., 2021; Mutreja, 2020;). Lenai, Mabonga, and Mateyo (2021) conducted a study in Butere Sub-County, Kenya,

assessing the factors that contribute to the sustainability of Open Defecation Free (ODF) status. The authors emphasized that community support, primarily through local leaders and health workers, was crucial in ensuring continuous latrine use and hygiene practices.

The study found that communities that actively engaged in social mobilization and peer support exhibited greater adherence to sanitation standards. The authors suggest that local health programs and community dialogues should be maintained and strengthened to ensure that sanitation behaviors are not only adopted but sustained over time. Similarly, Mutreja (2020) examined the impact of participatory approaches in Uganda, focusing on how community-driven interventions influence latrine use and hygiene behaviors. The study found that involving local stakeholders such as health workers and community leaders ensured that sanitation solutions were culturally relevant and context-specific, thus increasing their effectiveness.

In a similar vein, Vigh, Elbers, and Gunning (2020) investigated the effectiveness of community-based sanitation interventions in Mozambique, emphasizing the importance of local stakeholders in shaping sanitation outcomes. The research underscores the role of community engagement and local leadership in behavioral change interventions. The study findings suggest that integrating local customs and community-driven solutions enhances the likelihood of sustained sanitation practices. This supports the notion that community participation is crucial for the long-term success of sanitation projects. Additionally, a study by Asnake and Adane (2020) to examined household latrine utilization in semi-urban areas of northeastern Ethiopia, revealed a 71.8% latrine utilization rate.

The study noted that households receiving regular sanitation messages and support from community health personnel were significantly more likely to use latrines consistently.

While studies by Vigh et al. (2020), Mutreja (2020) and Lenai et al. (2021) emphasize that community-based approaches, when tailored to local contexts, are key to the success of latrine utilization programs. However, there remains a gap in research regarding the specific challenges and influences in more rural and marginalized areas.

Studies by Rodrigues et al. (2022), Chikozho et al. (2019), Mehrotra (2021), and Friedrich et al. (2019) have reported that government policies may affect sanitation practices. Rodrigues et al. (2022) explored Brazil's semi-arid rural sanitation landscape, revealing that while national frameworks like Plano Nacional de Saneamento Básico" (PLANSAB) exist, implementation was hindered by political fragmentation, underfunding, and lack of localized planning.

Public policy awareness was limited, and government efforts often failed to account for regional vulnerabilities. Similarly, Chikozho et al. (2019) examined sanitation trends in Nairobi's slums, showing modest improvements in sanitation access but a decline in clean water services. The study analysis highlighted that while policy intent existed, weak infrastructure investment and poor coordination excluded slum populations from sustained benefits. Both studies expose a disconnect between sanitation policies and their practical, inclusive implementation. The authors emphasize the need for integrative planning and local engagement to prevent vulnerable groups from being "left behind" in sanitation development agendas.

In contrast, Mehrotra (2021) and Friedrich et al. (2019) document more positive outcomes when government policies are backed by robust behavior change communication and local implementation support. Mehrotra (2021) evaluated India's Swachh Bharat Abhiyan campaign, which achieved massive toilet construction and high public awareness. Key to its

success was persistent behavior change communication (BCC), community engagement, and decentralized governance.

Likewise, Friedrich et al. (2019) applied the RANAS model in Karnataka, India, noting a significant increase in latrine use following government-supported behavior change interventions. The study underscored the importance of normative beliefs and personal attitudes, which were effectively influenced through locally supported campaigns. Both studies demonstrate that when policies are not just enacted but actively promoted and supported at the grassroots, they lead to meaningful improvements in sanitation behavior. However, a gap exists in examining how government policies influence latrine utilization in remote, arid, and pastoralist settings.

### **2.3 Influence of Cultural Factors in Latrine Utilization**

Several studies across sub-Saharan Africa and South Asia have explored these dynamics, highlighting how taboos, gender norms, and spiritual beliefs could act as persistent barriers to latrine use (Kipngeno et al., 2024; Adjibolosoo et al., 2020; Nkatha et al., 2020; Nagla, 2020). A study by Adjibolosoo et al. (2020) in rural Ghana focused on understanding the influence of cultural taboos on latrine utilization and found that cultural taboos and traditional views on hygiene were significant barriers to latrine use.

The study revealed that open defecation was widely practiced in rural areas due to the belief that latrines were unclean or harmful, particularly for women and children. The authors argued that improving sanitation knowledge alone would not be sufficient to overcome cultural barriers, emphasizing the need for community-based interventions that take these beliefs into account. Similarly, a study by Kipngeno et al. (2024) in Nakuru Town West Slums, Kenya, aimed to investigate how social-cultural factors influence the management of

shared sanitation, revealed that cultural beliefs, particularly privacy concerns and gender-based taboos, strongly influenced the use of communal latrines. The found that men were often reluctant to share latrines with women due to societal norms regarding decency, which led to the practice of open defecation. These taboos, combined with a lack of adequate maintenance of shared facilities, resulted in poor sanitation outcomes.

A study by Nkatha et al. (2020) in Meru, Kenya to determine social-cultural factors play a significant role in influencing sanitation practices and latrine usage. The study found that cultural taboos surrounding the use of pit latrines were a major obstacle to their adoption, particularly among men. Men, especially the circumcised youth, were reluctant to use shared latrines due to cultural norms that prevent. Similarly, a study by Nagla (2020) examines the critical issue of sanitation in India, focusing on how cultural beliefs and practices influence sanitation behaviors, particularly the persistent preference for open defecation. The study found that cultural norms and practices are major determinants of sanitation behavior in India, with open defecation being widely practiced due to traditional beliefs. Many people perceive open defecation as an acceptable practice due to cultural taboos and ritual beliefs surrounding cleanliness.

Cultural barriers to latrine usage remain a significant public health challenge in low-income settings as submitted by Eliud et al. (2022), Kefeni and Yallew (2018), Godana and Mengistie (2017), Aiemyoy et al. (2017), and Belete et al. (2024). A study by Eliud et al. (2022) assessed the influence of cultural factors on latrine adoption in Nzau Sub-County, Makueni County, found that cultural norms related to gender roles significantly shaped latrine use. Women were often reluctant to use latrines due to cultural associations with impurity and discomfort. This is echoed in Kefeni and Yallew's (2018) study, which

identified gendered sanitation norms in Addis Ababa, Ethiopia, where women, particularly in informal settlements, expressed discomfort with communal latrines due to issues with privacy, cleanliness, and odor.

Both studies reveal that cultural beliefs about cleanliness and privacy were crucial in determining whether latrines were used, with gender playing a pivotal role. However, none of these studies have fully explored the potential role of cultural diversity and regional variations, such as those found in Laisamis Sub-County, Marsabit, Kenya, where different ethnic groups and pastoralist traditions may create unique sanitation barriers.

A study by Godana and Mengistie (2017) in the Kebeles of Dirashe district, Southern Ethiopia to explore the impact of cultural beliefs on latrine usage, highlighted how cultural taboos, such as beliefs about the rituals surrounding defecation, prevented widespread latrine adoption. The fear of faeces being linked to witchcraft or spiritual impurity further entrenched open defecation practices. Similarly, Aiemjoy et al. (2017) focused on rural communities in the Amhara region of Ethiopia and found that cultural norms surrounding defecation (e.g., the belief that defecating outdoors was more “natural” or culturally acceptable) were a major barrier to latrine use.

In their study, women’s reluctance to use latrines was attributed to fear and disgust related to latrine design, particularly the lack of privacy and unpleasant smells, which were perceived as culturally inappropriate. Belete et al. (2024) further reinforces this narrative in the Babelle Woreda, Somali region, where semi-nomadic pastoralism and clan ties influenced latrine adoption. In their study, pastoralists were found to have a significantly lower rate of latrine adoption due to their mobile lifestyle, which deprioritized the need for permanent sanitation infrastructure. The study also revealed that households headed by women were more likely

to adopt latrines, which challenges the conventional view that female-headed households in pastoral communities lack the capacity to build latrines.

However, the study found that latrine usage was still low, with cultural perceptions about the latrine as a “house of evil spirits” at night preventing children and the elderly from using them during nighttime, leading to continued open defecation. Despite numerous studies examining cultural barriers to latrine usage in rural Ethiopia and other East African settings, there is limited research that explores the unique intersection of pastoralist mobility, religious practices, and sanitation behaviors in study area.

Cultural beliefs remain a significant determinant of sanitation behavior and latrine utilization across diverse communities. Nanyim et al. (2024) conducted a cross-sectional study in Bole District, Ghana, examining socio-cultural and economic factors influencing sanitation. The study found low latrine ownership (22.3%) and utilization (6.6%), largely due to persistent cultural taboos and social norms. Beliefs about spiritual contamination, the honors ancestors of elders, and the inappropriateness of mixing male and female feces contributed to open defecation (OD) practices.

While awareness of sanitation had improved, deeply rooted customs continued to limit latrine adoption, especially in traditional households. Similarly, Busienei et al. (2019) investigated the socio-cultural factors influencing open defecation (OD) in Lodwar, Turkana County, Kenya, using mixed methods. The authors reported that over 70% of residents practiced OD, not because of infrastructure deficits, but due to spiritual beliefs and social taboos. Community members viewed latrines as inappropriate because they required the mixing of sacred male and female waste. The study also found a strong cultural association of OD with purity and naturalness, where the bush was considered a spiritually clean

environment. Soboksa et al. (2021) focused on child feces disposal in CLTS-implemented areas in Jimma, Ethiopia. Despite improved access to latrines, 35.7% of child feces were unsafely disposed of due to the common belief that children's waste is harmless.

This belief undermined sanitation progress and highlighted a knowledge gap that general hygiene education fails to address without culturally tailored interventions. Broadening the lens, Coffey et al. (2014) provided compelling evidence from rural North India that open defecation is a “revealed preference” rather than a mere infrastructural deficit. Many households with functional latrines continued practicing OD due to strong beliefs in ritual purity and spatial separation of pollution. Latrines built close to homes were perceived as spiritually degrading. Consequently, national sanitation schemes that focused solely on hardware provision were ineffective without addressing the symbolic and cultural meanings attached to defecation

In India, Stopnitzky (2020) established that construction of latrines was mandatory for males' households who wished to acquire a bride. The study showed that men could not marry without first constructing a latrine, a practice which saw an increase in adoption of toilet use by 21%. Adoption and use of toilet facilities could eliminate exposure of people to sanitation-related infections. Although traditions in India spearheaded construction of sanitation facilities, the situation in Kenya was different. A study by Wasonga et al. (2022) in Kenya found out that latrines were set apart for men and women and that each household was required to have a separate toilet for in-laws. Mixing of faeces for in-laws in a single toilet was a taboo. Separation of toilets for family members could however be quite expensive for the families.

The study further established that when toilet facilities were not readily available, respondents defecated in holes around the households especially at night. Improperly disposed human faeces could be breeding sites for diarrheal pathogens which are ferried to the rivers during rainy seasons causing water contamination. Consumption of such contaminated water could result in water-borne diseases such as dysentery. Although such findings were reported in Kenya, different communities could have different traditions which affect toilet use. The study explored the beliefs and traditions surrounding sanitation practices among communities within the study area.

In Indonesia, a study by Dwipayanti et al. (2021) that explored the local values related to sanitation uptake established that latrine construction near households could cause misfortunes. Such misfortunes were associated with certain spirits believed to reside near homes. The study also found out that traditional healers associated the cause of diarrheal diseases to unseen supernatural beings. Although religious values should be respected, some could encourage ignorance of responsibilities in sanitation and promote poor excreta management. In South Africa, Vyas and Spears (2022) found out that Hindus defecated in the open due to the rituals of purity which considered latrine construction near homes as a source of pollution.

Failure to accept and make use of the available toilets may result in inefficient excreta management which could facilitate serious public health and environmental consequences. In his study, Leong (2020) identified deeply rooted beliefs and taboos surrounding open defecation and how they influence latrine utilization this study elaborates how some communities relate open defecation with religious rituals and assume open defecation as culturally accepted. Moreover, another research conducted by Elhanur (2022) in Indonesia

highlighted the role of community elders and local leaders as cultural influencers. In communities that have made open defecation a norm, the research showed that when community leaders are involved in sanitation intervention there is more latrine adoption and utilization.

#### **2.4 Influence of Economic Factors in Latrine Utilization**

The collective findings from Woyessa et al. (2022), Omer et al. (2022), Ahmed and Ali (2024), Meili et al. (2022) and Bankole et al. (2023) offer consistent and empirically grounded support for the conclusion that income level could moderately influence latrine construction, maintenance, and utilization. Woyessa et al. (2022) examined latrine utilization in Community-Led Total Sanitation and Hygiene (CLTSH)-implemented kebeles in the Gurage zone of Ethiopia.

The study findings revealed that while financial status significantly influenced the likelihood of owning a functional latrine, utilization rates were also strongly affected by behavioral and contextual variables such as latrine cleanliness, proximity, and presence of school-aged children. Income enhanced access, but behavioral and environmental factors shaped continued use. Omer et al. (2022), in a study from Takussa District, Northwest Ethiopia to investigate utilization of latrine and associated factors among rural households, echoed this sentiment. While over 50% of latrines had been in service for four or more years, only 41.9% of households reported consistent usage. Income indirectly influenced latrine quality and upkeep, particularly when households struggled with repairs and material affordability. Yet, other significant variables such as educational status and cleanliness were better predictors of use, suggesting income's influence is meaningful but moderate. Although income is repeatedly shown to shape latrine access and quality, there remains limited insight

into how economic capacity interacts with mobility, cultural norms, and environmental harshness in study area

The study by Ahmed and Ali (2024) provided a large-scale national perspective using Somalia's Health Demographic Survey (2020).

The study results demonstrated that households in the richest quintile were 7.8 times more likely to use improved latrines than those in the poorest. Still, disparities between urban and rural households, education levels, and infrastructure access also strongly influenced utilization patterns. Importantly, authors conclusion emphasized that raising income alone will not ensure improved sanitation targeted awareness and institutional support are equally critical. The study by Meili et al. (2022) extended the discussion to urban contexts across Kenya, Ghana, and Bangladesh.

They found that while income levels strongly predicted access to improved sanitation, the quality and maintenance of these services were more closely tied to management practices and community engagement. Poor households were more likely to rely on shared, deteriorated facilities, but even wealthier communities experienced challenges when behavioral or institutional frameworks were weak.

Additionally, Bankole et al. (2023) studied sanitation across three income levels and found a predictable gradient higher-income areas had better coverage. However, they reported that behavioral attitudes, institutional regulation, and cultural factors often negated the advantages conferred by wealth. A study by Nyamusi (2021) to examined the influence of socio-economic factors on household utilization of improved sanitation facilities in Kenya, using 2018 Kenya Integrated Household Budget Survey (KIHBS), submitted that household income had a statistically significant impact on access to improved sanitation, with low-

income households disproportionately lacking such facilities. While Woyessa *et al.* (2022), Omer *et al.* (2022), Ahmed and Ali (2024), Meili *et al.* (2022), and Bankole *et al.* (2023) confirm income as a structural enabler of sanitation access, findings also highlight its limitations in ensuring sustainable utilization. However, there is a lack of context-specific analysis on how income interacts with deeply embedded pastoralist lifestyles, seasonal mobility, and infrastructural isolation.

Past studies have demonstrated that pastoralism could poses complex and persistent challenges to latrine adoption and utilization (Barasa & Waldman, 2022, Nyanza et al., 2018; Belete et al., 2024). Barasa and Waldman (2022) investigated sanitation and hygiene practices in pastoralist communities in Northern Tanzania and found that mobility discouraged investment in latrines. Cultural attitudes and ecological instability (e.g., shifting soils) contributed to the degradation of existing structures. Similarly, a study by Nyanza et al. (2018) conducted in the Ngorongoro Conservation Area assessed access and utilization of water and sanitation facilities, found that over half of the participants practiced open defecation. Latrine ownership was significantly associated with higher socioeconomic status, fewer children under five, and prior sanitation education. Despite semi-permanent settlements, long distances to access construction materials, low motivation, and limited health education emerged as key constraints to latrine construction and use.

Additionally, Belete et al. (2024) provide a parallel narrative from Eastern Ethiopia's Somali region, where 59.5% of surveyed households had latrines, but only 29.2% reported consistent use. While higher-income households adopted latrines more, consistent use was surprisingly greater among lower-income and female-headed households. Pastoralist mobility again appeared as an indirect barrier. Cultural taboos, such as the belief that latrines

attract evil spirits, limited nighttime use, especially among vulnerable groups. While the studies by Barasa & Waldman (2022), Nyanza et al. (2018), and Belete et al. (2024) highlight the broad challenges pastoralism poses to sanitation, findings may not be directly transferable to Laisamis Sub-County due to its unique sociocultural norms and ecological conditions.

Studies conducted across Sub-Saharan Africa and parts of South Asia consistently show that although Community-Led Total Sanitation (CLTS) can improve initial latrine adoption, economic limitations could inhibit sustained use, maintenance, and upgrades of sanitation infrastructure (Kouassi et al., 2023; Wasonga et al., 2023; Ahmed & Ali, 2024).

A study by Gitonga et al. (2024) in Imenti North Sub County, Kenya aimed to examine socio-economic factors influencing latrine use, revealed that 22.2% of households identified financial constraints as a major barrier to latrine ownership and maintenance. Although 77.8% of households used personal resources to construct latrines, many could not afford repairs or upgrades. Furthermore, more than half of the respondents were not formally employed, highlighting the role of household income in sanitation uptake.

Even when awareness about the health benefits of latrines was high, the lack of funds led to inadequate or unhygienic facilities. In agreement, Ajemu et al. (2020) conducted a community-based cross-sectional study in Tigray, Northern Ethiopia, to identify the determinants of latrine ownership in rural villages. They found that only 35.7% of households owned latrines, and financial incapacity was a leading barrier, especially in households that had previously constructed latrines but could not afford reconstruction after structural collapse. Notably, 68.8% of demolished latrines were not replaced due to lack of funds, and 85.2% lacked handwashing facilities indicating a broader affordability problem.

Employment, home ownership, and exposure to health education significantly influenced ownership rates.

Kouassi et al. (2023) conducted a multi-country study across 10 African nations to assess the sustainability of latrines built under CLTS and the transition from basic to safe sanitation.

The findings revealed that 65% of sanitation facilities were not structurally sound or hygienically adequate, largely because households could not afford to improve or maintain the latrines. The study emphasized the necessity of financial subsidies, low-cost technologies, and post-implementation support for durable sanitation outcomes. In the similar vein Ahmed and Ali (2024), using data from 2020 Somalia's national Health Demographic Survey (SHDS), sought to assess the prevalence and determinants of household access to improved latrine utilization across Somalia.

The study found that only 17% of the poorest households accessed improved sanitation compared to 75.9% of the wealthiest. Financial barriers were compounded by disparities in education, urban-rural residence, and regional investment, with rural and low-income populations facing the most acute sanitation access challenges. Furthermore, Wasonga et al. (2023) conducted a follow-up study in Siaya County, Kenya, to assess the impact of CLTS boosting interventions and household factors on latrine ownership. The study revealed a strong association between wealth and latrine ownership. Even after "boosting" efforts, the poorest groups remained significantly disadvantaged due to the cost of materials and inability to afford labor, tools, or repairs demonstrating that CLTS without financial support leads to inequitable outcomes.

Studies by Peletz et al. (2021), Tiwari et al. (2022), Scott et al. (2019), Hoo et al. (2022), and Doe and Aboagye (2022) have revealed that economic hardship and competing

household priorities could hinder investments in sanitation infrastructure, particularly latrines, across low-income and informal settlements. Peletz et al. (2021) conducted an experimental demand trial in Nakuru, Kenya, revealing that although 90% of households claimed willingness to pay for a heavily subsidized, high-quality latrine, only 10% actually redeemed the offer.

The study attributes this gap to the lack of available cash and competing financial needs such as school fees and food. Even flexible payment plans failed to incentivize uptake. Similarly, Tiwari et al. (2022) highlight how household decisions in India regarding sanitation infrastructure are strongly income-dependent.

Their study found that lower-income families prioritize basic survival needs like food and shelter over sanitation, often leading to the use of shared or unimproved facilities. In the same line, Doe and Aboagye (2022), focusing on slums in Kumasi, Ghana, argue that subsidies are essential for sanitation equity. Households often recognize the value of latrines but still deprioritize them due to irregular income and pressing basic needs. Without public investment or donor support, sanitation in these areas remains unaffordable. Adding to this, Hoo et al. (2022) demonstrate that poverty-targeted subsidies, when paired with sanitation marketing, have a synergistic effect in increasing latrine purchases in rural Cambodia. Households exposed to both strategies were significantly more likely to invest in sanitation than those exposed to only one. This reinforces the idea that behavioral nudges alone are insufficient in poverty contexts; financial barriers must be directly addressed.

Studies by Cagnet (2022), Jha and Jha (2019), and Birasa et al. (2024) have explored the influence of legal enforcement on latrine utilization and collectively indicate that while enforcement may play a role, it is insufficient on its own to sustain Open Defecation-Free

(ODF) behavior. Cagnet (2022) investigated ODF sustainability in Uganda and found that while legal directives existed, their long-term impact was minimal unless accompanied by robust community engagement and behavioral change programs.

The study emphasized the importance of participatory approaches, peer influence, and health education as more enduring motivators than legal threats. Similarly, Jha and Jha (2019), studying ODF practices in Mahottari District, Nepal, found that although many households had toilets, only 1.8% used them regularly. The low utilization was attributed not to a lack of law enforcement, but to deeply rooted habits, cultural norms, and lack of awareness.

Their findings reinforced that sustainable sanitation requires a change in mindset, not just infrastructure or legal deterrents. Additionally, Pakhtigian et al. (2022) analyzed long-term latrine use in rural India and concluded that peer influence and normative behavior were more powerful than any form of top-down enforcement. While infrastructure policies initially triggered latrine construction, sustained usage only occurred in contexts where community members believed others were also consistently using latrines. Enforcement and punitive measures sometimes led to superficial behavior using latrines only during inspections without genuine behavioral adoption.

## **2.5 Theoretical Framework**

This study was guided by the Health Belief Model (HBM), and Social Cognitive Theory (SCT). These frameworks help explain how individual beliefs, social learning, and readiness for change influence health-related behaviors including latrine utilization

The Health Belief Model (HBM) was developed by Rosenstock in 1974 to understand health behaviors, particularly the adoption of preventive health actions. The HBM posits that individuals are more likely to engage in health-promoting behaviors if they perceive

themselves as susceptible to a health problem (susceptibility), believe the health problem has serious consequences (severity), believe taking a specific action would reduce their risk (benefits), and believe they can successfully perform the recommended behavior (self-efficacy) as depicted as in Figure 2.1. The model emphasizes how individuals' perceptions of their health risks influence their decision to adopt preventive actions (Laranjo, 2016). In the context of sanitation, this model can be used to assess how perceptions of sanitation-related diseases like cholera or diarrhea influence latrine adoption and use.

Several studies have applied the Health Belief Model to understand health behaviors related to sanitation and hygiene. Ogwezzy-Ndisika and Orivri (2023) applied the Health Belief Model to explore WASH (water, sanitation, and hygiene) practices among mothers in Lagos urban slums. The study found that mothers' perceptions of health risks and benefits were key in influencing their sanitation behaviors, including latrine use.

This study highlights how the Health Belief Model can effectively explain behavior change in sanitation practices, as individuals who perceive higher risks from poor sanitation are more likely to adopt improved hygiene practices. Bamashmous and Alagili (2021) applied the Health Belief Model to analyze COVID-19 prevention practices.

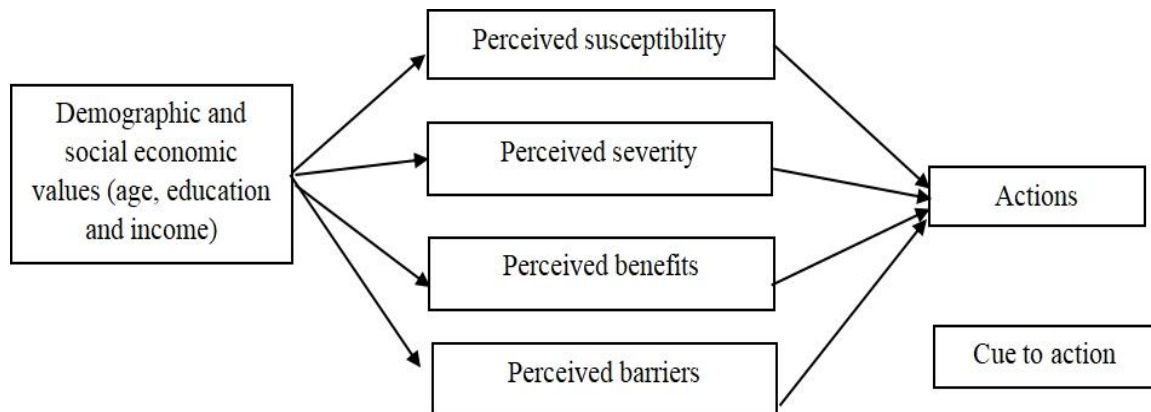
The study found that individuals' perceptions of health risks associated with COVID-19 significantly influenced their adoption of preventive behaviors like mask-wearing and hand hygiene. The findings underscore the model's applicability in motivating people to take health-promoting actions, which could also be applied to understanding sanitation behaviors, such as the use of latrines in rural or underserved areas. Similarly, used the HBM to examine how psychological factors, such as individuals' perceptions of health risks, influenced latrine ownership and consistent use in rural Ethiopia. The study found that individuals who

perceived a higher susceptibility to sanitation-related health issues, such as diarrhea, and those who saw the benefits of latrine use in reducing health risks, were more likely to own and consistently use latrines.

The Health Belief Model is particularly suitable for this study in Laisamis Sub-County, Kenya, as it can help assess how individuals' perceptions of the health risks associated with poor sanitation affect their decision to adopt latrines. For example, the model can be used to identify perceived barriers to latrine use, such as cultural beliefs, economic challenges, and accessibility issues. Additionally, understanding the perceived benefits of latrine adoption, such as improved health and dignity, can be instrumental in encouraging behavior change.

**Figure 2.1:**

*Health belief model (HBM)*



**Source:** (Hamza Alhamad, 2022)

The theory of Social Cognitive Theory (SCT) was developed by Albert Bandura in 1986. The SCT focuses on observational learning, self-efficacy, and the role of social influence in shaping human behavior. SCT posits that people do not learn only from their own experiences but also by observing the actions and outcomes of others' behaviors (Riungu, 2018). Bandura suggests that behavior is shaped by a dynamic interplay between personal

factors, behavior, and the environment, a concept known as reciprocal determinism. This theory emphasizes that individuals are more likely to adopt behaviors if they observe others successfully engaging in those behaviors and if they believe they can replicate those actions themselves (self-efficacy).

#### Social Cognitive

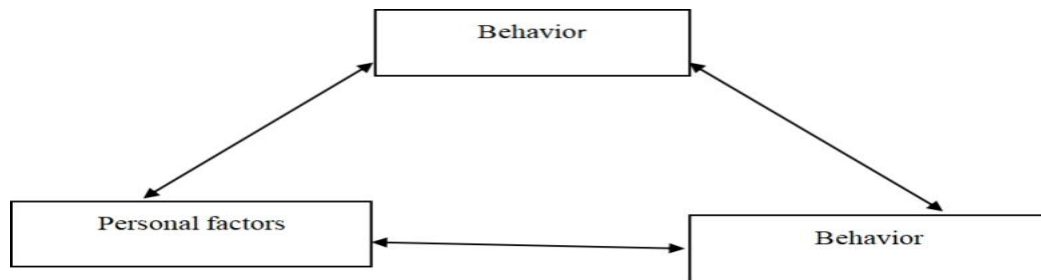
Theory (SCT) have been be applied to investigate the factors influencing toileting behaviors, including personal, environmental, and behavioral aspects. Hebert-Beirne et al. (2021) applied SCT to understand toileting behavior among adolescent and adult women in the United States. Using a qualitative framework, the researchers explored how social norms, observational learning, and interpersonal influences shaped women's decisions about when, where, and how to use toilets. The study revealed that social stigma, role modeling by family members, and social feedback (both implicit and explicit) play significant roles in shaping toileting behaviors. This work strongly supports the relevance of SCT in sanitation behavior studies by showing that sanitation habits are not purely individual decisions but are significantly affected by social interactions and norms.

Social Cognitive Theory is particularly relevant for this study on latrine utilization in Laisamis Sub-County, Marsabit, Kenya, where social and cultural norms strongly shape community behaviors. Given that many behaviors in pastoralist societies are learned through communal observation and shared customs, SCT offers a robust framework for understanding how sanitation behaviors spread within communities. The theory could help the study, to analyze how role models (e.g., community elders, health workers) influence sanitation behavior; understand the role of self-efficacy in motivating individuals to construct and maintain latrines despite economic or physical challenges and assess how

environmental reinforcements (social approval, peer pressure) encourage or discourage open defecation.

**Figure 2.2:**

*The Social Cognitive Theory Model*



**Source:** (Schunk, 2020).

## **2.6 Research gap**

The reviewed literature highlights a range of factors influencing latrine utilization, including social, cultural and economic constraints. It affirms the critical role that sanitation infrastructure plays in public health, yet simultaneously underscores that ownership of latrines does not guarantee consistent usage particularly in rural and pastoralist communities like Laisamis Sub-County.

However, despite extensive research across sub-Saharan Africa and South Asia, several key knowledge gaps persist, necessitating further localized investigation. Social norms, peer influence, and community pressure have been extensively examined in agrarian or peri-urban contexts (Patil, 2019; De et al., 2021), less is known about how these dynamics operate within highly mobile pastoralist communities.

Most behavioral sanitation studies neglect to consider how transitory settlement patterns, traditional leadership, and communal decision-making in such regions impact latrine adoption and sustained use. cultural taboos and belief systems have been identified as

significant barriers to sanitation (Godana & Mengistie, 2017; Kipngeno et al., 2024), but there remains a limited understanding of how cultural heterogeneity such as ethnic diversity, intergenerational norms, and gendered sanitation beliefs interact with pastoralist lifestyles to shape latrine usage patterns. Research is especially sparse on the symbolic meanings attached to defecation practices, such as beliefs linking latrines to spiritual impurity, particularly in Marsabit's multi-ethnic environment.

The psychological and emotional dimensions of sanitation such as stigma, dignity, and stress are increasingly recognized (Gauri et al., 2023; Vogel et al., 2022), empirical data on how these factors influence daily sanitation behaviors within marginalized pastoralist settings remains limited. Furthermore, economic constraints have been widely acknowledged as a limitation to latrine construction and maintenance (Woyessa et al., 2022; Kouassi et al., 2023), but there is insufficient insight into how households within pastoralist settings cope with financial limitations. Specifically, few studies examine how seasonal income variability, limited market access, and the opportunity costs of labor affect decisions around latrine repair, design adaptation, or abandonment.

National sanitation policies such as Kenya's Sanitation and Hygiene Policy (2016–2030) emphasize universal access, their effectiveness in pastoralist areas is uncertain. Community-Led Total Sanitation (CLTS) interventions have improved latrine coverage in certain areas (Wasonga et al., 2023), there is a persistent gap between latrine availability and actual use. Very few studies have assessed post-ODF (Open Defecation Free) sustainability, especially in regions where ecological, social, and economic conditions remain volatile. Coping mechanisms such as reverting to open defecation, sharing of poorly maintained facilities, or constructing temporary pit latrines are underexplored.

In summary, while existing literature provides a foundation for understanding the broader determinants of latrine utilization, there is a critical need for context-specific research. This study addressed those gaps by exploring the unique interplay of social, cultural, and economic determinants of latrine utilization within the pastoralist communities of Laisamis Sub-County, thereby informing more nuanced, localized, and sustainable sanitation strategies. similar contexts

## **2.7 Conceptual Framework**

A conceptual framework is a vital tool in research that visually or textually presents the key concepts, their interrelations, and the theoretical underpinning of a study (Salawu et al., 2023; Van der Waldt, 2020). The framework outlines how independent and dependent variables interact, guiding the research design and providing a structure for analyzing relationships. In the context of this study, the framework links the independent variable, Social, Cultural and Economic factors to the dependent variable latrine utilization as shown as Figure 2.3.

Social factors include the demographic, relational, and informational elements that influence behavior within communities. Key indicators in this domain include age, gender, and education level, as well as awareness of sanitation benefits, exposure to health promotion campaigns, social norms, social networks, peer influence, and community support.

For instance, individuals embedded in communities where latrine use is considered a marker of cleanliness and dignity are more likely to adopt consistent usage. Conversely, where social stigma is weak or absent, open defecation may persist due to lack of social pressure or behavioral reinforcement. Cultural factors encompass beliefs, taboos, traditions, and norms that shape the acceptability of latrine use. These include spiritual beliefs about purity and

impurity, gender-based taboos about toilet sharing, and traditional practices that valorize open defecation. In some communities, using a latrine near one's home is considered spiritually inappropriate, or it may be taboo for sons-in-law and fathers-in-law to share a toilet. Cultural beliefs can thus significantly hinder the adoption of safe sanitation, even when physical infrastructure exists.

Economic factors refer to the household's financial capacity and livelihood context that affect access to, construction of, and maintenance of sanitation facilities. Indicators under this domain include household income, affordability of construction materials, availability of financial incentives or subsidies, employment status, and the influence of pastoralism or mobility. For example, mobile pastoralist families may avoid permanent infrastructure investment, while low-income households may delay latrine construction due to competing priorities such as food, water, or school fees.

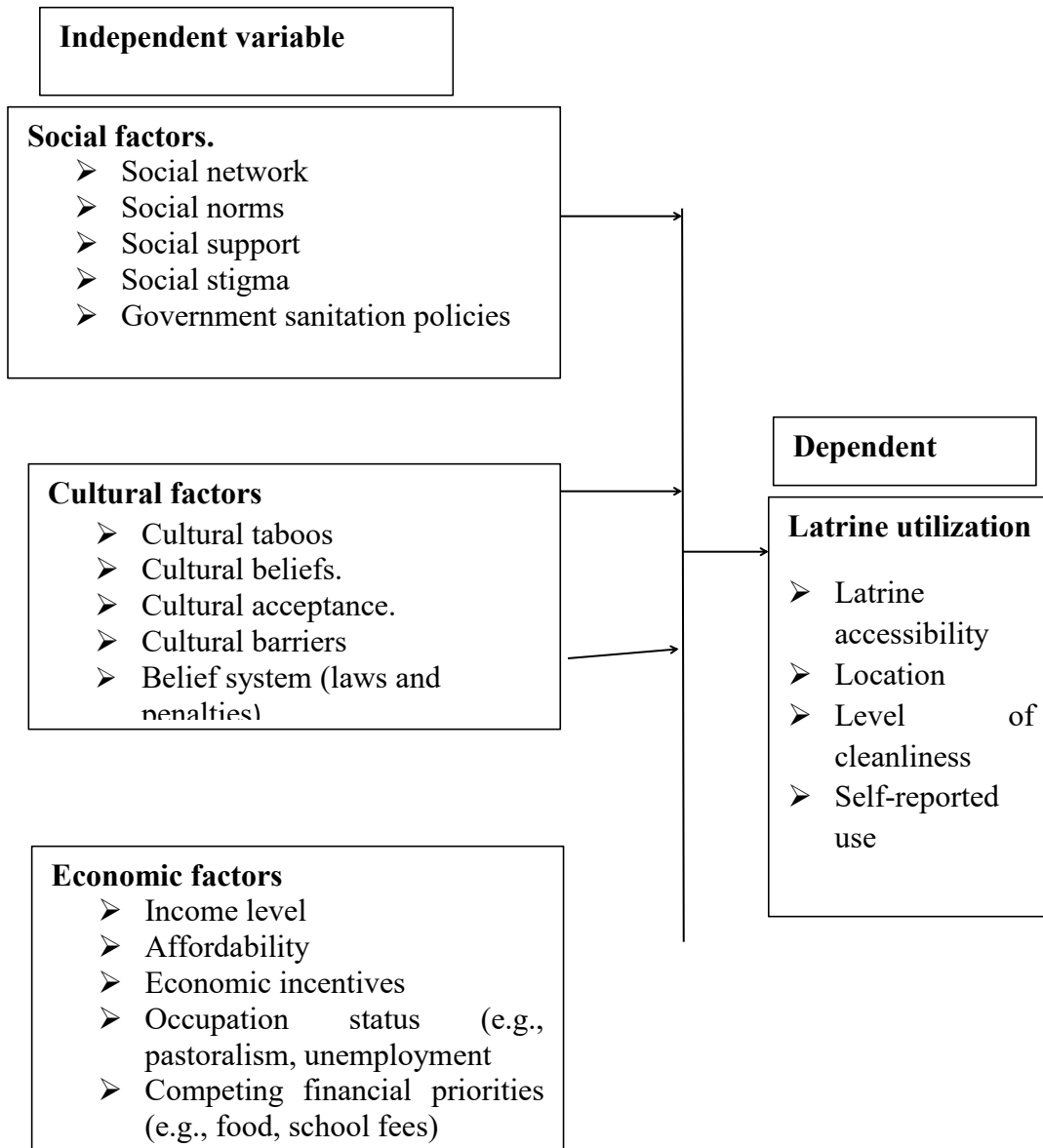
Latrine utilization, the dependent variable in this study, refers to the consistent, hygienic, and proper use of latrine facilities by all household members, including children, women, and the elderly, under all conditions. This goes beyond mere ownership to encompass daily behavioral use, facility cleanliness, and accessibility. In this study, latrine utilization was measured through a combination of self-reported usage, observational indicators, and attitudinal responses.

Specific indicators included: frequency of use, sharing status, proximity to the household, visual cleanliness, and willingness to use the facility regardless of external conditions (e.g., time of day, weather, or latrine state). Households that reported regular usage and showed supporting signs (such as clean floors, absence of feces in the compound, and private or

accessible latrines) were categorized as latrine utilizers. In contrast, those reporting inconsistent use or avoidance, despite latrine availability, were coded as non-utilizers.

**Figure 2.3:**

*Conceptual framework*



**Source:** (Literature review, 2025)

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.0 Introduction**

This section describes the procedures and methodologies used to assess influence of social, cultural, and economic factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya. The chapter details the research design, target population, sample size determination, sampling procedures, data collection methods, study instrument methods, data analysis techniques, and ethical issues for consideration while conducting the study.

### **3.1 Research Design**

A research design is a plan or strategy for conducting research that outlines the specific methods and procedures to be used to collect and analyze data. According to Neuman (2019), research design is the blueprint for conducting the study and serves as a guide for the researcher in collecting and analyzing data. The research used descriptive cross-sectional study design to assess influence of social, cultural, and economic factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya. The design was suitable as it will permit integration of both qualitative and quantitative research methods, allowing researchers to gather comprehensive and complementary data vital to making sound inference or generalizations of findings (Taherdoost, 2022)

### **3.2 Study Area**

The research was carried out in Laisamis Sub County, Marsabit County, in Northern Kenya, bordering Ethiopia to the north, Turkana County to the west, Samburu and Isiolo counties to the south, and Wajir County to the east. Laisamis sub-county has a total size of 20,290 km<sup>2</sup> and five County Assembly Wards, the largest of which is Laisamis Ward (3,885 km<sup>2</sup>).

sub county had a total population of 101,089 persons, giving it population density of 14 persons per kilometer square, total number of the household in the sub county is 19,389 (KNBS, 2019). The sanitation coverage of the sub county was below 10% that according to smart survey conducted in 2019 due to low sanitation coverage in the sub county, CLTS implementation has been ongoing in the sub county and as per the MOH (2023) in the year 2022 and 2023 twenty villages were declared ODF.

### **3.3 Target Population**

Population can be defined as a group of people who are linked by a common characteristic (Osikhotsali & Scott, 2020). The target population for this study consists is 31,414 of male and female household heads in the Laisamis Sub-County, Marsabit County, Kenya (DHIS 2024), specifically those who own latrines that is 650 (MOH-513, 2023). Household heads were chosen as the focus of the study because they are typically the primary decision-makers regarding sanitation facilities and practices within their households. This makes them crucial for understanding the factors influencing latrine construction, maintenance, and utilization. Since these individuals are responsible for the day-to-day management of household sanitation, their perspectives can provide valuable insights into the barriers and enablers of latrine use.

In addition to household heads, informants were selected to provide additional insights into the broader factors affecting latrine utilization. These informants included: the WASH (Water, Sanitation, and Hygiene) coordinator, Public Health Officers (PHO), and NGO representatives. These experts were chosen because of their roles in sanitation and public health within the sub-county. Furthermore, Community Health Volunteers (CHVs) and community leaders were also included as informants. These leaders were selected based on

their positions of influence and engagement in the community. They included natural leaders such village managers, local authorities, and youth and women representatives, all of whom are key stakeholders in sanitation practices and community health.

### **3.3.1 Inclusion criteria**

The study focused on male and female household heads aged at least 18 years and residing in the Laisamis Sub-County, Marsabit County, Kenya. Additionally, the study was limited to households that own latrines, ensuring that the participants had firsthand knowledge and experience in latrine ownership and utilization.

### **3.3.2 Exclusion Criteria**

The study excluded individuals who did not meet certain criteria. Specifically, non-household heads or individuals under the age of 18 were excluded, as they typically do not make decisions regarding household sanitation practices. The study also focused exclusively on households that own latrines, and thus individuals living in households without latrines were excluded. This criterion was essential as it ensured that only those with relevant experience in latrine utilization were included in the study, providing the necessary insights into the factors influencing latrine use.

### **3.4 Sample Size Determination**

The sample size of the household that featured in the study was determined by use of simple random formula for finite population and when using a known population size. The researcher adopted the following formula by Taro Yamane (1967:886) to determine the sample size.

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

Where  $n$ ;  $n$  is the sample size.;  $N$  is the population., and  $E$  is the margin of error (expressed as decimal). **Given**  $N$ = total number of households with functional latrine in Laisamis sub-county which is 31,414 that according to (DHIS 2024). Desired margin error ( $e$ ) = 7.5% (0.075)

**Therefore:** 
$$n = \frac{31414}{1+31414(0.075)^2} \quad n= 177 \quad ,$$

### 3.5 Sampling Technique

The sampling technique employed in this study followed a multistage sampling method, commonly used for large-scale research to ensure that various levels of the population are appropriately represented (Taherdoost, 2016). In the first stage, cluster sampling was used to divide the study area into five administrative wards within Laisamis Sub-County, Marsabit County. These wards, as identified by the Kenya National Bureau of Statistics (KNBS, 2019), include Laisamis, Log-logo, Soweto, Dahaleyo, and Barrier Chini.

The wards were selected based on administrative boundaries and population characteristics, with a focus on their relevance to the study objectives. In the second stage, purposive sampling was applied to select Laisamis and Log-logo wards, as they had successfully implemented the Community-Led Total Sanitation (CLTS) program and met the target of 76% latrine coverage. Purposive sampling is particularly effective when the study aims to focus on specific areas that possess certain characteristics, such as high latrine coverage (Ntaro et al., 2022; Creswell, 2014). In the third stage, villages within the selected wards that had achieved 76% latrine coverage were chosen.

A total of 10 villages were selected for inclusion in the study, ensuring that the study captured areas with the highest levels of latrine adoption and use. This approach aligns with the goal of understanding factors that promote sanitation behaviors in areas where

interventions have been successful (Lopez et al., 2019). Finally, in the fourth stage, households were selected using a proportional allocation formula to determine the sample size for each village as shown in Table 3.1. The MOH 513 household register, maintained by Community Health Volunteers (CHVs), was utilized to compile a list of eligible households. The selection of household heads was then done through random sampling, where each name was assigned a unique number, and participants were chosen by randomly drawing numbers. This ensured that every household head had an equal chance of selection, maintaining the randomness and representativeness of the sample (Stockemer et al., 2019). Therefore, sample from each village was selected by use of proportion formula as shown in equation (2).

$$\text{Sample in village(s)} = \frac{\text{Total hh in each village}}{\text{target population (T)}} \times \text{Sample Size}(N) \quad (2)$$

**Table 3.1***Sampling frame*

<b>Ward</b>	<b>Villages</b>	<b>No. of Households</b>	<b>Sample size(s)</b>
<b>Laisamis/mereille</b>	Soweto	52	14
	Dahaleyo	35	10
	Barrier chini	36	10
	Old town	55	15
	Kizito	24	7
	M.center A	82	22
	M.Ngamia	129	35
<b>Loglogo</b>	Bulle	75	20
	Juu west	62	17
	Ronga	100	27
<b>Total</b>		T =650	N=177

**Source:** (MOH-513, 2023)

For the qualitative aspect of the study, The FGD participants were selected purposively to ensure that they had relevant experience and knowledge about sanitation practices in the study area. A total of 7-12 participants were selected for each group including the WASH (Water, Sanitation, and Hygiene) officers, PHOs, NGO representatives, Community Health Volunteers (CHVs) and community leaders. This number is in line with recommended FGD guidelines, which suggest that groups of this size foster dynamic discussions while ensuring that each participant has an opportunity to contribute (Nduna, 2020).

### **3.6 Data Collection Instruments**

The study employed both primary and secondary data collection methods to generate both quantitative and qualitative data, ensuring a comprehensive analysis of the factors influencing latrine utilization in Laisamis Sub-County, Marsabit County. The methods utilized were designed to gather a broad spectrum of information from both community members and experts, capturing both statistical patterns and deeper contextual insight. Quantitative data was collected using a structured questionnaire (Appendix II), which was chosen for its efficiency in gathering large amounts of data within a short time frame.

According to Kothari (2008), questionnaires are highly effective for collecting standardized data from respondents and ensuring consistency across the sample. The questionnaire included closed-ended and scale-type questions, structured into several sections to address the study's specific objectives: demographic information (age, gender, education level, marital status, and occupation), latrine ownership and utilization (assessing whether households owned latrines, their functionality, and frequency of use), and social, cultural, and economic factors (examining influences such as social networks, community norms, cultural beliefs, economic factors like income and affordability, and access to sanitation resources). Additionally, questions were included to explore behavioral patterns, such as latrine usage, maintenance practices, and perceptions of latrine cleanliness.

Qualitative data was collected using Focused group discussion guides (Appendix III). Focus Group Discussions (FGDs) provided valuable qualitative data that supplemented the quantitative findings. FGDs are particularly effective for exploring social dynamics and cultural nuances that influence behavioral patterns, offering in-depth insights that cannot be fully captured through structured questionnaires.

### **3.7 Pre-Testing of instrument**

To ensure that the data collection tools served their intended purpose pre-testing of tool was required, for this research. A pre-test was conducted to evaluate the validity and reliability of the tools, ensuring that the questions were relevant and easily understandable. Mugenda and Mugenda (2003) recommend that a pilot study sample should constitute 10% of the total study population. For this research, a pre-test was conducted using 18 questionnaires in Karare Ward, located in the neighboring Saku Sub-County.

This region was chosen because it shares similar demographic, socio-economic, and cultural characteristics with Laisamis Sub-County, including a pastoralist lifestyle, comparable community health behaviors, and sanitation-related challenges. This approach ensured that the feedback from the pre-test was reflective of the actual study area, allowing for valuable adjustments to the data collection instruments. The pre-test results were used to identify and correct any issues with the questionnaire. Additionally, it helped determine the appropriate amount of time needed to complete the survey, ensuring efficiency in the actual data collection process.

#### **3.7.1 Validity of research instruments**

According to Zohrabi (2023), validity refers to determining whether the instruments measure what they are designed to measure. It is also possible to define it as the precision of the findings of the research, as well as the degree to which the findings obtained from the data analysis are reflective of the actual phenomenon that is the subject of the investigation (Lakshmi & Mohideen, 2023). The experts, who were well-versed in public health and sanitation practices, examined the questions for their relevance, clarity, and appropriateness

for the study population. Their feedback helped refine the questions and ensure they were aligned with the research objectives

### 3.7.2 Reliability of research instruments

To assess the reliability of the research instruments, Cronbach's alpha was used as the measure of internal consistency. This method ensures that the items within each section of the questionnaire are measuring the same underlying construct and are consistent in their responses (Dabbagh et al., 2023)

The reliability of the instruments was evaluated for each factor (Social, Cultural, Economic Factors, and Latrine Utilization) during the pre-test phase. The findings presented in Table 3.2 indicated that all factors demonstrated strong internal consistency, with Cronbach's alpha values ranging from 0.833 to 0.903. This shows that the instruments used in the study are reliable for data collection. According to Dabbagh et al. (2023), a Cronbach's alpha value greater than 0.7 is deemed acceptable for research instruments. The high reliability scores suggest that the instruments are well-equipped to effectively measure the study variables, ensuring consistent and dependable results throughout the research process.

**Table 3.2:**

*Reliability Test*

<b>Factor</b>	<b>Cronbach's alpha</b>	<b>Outcome</b>
Social Factors	.851	Reliable
Cultural Factors	.833	Reliable
Economic Factors	.875	Reliable
Latrine Utilization	.903	Reliable

**Source:** Research data (2024)

### **3.8 Data Collection Procedure**

Prior to commencing data collection, the researcher obtained an introductory letter from Meru University of Science and Technology (MUST) (Appendix IV) and secured a research permit from the Kenya National Commission for Science, Technology and Innovation (NACOSTI) under License No. NACOSTI/P/23/30258. Additional approvals were obtained from Marsabit County authorities, the Department of Health, and the Ministry of Education to facilitate ethical community entry, ensure administrative compliance, and promote cooperation during fieldwork in Laisamis Sub-County, Marsabit County. These approvals were crucial in ensuring a smooth and ethically responsible fieldwork process.

To support data collection, the study recruited five enumerators, all of whom had prior experience in community-based research. Before fieldwork commenced, the enumerators underwent a three-day training session, which covered essential topics such as research ethics, the process of obtaining informed consent, and the administration of structured questionnaires in person. This training ensured that the enumerators adhered to uniform data collection procedures, enhancing both their ethical understanding and technical competencies throughout the fieldwork process.

Quantitative data were collected through face-to-face interviews using a structured questionnaire. A simple random sampling method was employed to select households from various villages within Laisamis Sub-County. To ensure fairness and eliminate bias, the first household in each village was selected using a computer-generated random number. Before conducting the interviews, respondents were fully informed about the study's objectives, procedures, and ethical considerations, with informed consent obtained from all participants before proceeding with the interview. In cases where a selected household declined

participation, a replacement household was randomly chosen from the remaining list to maintain sample representativeness. The interviews were conducted in the local language (either Borana or Swahili) depending on the respondent's preference, ensuring clarity and comfort during the data collection process.

For qualitative data, the principal researcher conducted focus group discussions (FGDs). All qualitative data collection was audio-recorded with the participants' consent, and field notes were taken to capture non-verbal cues, environmental context, and observations that might not be reflected in the audio recordings. These qualitative methods allowed for a more nuanced understanding of the study topic, complementing the quantitative data gathered from the structured interviews.

### **3.9 Data Analysis and Presentation**

The quantitative data were carefully examined to ensure they were complete, accurate, and consistent. They were then assigned numerical codes and analyzed using the Statistical Package for Social Science (SPSS) version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Frequencies and percentages described categorical variables, while means and standard deviations summarized continuous variables. Results were presented in tables and charts for clarity. A mean value range of 1-2.9 was categorized as general agreement, and 3-5 indicated general disagreement (Tanujaya et al., 2022).

Inferential analysis included the Pearson Chi-Square test to examine associations between social, cultural, and economic factors and latrine utilization, using a 95% Confidence Interval (CI). A p-value of less than 0.05 indicated statistical significance. Logistic regression analysis was applied to estimate the relationship between predictor variables

(social, cultural, and economic factors) and latrine utilization. The analysis was conducted at a 95% Confidence Interval (CI) and utilized crude Odds Ratio (OR) for bivariate analysis, as well as Adjusted Odds Ratio (AOR) for multivariate analysis. The results were presented using cross-tabulation tables. Variables with p-values less than 0.05 were deemed statistically significant.

Before conducting the binary logistic regression analysis, several assumptions were tested. The linearity of the logit assumption was verified using the Box-Tidwell test, which showed no significant deviations (p-values ranging from 0.23 to 0.85), indicating that the relationship between continuous predictors and the log-odds was linear. The independence of observations assumption was checked with the Durbin-Watson test, yielding a statistic of 2.01, which falls within the acceptable range, confirming independence.

The assumption of multi collinearity was assessed using the Variance Inflation Factor (VIF), with all VIF values being below 2.5, suggesting no multi collinearity issues. The outliers and influential data points assumption was tested using Cook's Distance, with no influential points identified. The model appropriateness was confirmed by the Hosmer-Lemeshow test, which yielded a p-value of 0.31, indicating a good model fit, and a Nagelkerke R<sup>2</sup> of 0.28, explaining 28% of the variation in latrine utilization. Finally, the assumption of normality for continuous predictors was confirmed using the Jarque-Bera test, with p-values greater than 0.05, indicating that all predictors were normally distributed.

Qualitative data was supplemented with quantitative findings. The qualitative data obtained from the Focused Group Discussion underwent manual content and thematic analysis, resulting in the development of themes that were presented together with the verbatim quotes.

### **3.10 Ethical Considerations**

A set of ideas that guide a study design and procedures are known as ethical concerns in research. When gathering data from people, scientists and researchers must always follow a set of rules. Understanding real-life occurrences, exploring successful therapies, investigating habits, and enhancing lives in other ways are all common goals of human research. What you investigate and how you undertake it are both ethically important factors. These factors contribute to safeguard the rights of participants in the research and to improve the research's credibility as well as maintain the integrity of the research paper (Bhandari, 2021).

Thus, in this research paper, confidentiality was a key ethical issue. The researcher had a responsibility of safeguarding the interests and rights of all the respondents. In addition, the respondents were allowed to skip any questions they feel uncomfortable answering. This study ensured that a high level of confidentiality is upheld for all study-related data. The responders' names were not made public. Also, the researcher used codes to ensure the confidentiality of the data gathered through the questionnaires. The researcher refrained from asking respondents embarrassing or irrelevant questions, as well as queries that employ threatening or enticing language. The researcher sought approval from Meru University of science and technology and ethical review committee. The researcher also made sure there are consent forms to each participant to sign.

## **CHAPTER FOUR: RESEARCH RESULTS AND DISCUSSIONS**

### **4.0 Introduction**

The chapter entails the study response rate, Demographic data analysis, Reliability and validity results, and discussions of the findings.

### **4.1 Response Rate**

In order to collect data, a total of 177 questionnaires were hand delivered to households that own latrines in Laisamis Sub-County. At the end of the data collection exercise, collected questionnaire were 177 represent 100% response rate and which were found complete and therefore usable for data analysis as shown in Table 4.1. %. According to Nanayakkara (2020), a response rate for a study above 50% can be used to generalize findings and there is a high likelihood the findings reflect the characteristics of the entire population.

Achieving 100% response rate in this study was made practical through combination of systematic strategies that involve clear and effective communication, participant engagement and follow-ups, by use of data collection enumerators respondent were given flexible schedule options and also another important strategy that enable perfect response rate was use of multiple channel of communication whereby those participants without phones were reached through community health promoters. There was also back-up plan for replacements in-case one respondent miss and through this structured approach the researched achieved maximum responses from interviewers

**Table 4.1**

*Response rate*

<b>Responses</b>	<b>Frequencies</b>	<b>Percentage</b>
Responded	177	100.0%
Not responded	0	0.0%
<b>Total</b>	<b>177</b>	<b>100%</b>

**Source:** Research data (2024)

## **4.2 Demographic Information's of participants**

In this section, the study presents distribution of participants based on age, Gender, Marital status, Level of education, and Occupation status.

### **4.2.1 Participants Age**

Study participants were asked to indicate their age group, and the results presented in Table 4.2 show that the majority (56.5%) were between 24–59 years, 32.2% were between 18–24 years, and only 11.3% were aged 60 and above. This demographic distribution suggests that the study captured responses predominantly from active, working-age adults a group typically engaged in household decision-making, including sanitation-related practices.

The high participation of age group 24-49 years is likely due to their active involvement in household management and may imply greater likelihood of latrine utilization due to their increased awareness, physical ability to construct or maintain sanitation facilities, and a higher perception of health risks, particularly those concerning their families. Similar findings were recorded by Belete et al. (2024) that active adults played a crucial role in promoting household hygiene practices in pastoralist settings, often acting as both decision-makers and role models.

Conversely, the lower representation of individuals aged 60 and above (11.3%) may reflect decreased engagement in household sanitation decisions or physical limitations in latrine use, a trend corroborated by Getahun et al. (2022), who highlighted accessibility and social exclusion challenges among the elderly.

**Table 4.2:**

*Age of participants*

<b>Age category</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
18-24	57	32.2
24-59	100	56.5
60 and above	20	11.3

**Source:** Research data (2024)

#### **4.2.2 Participants gender**

Study participants were asked to indicate their gender, and the findings are as illustrated in Table 4.3. The results showed that the majority of respondents (67.8%) were female, while only 32.2% were male. This gender disparity in participation can be attributed to traditional gender roles common in pastoralist and rural settings. In many such communities, men are often away during the day for work-related duties such as herding livestock or seeking casual labor, while women remain at home to manage domestic responsibilities including cooking, childcare, and sanitation tasks as was noted in Focused Group Discussion.

Therefore, women could be key stakeholders in household sanitation and hygiene management. Female households' head's central role in domestic responsibilities places them at the forefront of latrine use, maintenance, and influence over hygiene practices. This makes them vital targets for sanitation education, behavior change communication, and

community-led total sanitation (CLTS) interventions. These findings align with prior studies emphasizing the role of women in sanitation behavior and their vulnerability in the absence of proper facilities. For instance, Friedrich et al. (2020), and Tamene and Afework (2021) note that women are primary enforcers of sanitation within the household, making them more likely to engage with sanitation interventions. Similarly, Gauri et al. (2023) and Patkar (2020) highlighted that women are disproportionately affected by poor sanitation through increased exposure to shame, insecurity, and health risks when engaging in open defecation.

**Table 4.3**

*Gender of the respondents*

<b>Gender</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
Female	120	67.8
Male	57	32.2

**Source:** Research data (2024)

#### **4.2.3 Marital status of respondents**

Respondents were asked to indicate their marital status, and the findings are shown in Table 4.4. A large majority (76.8%) of the respondents reported being married, followed by 12.4% widowed, 9.0% single, and 1.7% widowers. Married individuals form the largest proportion of the study population and hence may have better economic stability and access to resources than other groups.

Households with married participants often take a leading role in implementing and maintaining sanitation facilities due to their sense of responsibility for the welfare of their families. This sense of accountability may make them more invested in ensuring consistent latrine use and hygiene, as emphasized during the Focus Group Discussions (FGDs). As one

FGD participant noted: “When you have a family, especially children, you cannot afford to ignore hygiene. We built our latrine because I couldn't bear the thought of my kids falling sick because of open defecation.”

This aligns with prior studies such as Stopnitzky (2020) in India found that latrine construction was even tied to marital eligibility, with men required to build a latrine before being considered suitable for marriage. Similarly, Wasonga et al. (2022) documented how sanitation practices in Kenyan communities are influenced by family structures and gendered responsibilities, with married individuals especially women playing key roles in advocating for toilet construction and maintenance.

**Table 4.4**

*Marital status of the participants*

<b>Marital status</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
Married	136	76.8
Single	16	9.0
Widowed	22	12.4
Widower	3	1.7

**Source:** Research data (2024)

#### **4.2.4 Level of education**

The study participants were asked to indicate their level of formal education, and the findings are illustrated in Table 4.5. Results showed that 35.6% of respondents had attained secondary education, followed by 27.1% with primary education, and 5.1% with tertiary education. A significant proportion 32.2% of the respondents recorded to have no basic educations.

The highest proportion of 68.8% participants had completed at least primary educations, an indication of high likelihood of better access to information and resources related to sanitation and health practices, which can positively influence their involvement in latrine utilization. In agreement, Omer et al. (2022) observed in Ethiopia that households with higher educational attainment were significantly more likely to use latrines consistently. Similarly, Ahmed and Ali (2024) noted that education not only improved awareness of sanitation benefits but also facilitated access to available government or NGO sanitation program.

However significant 32.2% of participants had no formal educations, thus they may face challenges in understanding and implementing effective sanitation practices. This aligns with findings by Nanyim et al. (2024) in Ghana and Busienei et al. (2019) in Kenya, who reported that lack of formal education was a major factor contributing to poor sanitation practices, even in areas with improved latrine coverage.

**Table 4.5**

*Level of education*

<b>Level of education</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
None	57	32.2
Primary	48	27.1
Secondary	63	35.6
Tertiary	9	5.1

**Source:** Research data (2024)

**4.2.5 Occupation**

Study participants were asked to indicate their occupation, and the findings are presented as in Table 4.6. The majority (40.1%), of the surveyed population were unemployed, while 10.7% were formally employed. Notably, 21.5% identified as herders, primarily engaged in

livestock rearing, which reflects the dominant pastoralist lifestyle in Laisamis Sub-County. Additionally, 27.7% reported being involved in small-scale or informal business activities such as selling food items, second-hand clothes, or firewood.

Households led by herders or unemployed individuals are often less financially equipped to construct or maintain sanitation infrastructure such as latrines. Furthermore, the semi-nomadic nature of pastoralism may reduce the perceived need for permanent sanitation facilities, as mobility discourages long-term investment in infrastructure. Herders who frequently migrate with livestock in search of pasture and water, latrine use may not be a priority.

This aligns with findings from Barasa & Waldman (2022) and Belete et al. (2024), who reported that mobility among pastoralist communities in Northern Tanzania and Ethiopia impedes investment in permanent sanitation structures. Additionally, Nyanza et al. (2018) highlighted that even among semi-permanent settlements in Ngorongoro, latrine ownership and use were strongly influenced by occupation and income levels.

**Table 4.6**

*Occupation status*

<b>Occupation status</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
Business	49	27.7
Employed(formal)	19	10.7
Herder (livestock raring)	38	21.5
Unemployed	71	40.1

**Source:** Research data (2024)

### 4.3 Utilization of Sanitation Facilities

The study investigated the latrine ownership, quality of latrine, and latrine accessibility, and findings were presented in subsequent Tables.

When respondents were asked whether they owned a latrine, the majority (95.5%) reported owning one, while only 4.5% indicated they did not as shown as in Table 4.7. This high ownership rate may be attributed to the success of targeted sanitation interventions such as the Community-Led Total Sanitation (CLTS) approach, which encourages community members to construct latrines using locally available materials. Evidence from focus group discussions confirmed that Community Health Volunteers (CHVs), Non-Governmental Organizations (NGOs), and public health officers had been instrumental in mobilizing the community to construct latrines through CLTS “triggering” sessions, which rely on emotional drivers such as shame and dignity. One respondent explained:

*“Community health volunteers, in conjunction with NGOs and the public health office, have hugely promoted construction of pit latrines in this area due to CLTS initiatives that promote access through triggering by shame and use of available resources.”*

This finding is consistent with earlier studies that evaluated CLTS initiatives. For instance, Wasonga et al. (2023) reported that in Siaya County, Kenya, CLTS programs significantly boosted latrine construction, but low-income groups continued to face difficulties in usage due to maintenance and behavioral challenges.

When asked whether they shared a latrine, 52.7% of the 95.5% of respondents who owned one reported having exclusive access to their facility, while 47.3% indicated that they shared latrines with other households, as shown in Table 4.7. Insights from the FGDs further

confirmed this, with participants noting that in some areas, a single latrine was shared by as many as seven households. One respondent explained, *“In some units (villages), one toilet is being used by seven households in a compound.”*

The study finding suggests that while latrine ownership is relatively high, access to private sanitation remains limited for a significant portion of the population. Shared use of sanitation facilities may pose challenges related to cleanliness, maintenance, and privacy, which can deter consistent usage particularly among vulnerable groups such as women, children, and the elderly. Similar patterns have been documented in other low-income and rural settings. For example, Kefeni and Yallew (2018) found that in urban informal settlements in Addis Ababa, women often avoided communal latrines due to concerns over privacy, safety, and hygiene. Likewise, Kipngeno et al. (2024) highlighted that shared sanitation facilities in Nakuru’s slums were subject to cultural taboos and gender-based restrictions, discouraging use by male and female members of the same household.

When asked, respondents who did not have toilet facilities within their homes where they defecated, 50% of the 4.5% indicated that they practiced open defecation in areas such as bushes, riverbanks, or near mountainous terrain, while the remaining 50% reported relying on shared latrines, as depicted in Table 4.7. Insights from the Focus Group Discussions (FGDs) revealed that open defecation among these households was often linked to the nomadic lifestyle and cultural perceptions that deprioritize fixed sanitation infrastructure. One participant noted,

*“Some households in my village prefer to use bushes due to lifestyle (pastoralist), and culture influences whether one builds a latrine or not.”*

This pattern illustrates that the absence of latrine facilities is not solely a matter of affordability or awareness, but also deeply rooted in lifestyle and cultural norms. Studies across similar contexts reinforce these findings. Belete et al. (2024) reported that in Eastern Ethiopia’s Somali region, semi-nomadic households were less likely to construct latrines due to their mobility and belief systems associating latrines with spiritual impurity.

**Table 4.7**

*Latrine ownership*

<b>Variable</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
<b>Latrine Ownership</b>		
No	8	4.5
Yes	169	95.5
<b>Sharing (yes, N=169)</b>		
Individual	89	52.7
Sharing	80	47.3
<b>Where do defecate if no (n=8)</b>		
Open ground (bushes, rivers and near the mountain)	4	50.0
Share latrines	4	50.0

**Source:** Research data (2024)

The study investigated the users’ preferences on quality aspects of sanitation facilities, using five-point Likert with 1 indicating strongly agreed to 5 strongly disagreed and findings were as summarized in Table 4.8.

The results, showed that (63.8%) of the respondents strongly agreed with notion the level of cleanliness of the toilets attracts me to use the toilet, 16.4% agreed, while 11.3% were not sure. However, 6.2% and 2.3% of respondents strongly disagreed and disagreed respectively. At resultant mean of 1.71(SD =1.15), indicated general agreement that level of cleanliness of toilet is a predictor in the utilization of toilet facilities.

Therefore, Households are more likely to utilize latrines when they perceive them as clean and well-maintained, underscoring the need for not just availability but also upkeep of sanitation facilities. These findings are consistent with previous research by Lopez et al. (2019) in Ecuador, who reported that perceived hygiene was a significant predictor of daily latrine use, especially when reinforced by community norms. Additionally, Kanda et al. (2022) in Zimbabwe identified that privacy, odor control, and cleanliness were the primary enablers for continued latrine use.

On other hand more half 60.5% of sample populations strongly disagreed with statement choice of the toilet was based on how its user-friendly, 16.4% disagreed, 10.2% were not sure, while only 9% and 4% agreed and strongly agreed with statement respectively. A mean score of 4.2 with standard deviations of 1.179 illustrated general disagreement of respondents with fact that user-friendly toilet influences utilization in study area.

This finding indicates that in the context of Laisamis Sub-County, perceived usability features such as ease of entry, structural design, or accessibility for vulnerable groups are not the primary drivers of latrine use. Instead, sanitation behavior appears to be shaped more strongly by social or cultural pressures and perceptions rather than by functional design considerations. These findings contrast with evidence from more urbanized or semi-urban contexts. For instance, Kefeni and Yallew (2018) found that in Addis Ababa, women's

discomfort using communal latrines due to poor design, lack of privacy, and odor significantly hindered utilization

When tasked to identify whether the state of hygiene of existing toilets in rural areas was favourable, as shown in Table 4-8, the majority 54.2% of the respondents strongly agree, 23.7% agreed, 16.9% of participants were not sure if toilets in rural areas were favourable and only 5.1% disagreed with the statement. The study recorded a mean of 1.173 (SD=0.92), an illustration that most participants agreed that the state of hygiene was an indicator of latrine utilization. The findings underscore that the perceived cleanliness and hygienic condition of latrines play a critical role in determining their usage. Cleanliness not only enhances physical comfort but also aligns with users' expectations of dignity and respect in sanitation practices. In the same vein, Weems (2022) and Yirdaw et al. (2023) highlighted that hygiene conditions such as clean floors, absence of odor, and visual cues directly influence the continued use of sanitation facilities.

**Table 4.8**

*Quality aspects of latrine*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percentage (!00%)</b>	<b>Mean (SD)</b>
<b>Cleanliness</b>			<b>1.71 (1.150)</b>
Strongly agree	113	63.8	
Agree	29	16.4	
Neutral	20	11.3	
Disagree	4	2.3	
Strongly disagree	11	6.2	
<b>User-friendly</b>			<b>4.20 (1.179)</b>

Strongly agree	7	4.0
Agree	16	9.0
Neutral	18	10.2
Disagree	29	16.4
Strongly disagree	107	60.5
<b>State of hygiene favourable</b>		<b>1.73 (0.920)</b>
Strongly Agree	96	54.2
Agree	42	23.7
Neutral	30	16.9
Disagree	9	5.1
Strongly Disagree	0	0

**Source:** Research data (2024)

The study further examined the latrine accessibility and findings were presented in Table 4.9. Results showed that a majority (76.3%) of respondents reported that latrines were accessible to all household members, including children, the elderly, and persons with disabilities, while 23.7% indicated otherwise. This high accessibility rate could be attributed to increased community sensitization on inclusive sanitation design particularly through Community-Led Total Sanitation (CLTS) and related initiatives.

Focus Group Discussions (FGDs) revealed that public health officers and community health volunteers routinely conduct household visits and barazas to promote inclusive toilet construction. These efforts emphasize the need for universal access, stressing safety, dignity, and hygiene. Previous studies support this finding. For example, Lenai et al. (2021)

emphasized the importance of inclusive design in maintaining Open Defecation Free (ODF) status in Kenya, particularly for ensuring continued latrine use by the elderly and people with disabilities.

In terms of proximity, more than half (54.8%) of the respondents reported that their toilets were located 10–20 meters from their homes, 28.2% indicated distances greater than 20 meters, while only 16.9% reported a distance of less than 10 meters. These results reflect a balance between accessibility and privacy. FGD participants noted that local guidelines promote construction within 20 meters from the home to discourage open defecation relapse while maintaining user privacy and convenience in bushy terrain. A participant noted that,

*“Community members are educated and trained on need to construct toilet facilities that inclusive and in accord to human right, safety and dignity. Since the area is characterized by bushes, we encourage them to construct toilet with 20 meters to avoid relapse of open defecations”*

This is consistent with the findings of Temesgen et al. (2021), who reported that in Southern Ethiopia, households with toilets located within 6–20 meters had significantly higher latrine utilization rates than those with more distant or less convenient facilities. as was noted in FGD.

**Table 4.9***Latrine Accessibility*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
<b>Accessibility</b>		
No	42	23.7
Yes	135	76.3
<b>Latrine proximity in meters(m)</b>		
less than 10 meters	30	16.9
10-20 meters	97	54.8
more than 20 meters	50	28.2

**Source:** Research data (2024)

The respondents were asked to rate of level of agreement with statement use toilet irrespective of conditions, using five-point Likert scale, 1- strongly agree and 5-Strongly disagreed. The study revealed that nearly half (49.7%) of respondents strongly disagreed with the notion of using latrines regardless of their condition, while 14.7% disagreed and 13.0% were neutral. Only a small proportion 20.9% agreed and 1.7% strongly agreed expressed willingness to use latrines irrespective of their state.

These results suggest that latrine condition is a key determinant of its utilization. The reluctance to use poorly maintained or unhygienic toilets can be attributed to concerns about cleanliness, odor, privacy, user safety, and dignity. The study finding is supported by, Venkateswarlu (2019) in India found that households with access to latrines still practiced open defecation due to poor maintenance, foul smell, and structural issues such as lack of doors or roofs. Le and Makarchev (2020) in Vietnam also found that latrine use was highly

correlated with perceived cleanliness, safety, and convenience with many respondents refusing to use facilities they considered uncomfortable or unhygienic.

The study further categorized respondents based on their willingness to use latrines under suboptimal conditions: those who strongly disagreed or disagreed (64.4%, n = 114) were classified as non-utilizers, while those who were neutral, agreed, or strongly agreed (35.5%, n = 63) were considered latrine utilizers as shown as in Figure 4.1. This 35.5% utilization rate mirrors findings from Nanyim et al. (2022) in Ghana, where only 6.6% of latrine owners reported consistent use, despite 22.3% having access to latrines. Similarly, Belete et al. (2024) in Eastern Ethiopia observed that while 59.5% of households owned latrines, only 29.2% used them regularly. This could be attributed to social, cultural and economic aspects

**Table 4.10**

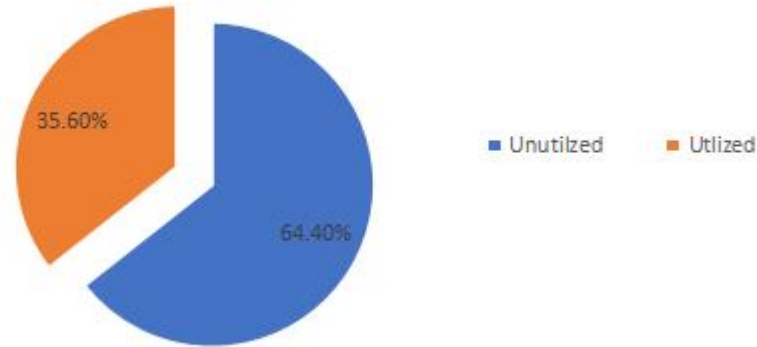
*Use of latrine facilities*

<b>Use of toilet irrespective of conditions</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
Strongly agree	3	1.7
Agree	37	20.9
Neutral	23	13.0
Disagree	26	14.7
Strongly disagree	88	49.7

**Source:** Research data (2024)

**Figure 4.1:**

*Latrine utilizations*



**Source:** Research data (2024)

#### **4.4 Social factors influencing utilization of latrine**

The study investigated influence of social network, social norms, social stigma, social support, community programs, and government policies on the promotion of latrine utilizations

##### **4.4.1 Social network influence**

The study examined the influence of societal networks on latrine utilization. As shown in Table 4-11, the majority of respondents (95.5%) affirmed that their social networks friends and surrounding people influence latrine use in their community. In such environments, behaviors are often shaped not by formal rules but by interpersonal influence, peer observation, and shared values. Additionally, people in close-knit communities tend to learn from and emulate others they trust, making behavior change more socially contagious. Thus, the behavior spreads not just through information but through emotional, reputational, and normative cues. Only a minority (4.5%) disagreed.

The findings support, Patil (2019) found individuals embedded in communities where latrine use was normative were more likely to adopt the behavior. Pakhtigian et al. (2022)

highlighted that long-term latrine use was driven more by neighbors’ behaviors than by policy. De et al. (2021) and Lopez et al. (2019) showed that social approval, perceived norms, and interpersonal influence shaped sanitation decisions. Kwiringira et al. (2023) and Mbemba (2022) further emphasized peer modeling and community influence as critical factors.

**Table 4.11**

*Influence of societal network on latrine utilizations*

<b>Societal network</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
No	8	4.5
Yes	169	95.5

**Source:** Research data (2024)

#### **4.4.2 Information on benefit of toilet**

The respondents were tasked to identified whether they had received information’s on benefits of using latrines and findings were tabulated in Table 4-12. The study findings revealed that majority of the respondents 94.4% had received information’s on benefit of latrine utilization from friends and relatives., while only 5.6% had not received any information. Access to information could be due to government initiatives that encourage free and basic education for Kenyan Children and also community awareness, training and education program in study area by various sanitation agencies in study area as was pointed out in FGD.

One of the respondents indicated that.

*“.. we (CHVs, and PHOS) conduct regularly meeting including barazas and dialogue days, and visiting households explaining need of not only to construct toilet but also utilization and hand washing”*

These findings align with prior research that emphasizes the role of information and awareness in promoting sanitation behavior. Kanda et al. (2022) found that perceived health benefits, privacy, and odor control were key enablers of long-term toilet use in Zimbabwe. Similarly, Talat et al. (2023) reported that emotional and functional messaging significantly increased latrine use in rural India. Moreover, Mbemba (2022) noted that peer discussions and community knowledge-sharing outperformed top-down messages in promoting adoption.

**Table 4.12**

*Influence of information on latrine utilizations*

<b>Received information's</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
No	10	5.6
Yes	167	94.4

**Source:** Research data (2024)

#### **4.4.3 Social norms**

The study established the influence of social norms using a five-point Likert scale (1 = strongly agree to 5 = strongly disagree), and results were presented in Table 4-13. The findings showed that the majority (67.8%) of the respondents strongly agreed that using a latrine in the study area was a sign of cleanliness and respect, while 23.7% agreed, and 7.3% were uncertain. Conversely, only 0.6% disagreed and 0.6% strongly disagreed with the idea that using a latrine reflects cleanliness and respect. A mean score of 1.42(SD=0.7), was

observed an illustration of general agreement of participants of associations of using latrine with cleanliness and respect.

This strong agreement may be attributed to the increasing internalization of hygiene norms within the community, likely reinforced by health education campaigns and personal experiences with sanitation-related illnesses. These findings align with studies such as Friedrich et al. (2020), who found that perceptions of cleanliness and social respectability were strong motivators of latrine use in rural India. Similarly, De Shay et al. (2020) observed that community-based interventions, such as participatory sanitation campaigns, helped redefine latrine ownership as a symbol of dignity and modernity. These norms shifted toilet use from being a private act to a public expectation.

When asked whether owning latrine in their community was viewed as high status, most (68.4%) strongly agreed, 12.4% agreed, 11.9% were not sure, and only 7.3% disagreed (Table 4-13). A study recorded mean of 1.58 with standard deviations of 0.963, overall agreement of the respondents with the idea that latrine is associated with high status, and may promote its utilization.

This finding is consistent with studies such as Tiwari et al. (2022), who found that improved toilet types were associated with aspirations of modernity, especially among educated household heads and newly married couples. Similarly, Babbar et al. (2023) reported that both normative expectations and symbolic value of sanitation facilities influenced women's toilet usage in India, especially in public settings where reputation was at stake.

The study found that majority 70.6% of the respondents strongly agreed that most people in their community were using latrine because of perceive benefit like health improvement and cleanness, 19.2% agreed, 4% were neutral, 3,4% strongly disagreed and only 2.8%

disagreed (Table 4-15). The findings could be due to the prevalence and mortality associated with sanitation-related illness as was alluded to in FGD.

One of the participants said that;

*“ I vividly remember the day we lost a relative to diarrhea-related complications. We were left with few options because there was no health facility and no one had the skills we have today by CHVs. To make matters worse, my cousin was given traditional treatments, which quickly led to his death. It was a depressing scene. Following multiple seminars, I discovered that diarrhea is a treatable illness that can be prevented with basic measures like building and maintaining a toilet and practicing good hand hygiene”*

These perceptions are supported by studies such as Talat et al. (2023), who found that emotional and physical benefits including safety, cleanliness, and pride were essential to behavior change. Additionally, Nastiti et al. (2025) highlighted how internal psychosocial factors such as emotional connection to hygiene and habit memory were stronger predictors of latrine use than infrastructure or income levels. These studies reinforce that perceived health benefits and social meaning shape sanitation decisions more deeply than access alone.

**Table 4.13***Influence of social norms on latrine utilization*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percentage</b>	<b>Mean (SD)</b>
<b>Sign of cleanliness and respect</b>			1.42(0.704)
Strongly agree	120	67.8	
Agree	42	23.7	
Neutral	13	7.3	
Disagree	1	.6	
Strongly disagree	1	.6	
<b>Latrine-high status</b>			1.58(0.963)
Strongly agree	121	68.4	
Agree	22	12.4	
Neutral	21	11.9	
Disagree	13	7.3	
Strongly disagree	0	0	
<b>Perceived health benefit</b>			1.49(0.954)
Strongly agree	125	70.6	
Agree	34	19.2	
Neutral	7	4.0	
Disagree	5	2.8	
Strongly disagree	6	3.4	

**Source:** Research data (2024)

#### 4.4.4 Social stigma

The study determined whether social stigma associated with latrine utilizations in study area, and results were demonstrated in Table 4-14. The study showed that most (62.1%) of surveyed populations indicated presence of social stigma associated with not using latrine in study area, 12.4% were not sure while only 25.4% were not aware of such social stigma. Similar findings were echoed in FGD, that open defecation in study area was shame and undignified especially for woman and girls, hence promote usage of toilet as was noted by one the respondents.

*“.... once a mother decided to go to the nearby bush to relieve herself because they didn't have a latrine. However, as she was doing so, his in-laws happened to walk by and see her in her undies. The woman was afraid to confront him ever since because he had witnessed her nakedness and people you respect defecating in an open place are perceived as undignified.”*

The study findings support existing literature on the profound role of social stigma in sanitation behaviors. Gauri et al. (2023) reported that open defecation in rural India was often associated with shame and embarrassment, particularly for women. Similarly, Vogel et al. (2022) found that social disapproval, such as being labeled "dirty" or "uncivilized," significantly encouraged latrine use across South and Southeast Asia. These studies reinforce that social stigma acts as a powerful behavioral motivator in the sanitation decision-making process. The present study reveals similar trends but emphasizes the gendered nature of the stigma, where women in particular face disproportionate social consequences for engaging in open defecation. This aligns with Patkar's (2020) argument

that internalized stigma and gender-based restrictions limit sanitation access for women and girls in rural and peri-urban areas.

**Table 4.14**

*Influence of social Stigma on latrine utilizations*

<b>Social stigma</b>	<b>Frequency(N=177)</b>	<b>Percent (100%)</b>
No	45	25.4
Not sure	22	12.4
Yes	110	62.1

**Source:** Research data (2024)

#### **4.4.5 Social support**

The study determined the influence of social support on latrine utilizations, and results were depicted in Table 4.15. The study found that (97.7%) of respondents have received support or advice about using latrines from community leaders, community members, or healthcare workers, whereas only 2.3% had not received any support or advice, as shown in Table 4.15. Similar findings were noted in the Focus Group Discussions (FGD), where participants highlighted the essential role of community leaders and health workers in promoting latrine usage.

One participant stated,

*"The community leaders and health workers have been very helpful in encouraging us to use latrines properly, and their guidance has made a big difference in our sanitation practices."*

The results align with Lenai, Mabonga, and Mateyo (2021), who found that community support, especially from local leaders and health workers, was critical for sustaining Open Defecation Free (ODF) status in Butere Sub-County, Kenya. Similarly, Mutreja (2020) demonstrated that involving local stakeholders in Uganda improved the effectiveness of

sanitation programs, as community-driven interventions tailored to local needs were shown to be more successful. Vigh et al. (2020) similarly reported that local stakeholder involvement was crucial in Mozambique, where community-based interventions were associated with sustained improvements in sanitation practices. Additionally, Asnake and Adane (2020) observed in semi-urban areas of Ethiopia that regular sanitation messages and support from community health workers resulted in higher latrine usage rates.

Further, the study also examined whether respondents were aware of community programs in the study area that encourage the construction and use of latrines, as shown in Table 4-15. The majority, 83.1%, were aware of such programs, while 16.9% were not. This finding was reinforced during the Focus Group Discussions (FGD), where participants expressed that community programs played a vital role in educating people about the importance of latrine construction and use.

One participant mentioned,

*"We learned about the programs through local meetings and healthcare workers. These programs helped many of us understand the importance of having proper latrines."*

Another participant shared,

*"Awareness of these programs has led to more people in our area constructing latrines, which has significantly improved sanitation."*

Similar studies have underscored the critical role of community awareness programs in driving latrine adoption. Lenai et al. (2021) found that community mobilization efforts in Kenya significantly enhanced the adoption of latrine use and hygiene practices. Mutreja (2020) also highlighted the positive impact of community-based education programs in

Uganda, especially when health workers and community leaders worked together to inform people about sanitation practices. Vigh et al. (2020) in Mozambique emphasized that integrating local customs and community-driven solutions played a pivotal role in ensuring the success of sanitation programs. Asnake and Adane (2020) also observed that community programs promoting latrine use in Ethiopia were key to increasing utilization rates.

**Table 4.15**

*Influence of social support on latrine utilization*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
<b>Received Community support</b>		
No	4	2.3
Yes	173	97.7
<b>Awareness of Community programs</b>		
No	30	16.9
Yes	147	83.1

**Source:** Research data (2024)

#### **4.4.6 Government policies**

The study established influence of Government policies on latrine utilization, and resulted showed as in Table 4-16. Respondents were required to identified whether they were aware of government policies, the most 91% were aware, however 9% were not aware of government policies in study area. Of 91%(n=161) who aware of policies, when asked to rate level of effectiveness of the policies, about half 46.6% identified very effective, 34.8% effective, 13.7% where not sure and 5% reported to be ineffective. The high level of awareness (91%) can be attributed to active government communication through local

leaders, health workers, and community meetings, as noted in FGDs. As one participant stated,

*"Government efforts to spread awareness through community leaders have been crucial."*

The majority considered the policies effective because they felt these programs were directly linked to improvements in sanitation and public health. The high effectiveness ratings indicate that the policies align with the community's needs and have a significant impact on their daily lives. The study findings support Mehrotra (2021) and Friedrich et al. (2019), where effective government policies, backed by behavior change communication and community support, led to improved sanitation behavior.

However, they disagree with Rodrigues et al. (2022) and Chikozho et al. (2019), who highlight the limitations in policy implementation due to political fragmentation and weak infrastructure, especially in marginalized areas, which may hinder the effectiveness of such policies in some contexts.

**Table 4.16**

*Influence of Government of policies on latrine Utilization*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
<b>Awareness of Government policies</b>		
No	16	9.0
Yes	161	91.0
<b>Effectiveness of Government policies(N=161)</b>		
Effective	56	34.8
Ineffective	8	5.0

Neutral	22	13.7
Very effective	75	46.6

**Source:** Research data (2024)

#### 4.4.7 Pearson Chi-Square test of associations of social factors and Latrine utilizations

The study Pearson chi-square test of association of social factors and latrine utilizations was conducted at 95% Confidence Interval (CI), and findings were as presented in Table 4-17. The study showed that societal network did not have a significant association with latrine utilization ( $\chi^2 (1) = 0.410, p = 0.552$ ). This lack of significance might be due to the fact that societal networks, while important for social cohesion, do not necessarily translate into practical behavioral change regarding sanitation practices.

The presence of a societal network may not directly correlate with individuals adopting specific health behaviors like latrine use. Social networks can influence general behavior but may not be sufficient if there are other cultural or economic barriers preventing latrine utilization. Similarly, receiving information about latrines had no significant influence on their utilization ( $\chi^2 (1) = 0.960, p = 0.327$ ).

The lack of effect could be due to the way information is communicated, its relevance, or how well it aligns with local cultural norms and practices. A strong and significant association was found between viewing latrines as a sign of cleanliness and respect and their utilization ( $\chi^2 (4) = 48.404, p < 0.001$ ). This suggests that cultural perceptions and social norms around cleanliness and respect play a pivotal role in encouraging latrine use. When individuals view latrines as a mark of personal and social respect, they are more motivated to adopt them. Similarly, viewing latrines as a status symbol significantly influenced latrine

utilization ( $\chi^2 (3) = 20.678, p < 0.001$ ). This finding may be due to the human tendency to adopt behaviors that are associated with higher social standing or prestige

The perceived health benefits of latrine use had a strong significant association with latrine utilization ( $\chi^2 (4) = 43.382, p < 0.001$ ). This finding is consistent with the idea that when individuals understand the health risks associated with poor sanitation, they are more likely to take action to protect their health. Health education plays a significant role in motivating people to adopt safer sanitation practices, as it directly addresses personal well-being.

The presence of social stigma was also found to significantly affect latrine utilization ( $\chi^2 (2) = 56.212, p < 0.001$ ). Respondents who reported the presence of social stigma were more likely to utilize latrines. The perception that not using a latrine can lead to social exclusion or embarrassment may drive individuals to adopt latrine use to maintain their social standing. The study also found that community support did not have a significant impact on latrine utilization ( $\chi^2 (1) = 0.200, p = 0.654$ ). While community support can encourage behaviors in some contexts, it may not be enough if individuals do not feel the immediate need or if there are other barriers to using latrines, such as financial limitations or a lack of proper infrastructure. However, awareness of government policies was significantly associated with increased latrine utilization ( $\chi^2 (1) = 5.555, p = 0.018$ ), illustrating that informed individuals were more likely to utilize latrines. This indicate that, when individuals are aware of government policies or programs that provide support for latrine construction or maintenance, they are more likely to take advantage of these resources and adopt proper sanitation practices.

**Table 4.17***Influence of social factors on latrine utilization*

<b>Social factors</b>	Categories	<b>Latrine utilizations</b>		<b>Statistical significance (95% CI)</b>
		Unutilized (N=114) (64.4%)	Utilized (N=63) (35.6%)	
<b>Societal network</b>	No	6(3.4%)	2(1.1%)	$X^2= 0.410$ df= 1
	Yes	108(61.0%)	61(34.5%)	p=0.552
<b>Received information's</b>	No	5(2.8%)	5(2.8%)	$X^2= 0.960$ df= 1
	Yes	109(61.6%)	58(32.8%)	p=0.327
<b>Social norms</b>				
Sign of cleanliness and respect	Strongly agree	97(54.8%)	23(13%)	$X^2= 48.404$ df= 4
	Agree	11(6.2%)	31(17.5%)	p=0.000**
	Neutral	4(2.3%)	9(5.1%)	
	Disagree	1(0.6%)	0	
	Strongly disagree	1(0.6%)	0	
Latrine-high status	Strongly	91(51.4%)	30(16.9%)	$X^2= 20.678$

	agree			df= 3
	Agree	8(4.5%)	14(7.9%)	p=0.000**
	Neutral	8(4.5%)	13(7.3%)	
	Disagree	7(4%)	6(3.4%)	
Perceived health benefit	Strongly	97(54.8%)	28(15.8%)	$X^2= 43.382$
	agree			df= 4
	Agree	6(3.4%)	28(15.8%)	p=0.000**
	Neutral	5(2.8%)	2(1.1%)	
	Disagree	2(1.8%)	3(1.7%)	
	Strongly	4(2.3%)	2(1.1%)	
	disagree			
<b>Social Stigma</b>	No	13(7.3%)	32(18.1%)	$X^2= 56.212$
	Not sure	7(4%)	15(8.5%)	df= 2
	Yes	94(53.1%)	16(9.0%)	p=0.000**
<b>Received Community support</b>	No	3(1.7%)	1(0.6%)	$X^2= 0.200$
	Yes	111(62.7%)	62(35%)	df= 1
				p=0.654
<b>Awareness of Government policies</b>	No	6(3.4%)	10(5.6%)	$X^2= 5.555$
	Yes	108(61.0%)	53(29.9%)	df= 1
				p=0.018*

\*-p-value<0.05, \*\* p-value<0.001

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**Source:** Research data (2024)

#### 4.4.8 Regression analysis.

The study further conducted binary regression analysis as 95 % CI, to determined unadjusted and adjusted odds of relationship of social aspects and latrine utilizations. The results were depicted in Table 4-18. In the univariate analysis, as shown in Table 4.20, those with a societal network were 1.694 times more likely to utilized toilets (OR = 1.694, 95% CI [.332, 8.655],  $p = 0.526$ ) compared to the reference group, which did not have a societal network. The effect was statistically insignificant. Results showed that participants who perceived latrines as a sign of cleanliness and respect had an increased unadjusted odds ratio of 3.402 (OR = 3.402, 95% CI: 1.999 - 5.791,  $p < 0.001$ ), suggesting that individuals who agreed with this perception were more than three times as likely to utilize latrines compared to those who did not. Additionally, those perceived that latrine use as a status symbol were 1.745 times more likely to utilize latrines (OR = 1.745, 95% CI [1.260, 2.417],  $p = 0.001$ ).

Furthermore, those who agreed in the health benefits of latrine use had increased the likelihood of utilization by 1.618 odds (OR = 1.618, 95% CI [1.154, 2.270],  $p = 0.005$ ) compared to those who disagreed. As shown in Table 4-20, participants who acknowledge social stigma were 0.072 times less likely to use latrines (OR = 0.072, 95% CI [.034, .153],  $p < .001$ ) compared to those who did not acknowledge stigma. Those with social support were 1.676 times more likely to use latrines (OR = 1.676, 95% CI [.171, 16.455],  $p = .658$ ) compared to those without, though this relationship was not statistically significant

In multivariate analysis, other variables were statistically insignificant except; a societal network, latrine use as a sign of cleanliness and respect and social stigma. Having a societal network significantly increased the 9.73 odds of latrine utilization (AOR = 9.793, 95% CI [1.369, 70.035],  $p = 0.023$ ). This emphasizes the critical role that social support plays in

encouraging positive sanitation behaviors. As seen in Pakhtigian et al. (2022) and Chambers et al. (2021), individuals with strong social ties and those embedded in networks where latrine use is normative are more likely to adopt similar behaviors.

Viewing latrine use as a sign of cleanliness and respect also had a significant effect (AOR = 2.708, 95% CI [1.363, 5.384],  $p = 0.004$ ). Those who perceived latrine use a sign of cleanliness and respect were 2.7 times more likely to use them, emphasizing the role of cultural and social norms in shaping sanitation practices. The study's finding aligns with the study of Friedrich et al. (2020) and Tamene and Afework (2021) that comment latrine use is strongly influenced by social norms surrounding cleanliness and respect.

On other hand the study found that social stigma had the strongest positive effect on latrine use (AOR = 12.084,  $p < 0.001$ ). This shows that individuals who acknowledge social stigma associated with open defecation were 12.08 times more likely to adopt and use latrines, underscoring the powerful role of social norms and the desire to avoid social exclusion in shaping sanitation behaviors. Recognition of negative social perceptions or the fear of being stigmatized can act as a strong motivator for behavior change. The study results contrasts with traditional perspectives that view stigma solely as a deterrent to adopting sanitation behaviors. Previous studies by Gauri et al. (2023) and Vogel et al. (2022) identified stigma as a barrier to latrine use, particularly for marginalized groups.

**Table 4.18:***Regression analysis for social factors influencing latrine utilization*

<b>Utilization of latrines</b>							
<b>Social factors</b>	<b>Categories</b>	<b>Unadjusted Odds Ratio (95% CI)</b>	<b>p-value</b>	<b>Adjusted Odds Ratio (95% CI)</b>	<b>p-Value</b>		
<b>Societal network</b>	No	Ref			1		
	Yes	1.694 (0.332-8.655)	0.526	9.793 (1.369-70.035)	<b>0.023</b>		
<b>Received information's</b>	No	Ref					
	Yes	0.532 (0.148-1.914)	0.334	1.323 (.229-7.659)	0.755		
Sign of cleanliness and respect	Agreement	3.402(1.999-5.791)	<b>0.000</b>	2.708(1.363-5.384)	<b>.004</b>		
Status	Agreement	1.745(1.260-2.417)	<b>0.001</b>	1.240(0.798-1.926)	<b>.338</b>		
Health benefit	Agreement	1.618(1.154_2.270)	<b>0.005</b>	.726(0.424-1.243)	<b>.243</b>		
<b>Social Stigma</b>	No/not sure	Ref					
	Yes	.072 (0.034-0.153)	<b>0.000</b>	12.084 (5.167-28.261)	<b>0.000</b>		
<b>Social support</b>	No	Ref			1		
	Yes	1.676 (0.171-16.455)	0.658	1.182(0.058-23.936)	.913		

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<b>Government policies</b>	No	Ref		1	
	Yes	0.294 (0.102- 0.853)	<b>0.024</b>	1.909(0.458-7.952)	<b>.375</b>

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Note: Ref = Reference category. p-values < 0.05 indicate statistical significance

Source: Research data (2024)

#### 4.5 Cultural Factors Influencing Latrine Utilizations

The study established influence of cultural taboos, cultural acceptance, cultural barriers, and belief systems on the promotion of latrine utilizations.

##### 4.5.1 Cultural taboo

The study sought to investigate the impact of cultural taboos and customs on latrine utilization in the study area. As presented in Table 4.19, a significant majority of the respondents (64.4%) identified cultural taboos as having a notable influence on latrine use, while 35.6% felt that these taboos did not affect latrine adoption. This indicates that cultural beliefs and traditional customs continue to play a dominant role in shaping sanitation practices in the community. Focus Group Discussions (FGDs) provided further insights, with participants revealing that cultural beliefs surrounding hygiene, privacy, and the handling of human waste are deeply entrenched in the community. For instance, one participant mentioned,

*“In our culture, there are beliefs about who is allowed to use certain spaces, especially those related to sanitation. Some families refuse to use latrines because they believe it’s wrong for certain people, like the elderly or women, to be seen using them, or they fear that it might bring bad luck.”*

Another participant explained,

*“We’ve always used the bush for toilets, and many people are reluctant to change, thinking that using latrines is against our traditions.”*

These study findings resonate with study by Adjibolosoo et al. (2020) found that in rural Ghana, cultural taboos and traditional hygiene views led to widespread open defecation, particularly among women and children. Similarly, Kipngeno et al. (2024) in Kenya and Nkatha et al. (2020) in Meru emphasized how privacy concerns and gender-specific taboos influenced communal latrines due to beliefs of impurity.

**Table 4.19**

*Influence of cultural taboos on latrine utilization*

Cultural taboos	Frequency	Percentage (%)
No	63	35.6
Yes	114	64.4
<b>Total</b>	<b>177</b>	<b>100.0</b>

**Source:** Research data (2024)

#### **4.5.2 Cultural barriers**

The study assessed presence of cultural barriers that may hinder latrine usage in study area and findings were presented in Table 4-20. The study found that, most (79.7%) of the participants indicated there were no cultural barriers that hinders latrine utilizations, while 20.3% of the respondents were positive that there were cultural barriers that hinder latrine utilizations. The significant proportion 20.3% of respondents who reported the presence of cultural barriers indicated that a notable challenge rooted in cultural traditions. Similar pattern was noted in Focused Group Discussion, that long-standing practices of using open spaces or the bush for defecation, which is seen as more culturally appropriate or "natural."

Additionally, some cultures place restrictions on who can use specific spaces, such as latrines, based on gender, age, or social status. This can lead to reluctance or resistance to using latrines, especially if they are viewed as contrary to cultural norms. One participant in the Focus Group Discussions (FGD) noted,

*"In our village, the elders believe that only certain people can use the latrine, and others are discouraged from doing so due to cultural beliefs about who should go where." Another participant added, "We've always used the bush, and it's hard to convince people to switch to latrines, especially because some think it goes against our traditions."*

This study finding aligns with the literature from Eliud et al. (2022) and Kefeni & Yallew (2018), where cultural norms, especially regarding gender, significantly influenced latrine usage. However, the present study reveals a less pronounced cultural barrier compared to studies like Godana & Mengistie (2017) and Belete et al. (2024), where cultural taboos, such as fears of impurity and the perception of latrines as "houses of evil spirits," were more pervasive, particularly in rural and pastoralist communities.

**Table 4.20**

*Influence of cultural barriers on latrine utilization*

<b>Cultural barriers</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
No	141	79.7
Yes	36	20.3
Total	177	100.0

**Source:** Research data (2024)

### **4.5.3 Cultural beliefs**

The participants were asked to indicate their level of agreement with a series of cultural belief statements related to sanitation practices, using a five-point Likert scale ranging from

1 (Strongly Agree) to 5 (Strongly Disagree). The responses were analyzed and the findings are presented in Table 4.21.

The study showed that majority 52% of participants disagreed with fact that open defecation is cultural acceptable, 13.6% strongly disagreed and 5.1% were uncertain. However, 16.4% and 13% strongly agreed and agreed with notion that OD is cultural acceptable. The disparity in response could be associated with deep rooted customs, on sanitation practices. A study recorded a mean of 3.33 (SD=1.318), indicating a general disagreement among participants regarding the cultural acceptability of open defecation.

This suggests that, overall, the community is moving away from considering open defecation as culturally acceptable, but there are still individuals who hold onto the tradition due to cultural inertia or a lack of awareness of the health risks associated with OD. While there is an overall trend toward rejecting OD as culturally acceptable, the presence of strong agreement among some respondents indicates that cultural customs continue to play a significant role in shaping attitudes toward sanitation.

This finding aligns with studies by Busienei et al. (2019), who observed that over 70% of residents in Turkana County, Kenya, practiced OD not due to infrastructure deficits, but due to deeply rooted cultural and spiritual beliefs. Similarly, Soboksa et al. (2021) noted that despite improved access to latrines, 35.7% of child feces were still disposed of unsafely in Jimma, Ethiopia, because of the prevailing belief that children's waste is harmless. The results also resonate with Nanyim et al. (2024), who reported that persistent cultural taboos, like beliefs in spiritual contamination and ancestral honor, continue to hinder latrine adoption.

When asked whether men and women should not mix their feces, majority 68.4% of the respondents strongly disagreed, 8.5% disagreed and 3.4% were not sure. Conversely, 16.9% of the respondents and 2.8% strongly agreed with notion male and female feces should not mix. A mean of 4.23 with standard deviations of 1.264, was observed an indication of general disagreement among participants that mixing feces as predictor of latrine utilizations. However, the study noted from FGD, that some community in study area considered mixing of feces of woman and that of warriors was sacred. A participant alluded that,

*“... this is especially true for the Moran, whose community feels that they are unable to relieve themselves. One of the respondents described the challenges in addressing warriors about sanitation; the communities saw them as sacred sharing toilet with woman and children...”*

This finding mirrors Wasonga et al. (2022), who found that in Kenya, there was a strong taboo against mixing male and female feces, leading to separate latrines for men and women. Similarly, Nanyim et al. (2024) also found that taboos around the mixing of male and female feces contributed to open defecation practices. Moreover, Kipngeno et al. (2024) highlighted how societal norms regarding decency and privacy discouraged shared sanitation facilities, thus encouraging open defecation.

The findings showed that (55.9%) of the respondents strongly disagreed that children feces were considered harmless and no harm if they defecate in an open place, 14.1% disagreed, and 14.1% were uncertain. Only 9.6% strongly agreed and 6.2% agreed, that children feces are harmless. At mean of 1.999(SD=1.35) demonstrated that general disagreement among respondents that children feces were not safe and thus promote utilization of toilet facilities. The findings align with Soboksa et al. (2021), who also reported that in areas implementing

Community-Led Total Sanitation (CLTS) in Ethiopia, a significant proportion of respondents continued to dispose of child feces unsafely due to the belief that children's waste is harmless. Additionally, Busienei et al. (2019) noted that some communities viewed latrines as inappropriate due to the perceived "purity" of children's waste,

When required to rate level of agreement with acceptability to share toilet with in-laws, the large proportion (65%) of the respondents strongly disagreed, 11.9%, 10.7%, 6.8% and 5.6% of the participants agreed, disagreed, strongly agreed and not sure respectively. Study found a mean 4.15 (SD=1.330), showing that sharing latrine had no influence on latrine utilization among participants. However, from interviews study noted contrary findings that some community members still discourage sharing toilet with in-laws. A participant noted that,

*“.. some community members believed that sharing toilet is curse, and may affect reproductions”*

This reflects findings from Wasonga et al. (2022), who noted that in some communities in Kenya, separate toilets for in-laws were required due to cultural beliefs around the mixing of familial waste. Similarly, Leong (2020) found that deeply rooted cultural beliefs about the appropriateness of sharing toilets played a significant role in the acceptance of latrine use. The cultural importance placed on avoiding in-law relationships in sanitation issues echoes findings from Vyas and Spears (2022), who noted the importance of cultural traditions in sanitation practices.

The study found that, most (56.5%) of the strongly disagreed with the fact defecating in open place signify continuation of ancestors, while 6.8% disagreed and 5.6% were not sure. About a third 15.8% and 15.3% strongly agreed and agreed respectively, with idea that OD signifies Continuations of ancestors This finding is in line with Coffey et al. (2014), who

emphasized that OD is often a “revealed preference” influenced by cultural norms, including beliefs about ritual purity and ancestral customs. Moreover, Busienei et al. (2019) observed that open defecation is often associated with spiritual purity and naturalness

**Table 4.21**

*Influence of cultural beliefs on latrine utilization*

<b>Cultural beliefs</b>	<b>Frequency (N=177)</b>	<b>Percentage</b>	<b>Mean (SD)</b>
<b>Open Defecation is acceptable</b>			<b>3.33 (1.318)</b>
Strongly agree	29	16.4%	
Agree	23	13.0%	
Neutral	9	5.1%	
Disagree	92	52.0%	
Strongly disagree	24	13.6%	
<b>Woman and men feces should not mix</b>			<b>4.23 (1.264)</b>
Strongly agree	5	2.8%	
Agree	30	16.9%	
Neutral	6	3.4%	
Disagree	15	8.5%	
Strongly disagree	121	68.4%	
<b>Child feces harmless</b>			<b>4.01 (1.347)</b>
Strongly agree	17	9.6%	
Agree	11	6.2%	
Neutral	25	14.1%	

Disagree	25	14.1%
Strongly disagree	99	55.9%
<b>Not acceptable to share latrine</b>		<b>4.15 (1.330)</b>
Strongly agree	12	6.8%
Agree	21	11.9%
Neutral	10	5.6%
Disagree	19	10.7%
Strongly disagree	115	65.0%
<b>OD signifies continuation of ancestors</b>		<b>3.73 (1.607)</b>
Strongly agree	28	15.8%
Agree	27	15.3%
Neutral	10	5.6%
Disagree	12	6.8%
Strongly disagree	100	56.5%

**Source:** Research data (2024)

#### 4.5.4 Cultural acceptance

The study assessed the acceptance of latrines in the study area and explored the possible reasons influencing this acceptance. The results are summarized as in Table 4.22. When respondents were asked about the acceptability of latrines in their community, a significant proportion of (66.1%) of respondents reported that latrines were accepted, while 14.7% considered them very acceptable. Additionally, 7.9% of respondents were unsure about their acceptability, and 11.3% of participants identified latrines as not acceptable at all.

These findings indicate that latrines are generally accepted in the community, with most respondents acknowledging their importance. However, there remains a considerable portion (11.3%) of the population who either reject or do not fully embrace latrine usage, which may be linked to traditional practices or a lack of awareness and resources. The 7.9% of respondents who were unsure about the acceptability of latrines could reflect confusion or mixed feelings, possibly due to limited exposure or education on latrine usage. A similar pattern was reported by Belete et al. (2024), who noted that cultural views and mobile pastoralist lifestyles in Ethiopia led to resistance in latrine adoption. Authors commented that the mobility of pastoralist communities, along with cultural perceptions of latrines as 'houses of evil spirits,' contributed to lower latrine usage.

The study further explored the reasons behind these varying levels of acceptance. As shown in Table 4.22 the overwhelming majority (84.7%) cited the lack of resources as the main barrier to latrine usage, which suggests that economic constraints or inadequate infrastructure may be hindering latrine adoption. The relatively lower percentages for cultural beliefs (5.6%) and lack of awareness (7.9%) indicate that these factors are less significant in comparison to the issue of resources. This suggests that if resources were made more available, there would likely be a higher rate of latrine acceptance, even among those who may be somewhat reluctant or uncertain.

Additionally, the study examined whether specific groups, such as women, the elderly, or children, were less likely to use latrines due to cultural reasons. As shown in Table 4-22, most respondents (88.1%) denied that these groups faced cultural barriers to latrine usage, while only 11.9% believed that cultural factors made these groups less likely to use latrines. The 11.9% of respondents who believed there were cultural barriers could reflect isolated

instances or specific cultural practices that still influence sanitation behaviors in certain households or subgroups. This finding contrasts with numerous studies in the literature, which emphasize cultural taboos, gender norms, and spiritual beliefs as significant barriers, especially for women and children (Adjibolosoo et al., 2020; Gauri et al., 2023; Vogel et al., 2022; Godana & Mengistie, 2017).

**Table 4.22**

*Influence of latrine acceptance on its utilization*

<b>Variable</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
<b>Latrine acceptance</b>		
Accepted	117	66.1
Neutral	14	7.9
Very accepted	26	14.7
Not accepted at all.	20	11.3
<b>Reason acceptances</b>		
Cultural beliefs	10	5.6
Lack of awareness	14	7.9
Lack of resources	150	84.7
Technical know how	3	1.7
<b>Vulnerable group</b>		
No	156	88.1
Yes	21	11.9

**Source:** Research data (2024)

#### **4.5.5 Test of association of Cultural factors and latrine utilizations**

The Pearson chi-square test of association of cultural factors and latrine utilizations was computed at 95% Confidence Interval (CI), and findings were as presented in Table 4-23. The study revealed a significant relationship between cultural taboos and latrine utilization ( $\chi^2 (1) = 45.516, p < 0.001$ ), highlighting that cultural beliefs play a substantial role in determining whether individuals in the study area adopt latrine usage.

This relationship may be due to the deep-rooted cultural norms and traditional practices that influence community behaviors around sanitation. Cultural barriers, such as traditional customs and perceptions about sanitation, were also found to significantly impact latrine utilization ( $\chi^2 (1) = 5.821, p = 0.016$ ). These findings suggest that cultural norms may either facilitate or hinder the adoption of latrines, with certain taboos acting as barriers to improved sanitation practices. This is explained by the fact that people often align with practices that are culturally familiar or traditionally accepted, which may discourage them from embracing newer sanitation solutions like latrines. Studies by Adjibolosoo et al. (2020), and Godana and Mengistie (2017) found similar cultural taboos in rural settings, highlighting the deep-rooted nature of cultural beliefs hindering latrine adoption.

Further analysis of specific cultural beliefs revealed several significant associations with latrine usage. The belief that open defecation is acceptable was found to be significantly associated with reduced latrine utilization ( $\chi^2 (4) = 32.887, p < 0.01$ ). This may be due to the long-standing cultural practice of open defecation, which has become normalized in some communities. Such practices, when deeply ingrained, may be difficult to change, leading to a reluctance to adopt latrines. Additionally, the belief that women's and men's feces should not mix ( $\chi^2 (4) = 16.125, p = 0.003$ ) was significantly related to latrine use. This belief may

be due to cultural or religious reasons that promote gender-specific spaces, and it can result in the preference for separate latrines for men and women, complicating efforts to promote shared latrines. Furthermore, the belief that child feces are harmless ( $\chi^2 (4) = 42.296, p < 0.001$ ) also had a significant impact on latrine usage. This belief may be due to traditional views that children are not seen as needing the same level of sanitation care as adults, thus reducing the perceived necessity for latrines to handle child feces.

Moreover, the belief that it is unacceptable to share a latrine ( $\chi^2 (4) = 21.994, p < 0.001$ ) and the notion that open defecation signifies the continuation of ancestors ( $\chi^2 (4) = 48.706, p < 0.001$ ) further illustrate the deep cultural attachment to traditional practices. These beliefs may be due to the symbolic and spiritual significance attached to open defecation in some communities, where it is seen as a way of maintaining ancestral ties or preserving cultural identity. These attitudes hinder the widespread adoption of latrines, especially shared or communal ones, as they are seen as contrary to cultural customs. The study by De et al. (2021) and Kwiringira et al. (2023) echoed these findings, where open defecation and traditional sanitation practices were seen as more acceptable than adopting modern latrines due to deeply rooted cultural beliefs.

In addition to cultural beliefs, the study found a statistically significant association between latrine acceptance and latrine utilization ( $\chi^2 (3) = 29.502, p < 0.001$ ), emphasizing the importance of cultural acceptance in promoting latrine use. This association may be explained by the fact that communities that culturally accept latrines are more likely to adopt and use them. Latrine acceptance often correlates with understanding the benefits of proper sanitation and seeing latrines as a necessary part of daily life. Conversely, the study found no statistically significant association between vulnerability (such as being a woman, child,

or elderly) and latrine utilization ( $\chi^2 (1) = 2.929, p = 0.087$ ), suggesting that factors like resource availability and cultural acceptance are more influential in determining latrine usage than vulnerability alone. This aligns with findings from Mbemba (2022) and Talat et al. (2023), who also pointed out that cultural acceptance of latrines, rather than individual vulnerability, influenced latrine adoption more strongly.

**Table 4.23***Influence of Cultural factors on latrine utilization*

Cultural factors	Categories	Latrine utilizations		Statistical significance (95% CI)
		Unutilized (N=114) (64.4%)	Utilized (N=63) (35.6%)	
<b>Cultural taboos</b>	No	20(11.3)	43(24.3%)	X <sup>2</sup> = 45.516 df = 1 p=0.000
	Yes	94(53.1%)	20(11.3%)	
<b>Cultural barriers</b>	No	97(54.8%)	44(24.9)	X <sup>2</sup> = 5.821 df = 1 p=0.016
	Yes	17(9.6%)	19(10.7)	
<b>Cultural beliefs</b>				
Open Defecation is acceptable	Strongly Disagree	7(4%)	17(9.6%)	X <sup>2</sup> = 32.887 df = 4 p=0.000
	Disagree	74(41.8%)	18(10.2%)	
	Neutral	7(4%)	2(1.1%)	
	Agree	8(4.5%)	15(18.5%)	
	Strongly Agree	18(10.2%)	11(6.2%)	
	Agree			
Woman and men	Strongly	87(49.2%)	34(19.2%)	X <sup>2</sup> = 16.125

feces should not mix	Disagree			df = 4
				p=0.003
	Disagree	6(3.4%)	9(5.1%)	
	Neutral	5(2.8%)	1(0.6%)	
	Agree	12(6.8%)	18(10.2%)	
Child feces harmless	Strongly	83(46.9%)	16(9%)	X <sup>2</sup> = 42.296
	Disagree			df = 4
	Disagree	8(4.5%)	17(9.6%)	p=0.000
	Neutral	13(7.3%)	12(6.8%)	
	Agree	6(3.4%)	5(2.8%)	
Not acceptable to share latrine	Strongly	88(49.7%)	27(15.3%)	X <sup>2</sup> = 21.994
	Disagree			df = 4
	Disagree	7(4.0%)	12(6.8%)	p=0.000
	Neutral	5(2.8%)	5(2.8%)	
	Agree	8(4.5%)	13(7.3%)	
OD signifies continuation of	Strongly	6(3.4%)	6(3.4%)	
	Agree			
	Strongly	85(48%)	15(8.5%)	X <sup>2</sup> = 48.706
	Disagree			df = 4

ancestors				p= 0.000
	Disagree	7(4%)	5(2.8%)	
	Neutral	6(3.4%)	4(2.3%)	
	Agree	8(4.5%)	19(10.7%)	
	Strongly	8(4.5%)	20(11.3%)	
	Agree			
<b>Latrine acceptance</b>	Accepted	90(50.8%)	27(15.3%)	X <sup>2</sup> = 29.502
	Neutral	8(4.5%)	6(3.4%)	df = 3
	Very	6(3.4%)	20(11.3%)	p= 0.000
	accepted			
	Not	10(5.6%)	10(5.6%)	
	accepted at			
	all.			
<b>Vulnerable Group</b>	No	104(58.8%)	52(29.4%)	X <sup>2</sup> = 2.929
	Yes	10(5.6%)	11(6.2%)	df = 1
				p= 0.087

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**Source:** Research data (2024)

#### 4.5.6 Regression analysis.

A bivariate analysis was further conducted at 95% Confidence Intervals to explore the strength of association of cultural factors and latrine utilization. The findings were depicted in unadjusted odds ratio for univariate regression and adjusted odds ratio for multivariate analysis as in Table 4.24. In univariate analysis, as shown in Table 4.4, respondents who indicated the presence of cultural taboos were 0.099 times less likely to utilize latrines compared to those who did not report such taboos (OR = 0.099, 95% CI [0.048, 0.203],  $p < 0.001$ ). For those who acknowledged cultural barriers, the odds of utilizing latrines were 2.464 times higher than for those who did not perceive such barriers (OR = 2.464, 95% CI [1.170, 5.190],  $p = 0.018$ ). The belief that Open Defecation is acceptable had no significant association with latrine utilization (OR = 1.088, 95% CI [0.863, 1.372],  $p = 0.475$ ). Respondents who disagreed with the notion that women's and men's feces should not mix were 1.352 times more likely to use latrines (OR = 1.352, 95% CI [1.064, 1.717],  $p = 0.014$ ). Those who disagreed that child feces are harmless were 1.888 times more likely to use latrines (OR = 1.888, 95% CI [1.463, 2.437],  $p < 0.001$ ).

Participants who disagreed that it is unacceptable to share latrines were 1.539 times more likely to use them (OR = 1.539, 95% CI [1.216, 1.947],  $p < 0.001$ ). Similarly, respondents who disagreed with the belief that open defecation signifies the continuation of ancestors were 2.045 times more likely to utilize latrines (OR = 2.045, 95% CI [1.635, 2.557],  $p < 0.001$ ). Lastly, those who had a higher level of acceptance of latrines were 1.911 times more likely to use them (OR = 1.911, 95% CI [1.421, 2.570],  $p < 0.001$ ).

In the multivariate analysis, after adjusting for other variables, cultural taboos were found to significantly reduce the likelihood of latrine use, with respondents reporting the presence of

such taboos being 0.255 times less likely to utilize latrines (AOR = 0.255, 95% CI [0.106, 0.615],  $p = 0.002$ ). This suggests that deeply ingrained cultural taboos, likely tied to traditional sanitation practices, significantly hinder the adoption of latrine use. Cultural taboos surrounding sanitation practices may involve beliefs about privacy, gender roles, or the sacredness of certain spaces, which could discourage individuals from using modern sanitation facilities. This barrier remains even after adjusting for other variables, demonstrating its persistent influence on latrine utilization.

The analysis also indicated that the belief that women's and men's feces should not mix was significantly associated with a reduced likelihood of latrine use (AOR = 0.536, 95% CI [0.318, 0.903],  $p = 0.019$ ). This finding could be explained by cultural norms that separate genders in certain sanitation practices, reflecting deeply held beliefs about purity and social order. In communities where such views prevail, the use of a shared latrine may be viewed as improper or taboo, thereby reducing its adoption. On the other hand, the belief that child feces are harmless was positively associated with increased latrine use (AOR = 2.210, 95% CI [1.243, 3.927],  $p = 0.007$ ). This could be explained by a lack of awareness about the health risks associated with child feces, leading individuals who recognize the dangers of child feces to be more inclined to use latrines. This suggests that education about the health implications of improper sanitation, particularly regarding child feces, could encourage greater latrine adoption.

Additionally, the belief that open defecation signifies the continuation of ancestors remained significant in the multivariate analysis (AOR = 1.823, 95% CI [1.213, 2.739],  $p = 0.004$ ). This cultural belief reflects a strong attachment to traditional practices and resistance to change. In many communities, open defecation may be seen as a symbolic connection to

ancestral customs, thus presenting a significant challenge to promoting latrine use. The higher levels of latrine acceptance were consistently associated with increased latrine use (AOR = 1.662, 95% CI [1.135, 2.434],  $p = 0.009$ ), reinforcing the idea that fostering positive attitudes and acceptance of latrines is crucial for improving sanitation behaviors. This suggests that cultural beliefs, when shifted towards more accepting attitudes about modern sanitation, can lead to more widespread latrine utilization

**Table 4.24:***Regression analysis for social factors influencing latrine utilization*

		<b>Utilization of latrines</b>					
<b>Cultural factors</b>	<b>Categorie s</b>	<b>Unadjusted Odds Ratio (95% CI)</b>	<b>p-value</b>	<b>Adjusted Odds Ratio (95% CI)</b>	<b>p-Value</b>		
Cultural taboos	No	Ref	-	-	-		
	Yes	0.099 (0.048- 0.203)	0.0000	0.255 (0.106- 0.615)	0.002		
Cultural barriers	No	Ref	-	-	-		
	Yes	2.464 (1.170- 5.190)	0.018	2.270 (0.796- 6.468)	0.125		
Open Defecation is acceptable	Disagree	1.088 (0.863- 1.372)	0.475	0.783 (0.531- 1.155)	0.218		
	Disagree	1.352 (1.064- 1.717)	0.014	0.536 (0.318- 0.903)	0.019		
Woman and men should not mix	Disagree	1.888 (1.463- 2.437)	0.000	2.210 (1.243- 3.927)	0.007		
	Disagree	1.539 (1.216- 1.952)	0.000	0.870 (0.546- 1.392)	0.557		

acceptable to ent	1.947)			1.386)
share latrine				
OD signifies Disagreement	2.045	(1.635-	0.000	1.823 (1.213-
continuation ent	2.557)			0.004
of ancestors				
Latrine Level of	1.911	(1.421-	0.000	1.662 (1.135-
acceptance acceptance	2.570)			0.009
				2.434)

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Note: Ref = Reference category. p-values < 0.05 indicate statistical significance

**Source:** Research data (2024)

## **4.6 Economic factors influencing latrine utilizations**

The study determined influences of economic aspects such as income level, affordability, economic incentives, and access to resources on the utilization of sanitation facilities.

### **4.6.1 Income of level**

The influence of income level was examined, and findings were presented in Table 4.25. When respondents were tasked to identified how does income level had impact on latrine constructions and maintenance, over half (52%) of the respondents indicated moderate impact, 26.6% slightly impact, while 12.4% nd 9% reported significantly impact and income level does affect effectively. Results showed that income as predictor may not be the sole determinant of latrine utilizations.

Households with moderate incomes might still face challenges in allocating sufficient funds for latrine construction and maintenance, but they may not be as severely impacted as those with lower income level. The varying responses reflect the diverse economic realities within the study area. As submitted in the Focus Group Discussion (FGD), one respondent noted,

*“Income affects everything, including how we build and take care of our latrines. For some, it's hard to afford even the basic materials, so they either delay repairs or don't build at all.”*

These findings align with the studies conducted by Woyessa et al. (2022), Omer et al. (2022), and Bankole et al. (2023), which indicate that income level is a moderate determinant of latrine construction and maintenance. In particular, the study by Ahmed and Ali (2024) corroborates the importance of considering other factors beyond income, as disparities in rural-urban areas and education also greatly impact latrine utilization, even with income as a contributing factor. However, as suggested by Meili et al. (2022), even wealthier

communities struggle with issues related to facility maintenance and management when behavioral and institutional frameworks are weak, suggesting that income alone cannot ensure sustained latrine use.

**Table 4.25**

*Influence of income level on latrine utilization*

<b>Income Level</b>	<b>Frequency (N=177)</b>	<b>Percentage (%)</b>
Does Not Impact	16	9.0
Moderately Impact	92	52.0
Significantly Impact	22	12.4
Slightly	47	26.6
<b>Total</b>	<b>177</b>	<b>100.0</b>

**Source:** Research data (2024)

#### **4.6.2 Influence of pastoralism on latrine utilization**

The study examined the association of nomadic way of way life and latrine utilization, and summarized findings in Table 4.28. The findings showed that a significant proportion (57.1%) of respondents identified pastoralism as their primary occupation, while 42.9% were engaged in other activities as their main source of income. The study further determined whether pastoralism influences construction and maintenance of latrines, as shown in Table 4-28, most 59.1% of participants denied while 40.1% said that pastoralism had influence. These findings were further emphasized in the Focus Group Discussion (FGD), where participants highlighted that the nomadic nature of pastoralism discourages investment in permanent structures such as latrines. This is because families may not reside

in one location long enough to justify the construction and upkeep of such facilities. A participant in the FGD mentioned,

*".. the mobile nature of pastoral communities where household members move with their animals living in their sanitation facilities unattended and with time they can be destroyed by termites and other things."*

The findings align with Barasa & Waldman (2022) and Nyanza et al. (2018), both of which emphasize the significant challenges posed by mobility and cultural factors in the adoption and utilization of latrines. These studies reveal that the nomadic lifestyle of pastoralist communities leads to frequent displacement, which discourages investment in permanent sanitation infrastructure. However, the study's focus on mobility as the primary challenge contrasts with findings by Belete et al. (2024), which observed that lower-income households, despite mobility issues, showed greater consistent latrine use.

**Table 4.26**

*Influence of pastoralism on latrine utilization*

<b>Variable</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
<b>Pastoralism-</b>		
No	101	57.1
Yes	76	42.9
<b>Maintenances influenced by pastoralism</b>		
No	106	59.9
Yes	71	40.1

**Source:** Research data (2024)

### 4.6.3 Financial constraints

The study assessed the influence of financial constraints on the utilization of sanitation facilities, and findings were illustrated in Table 4.27. The study found that most (65%) of the participants were positive that financial constraints affected their ability to maintain and utilize latrine built after CLTS implementation, as compared to a third 35% of the respondents who reported have no financial issues on utilization of latrine. The majority who identified financial limitations as a challenge likely face difficulties in affording necessary maintenance and repairs, purchasing materials, or even constructing latrines in the first place. This may lead to poorly maintained facilities or, in some cases, the complete lack of access to adequate sanitation, which can undermine the health benefits expected from CLTS initiatives as was stated in FGD. A respondent said that,

*“The high cost of materials and repairs makes it hard for us to keep the latrines functional.....”*

The study results align with studies, such as those by Gitonga et al. (2024) in Kenya and Ajemu et al. (2020) in Ethiopia, which show that financial constraints significantly hinder latrine maintenance and utilization. These studies indicate that even when latrines are initially constructed, the lack of funds for repairs, materials, or upgrades leads to poor maintenance and reduced functionality

**Table 4.27**

*Influence of financial constrain on latrine utilization*

<b>Financial constraints influence</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
No	62	35.0
Yes	115	65.0

**Source:** Research data (2024)

#### **4.6.4 Economic incentives**

The study assessed respondents' views on economic incentives influencing sanitation facility utilization using a five-point Likert scale, where 1 represented "strongly agree" and 5 represented "strongly disagree" and results presented as in Table 4.28.

A considerable portion of respondents (32.2%) expressed uncertainty about whether households prioritize sanitation by allocating funds for construction and maintenance. In contrast, 29.9% disagreed, 18.6% agreed, 12.4% strongly disagreed, and 6.8% strongly agreed that they set aside money for sanitation purposes. With a mean of 3.23 (SD = 1.1), there was a general disagreement regarding the prioritization of funds for latrine construction and maintenance.

This suggests that competing needs like food, education, and shelter take precedence, as highlighted in Focus Group Discussions (FGDs), with one participant noting,

*"...the cost of living has been high in recent times, so households living in poverty prioritize daily needs like food over sanitation."*

These findings align with studies emphasizing economic hardship as a significant barrier to latrine ownership and maintenance. Peletz et al. (2021) and Tiwari et al. (2022) similarly found that low-income households often prioritize basic survival needs such as food and

shelter over sanitation infrastructure. This reinforces the idea that competing financial needs often push sanitation to a lower priority for poor households.

Regarding the provision of financial support during the Community-Led Total Sanitation (CLTS) triggering process, a substantial proportion of respondents (45.8%) strongly disagreed with the statement that the community had been promised financial assistance for latrine construction by the implementing organization. Meanwhile, 23.2% strongly agreed, 13.6% agreed, 11.9% disagreed, and 5.6% were neutral. The mean of 3.44 (SD = 1.685) indicated a mixed response, suggesting skepticism or unmet expectations regarding financial support promises. Many participants voiced frustration, with one remarking, "*We were told there would be financial help for constructing latrines, but no one received anything. This has left many of us feeling disillusioned.*" These findings align with the literature indicating that financial constraints are a major barrier to sustaining sanitation initiatives post-CLTS, as noted by Kouassi et al. (2023) and Wasonga et al. (2023).

The study also examined whether economic strategies and financial support enhance latrine utilization. A majority of respondents (39.0%) disagreed, and 22.0% strongly disagreed with the statement, indicating skepticism about the impact of economic strategies and financial support on latrine utilization. Meanwhile, 15.3% agreed, 13.0% strongly agreed, and 10.7% were neutral. The mean of 3.54 (SD = 1.215) reflected a general disagreement, which could be due to past experiences where financial support was either insufficient or ineffectively distributed. This finding aligns with Ochieng et al. (2019), who noted that while financial incentives can enhance latrine utilization, the overall impact is limited unless coupled with comprehensive economic strategies and community engagement.

In examining respondents' views on whether laws and penalties were the primary motivators for maintaining an Open Defecation-Free (ODF) environment, 44.6% strongly disagreed with this assertion. In contrast, 21.5% strongly agreed, indicating that for some, legal and punitive measures were influential. Other responses included 20.3% disagreeing, 9.0% neutral, and 4.5% agreeing. The mean score of 3.62 (SD = 1.588) indicated general disagreement that enforcement measures alone are insufficient to sustain an ODF environment. This finding is consistent with studies by Cagnet (2022) and Jha & Jha (2019), who concluded that legal enforcement is ineffective without community engagement and behavioral change programs. Similarly, Pakhtigian et al. (2022) emphasized that peer influence and community-driven behaviors were stronger than top-down enforcement, reinforcing the idea that legal measures cannot stand alone in ensuring long-term sanitation practices.

The study also assessed the perception that latrines were built for show rather than practical use. The majority of respondents (52.0%) disagreed with this perception, while 23.2% strongly agreed, 18.6% disagreed, 5.1% were neutral, and 1.1% agreed. The mean score of 3.75 (SD = 1.629) suggested that, overall participants disagreed with the notion that latrines were built for appearance rather than practical use. This contrasts with findings by Barasa & Waldman (2022) and Nyanza et al. (2018), where cultural norms and ecological instability led to latrines being seen as temporary or symbolic.

**Table 4.28***Influence of incentives on latrine utilization*

<b>Variables</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>	<b>Mean (SD)</b>
<b>Sanitation priority</b>			<b>3.23(1.100)</b>
Strongly agree	12	6.8	
Agree	33	18.6	
Neutral	57	32.2	
Disagree	53	29.9	
Strongly disagree	22	12.4	
<b>Reward for constructing toilet</b>			<b>3.44(1.685)</b>
Strongly agree	41	23.2	
Agree	24	13.6	
Neutral	10	5.6	
Disagree	21	11.9	
Strongly disagree	81	45.8	
<b>Economic strategies enhance latrine utilization</b>			<b>3.54(1.215)</b>
Strongly agree	23	13.0	
Agree	27	15.3	
Neutral	19	10.7	
Disagree	69	39.0	

Strongly disagree	39	22.0	
<b>Law influence</b>			3.62(1.588)
Strongly agree	38	21.5	
Agree	8	4.5	
Neutral	16	9.0	
Disagree	36	20.3	
Strongly disagree	79	44.6	
<b>Latrine built to show</b>			3.75(1.629)
Strongly agree	41	23.2	
Agree	2	1.1	
Neutral	9	5.1	
Disagree	33	18.6	
Strongly disagree	92	52.0	

**Source:** Research data (2024)

#### 4.6.5 Affordability

The influence of affordability on latrine construction and utilization was explored in the study, with findings as presented in Table 4.29. A majority of respondents (62.7%) expressed neutrality regarding the affordability of latrine construction costs, suggesting varying economic situations within the community. Notably, 15.8% of respondents deemed the costs unaffordable, while 2.3% considered them very unaffordable, indicating a significant financial burden for some households. Conversely, a smaller proportion of respondents found the costs either very affordable (7.3%) or affordable (11.9%). These mixed responses reveal the economic diversity within the community and the challenges

lower-income households face in accessing adequate sanitation. One respondent in the focus group discussion (FGD) stated:

*“...most people in this village are poor and unable to afford to construct sustainable and improved sanitation facilities, and even when they build the local toilet, maintenance costs become a problem. The high cost of construction materials prohibits many households from constructing standard latrines...”*

These results are consistent with existing research on the financial challenges related to latrine construction and maintenance. For instance, Kouassi et al. (2023) found that 65% of sanitation facilities across multiple African nations were not adequately maintained due to financial constraints. Similarly, Ajemu et al. (2020) observed that financial incapacity was a major barrier in Ethiopia, particularly when households could not afford the reconstruction of collapsed latrines.

**Table 4.29**

*Influence of affordability on latrine utilization*

<b>Affordability</b>	<b>Frequency(N=177)</b>	<b>Percentage (%)</b>
Very affordable	13	7.3
Affordable	21	11.9
Neutral	111	62.7
Unaffordable	28	15.8
Very unaffordable	4	2.3

**Source:** Research data (2024)

#### 4.6.6 Resources access

The study assessed whether households had received any financial support or resources for the construction and use of latrines. The findings, as depicted in Table 4.30, indicated that the overwhelming majority of households (90.4%) had not received any external financial support or resources for latrine construction and utilization. Only a small fraction of households (9.6%) had received assistance in this regard. The significant lack of external support is linked to the Community-Led Total Sanitation (CLTS) approach, which promotes self-reliance and local resource utilization for sanitation. As noted during focus group discussions (FGDs), the CLTS methodology encourages communities to use their own resources for latrine construction and maintenance, emphasizing ownership of sanitation solutions.

*“.. we have been conducting awareness and sensitization, encouraging residents need to have pit latrine utilizing own resources”*

**Table 4.30**

*Influence of availability of resource on latrine utilization*

<b>Access to resources</b>	<b>Frequency</b>	<b>Percentage (%)</b>
No	160	90.4
Yes	17	9.6
Total	177	100.0

**Source:** Research data (2024)

#### 4.6.7 Test of association of economic factors and utilizations of sanitation facilities

The Pearson chi-square test of association of economic factors and latrine utilizations was conducted at 95% Confidence Interval (CI), and findings were as presented in Table 4.31.

The study found a strong association between income level and latrine usage ( $\chi^2 (3) = 33.399, p < 0.001$ ), suggesting that higher income is linked to increased latrine use. This relationship implies that individuals with higher incomes are more likely to have access to sanitation infrastructure, either through direct financial capacity or the availability of resources in wealthier areas. Higher-income households tend to have more resources to construct, maintain, and regularly use latrines, which ultimately leads to higher latrine adoption rates. The study also identified a significant relationship between pastoralism and latrine maintenance ( $\chi^2 (1) = 34.822, p < 0.001$ ). Pastoralism, as a livelihood practice, can hinder the consistent use and maintenance of latrines due to the mobility of pastoral communities. These communities typically move with their livestock, making the construction and upkeep of permanent sanitation facilities difficult. This nomadic lifestyle limits the ability of these groups to establish and sustain latrine use, resulting in lower utilization rates compared to more settled populations

Conversely, financial barriers do not have a significant impact on latrine utilization ( $\chi^2(1) = 0.008, p = 0.931$ ). This suggests that financial constraints alone may not be a major factor influencing latrine use in this context. Despite the perception that poverty could prevent the construction or maintenance of latrines, other factors such as cultural beliefs, social norms, and access to resources may play a more dominant role.

Economic incentives were strongly associated with latrine use. The prioritization of sanitation ( $\chi^2(4) = 55.203, p < 0.001$ ) significantly influenced latrine adoption. Communities that prioritize sanitation are more likely to adopt and use latrines, highlighting the importance of community-based programs that emphasize the health benefits of improved sanitation. Similarly, rewards for constructing latrines ( $\chi^2(4) = 52.569, p < 0.001$ ) were

found to significantly boost latrine usage. These incentives encourage people to build and maintain sanitation facilities, increasing overall utilization rates. Moreover, the study found that economic strategies aimed at improving latrine usage, such as subsidies or financial support, significantly impacted adoption rates ( $\chi^2 (4) = 48.602, p < 0.001$ ).

Legal regulations regarding sanitation also had a significant impact on latrine use ( $\chi^2 (4) = 39.990, p < 0.001$ ). Laws that require the installation of latrines or provide penalties for non-compliance contribute to higher latrine adoption. This suggests that legal frameworks can drive changes in behavior and ensure more widespread use of sanitation facilities. Additionally, latrines built as a symbol of status or compliance ( $\chi^2 (4) = 48.663, p < 0.001$ ) were significantly associated with their use, indicating that societal pressures or the desire to conform to social norms can influence latrine adoption.

Affordability was another crucial factor, with a strong association between the affordability of latrines and their use ( $\chi^2 (4) = 59.827, p < 0.001$ ). Latrines that are perceived as affordable are more likely to be used regularly. This underscores the importance of making sanitation infrastructure affordable and accessible to all segments of the population. When latrines are financially within reach, adoption rates are higher, as people are more likely to invest in sanitation when they perceive it as economically viable. The study also found that access to resources ( $\chi^2 (1) = 10.393, p < 0.001$ ) significantly impacts latrine utilization. Communities with greater access to materials, financial resources, or technical support were more likely to build and maintain latrines. This highlights the importance of ensuring that communities have the necessary resources to implement and sustain sanitation improvements

**Table 4.31***Influence of economic factors on latrine utilization*

Economic factors	Categories	Latrine utilizations		Statistical significance (95% CI)
		Unutilized (N=114) (64.4%)	Utilized (N=63) (35.6%)	
Income level	does not impact	2(1.1%)	14(7.9%)	X <sup>2</sup> = 33.399 df = 3 p=0.000
	moderately impact	67(37.9%)	25(14.1%)	
	Significantly impact	8(4.5%)	14(7.9%)	
	slightly impact	37(20.9%)	10(5.6%)	
Maintainance influenced by pastoralism	No	68(38.4%)	38(21.5%)	X <sup>2</sup> = 34.822 df = 1 p=0.000
	Yes	46(26%)	25(14.1%)	
Financial barrier	No	22(12.4%)	40(22.6%)	X <sup>2</sup> = .008 df = 1 p=0.931
	Yes	92(52%)	23(13%)	
Economic incentives				
Sanitation priority	strongly agree	5(2.8%)	7(4.0%)	X <sup>2</sup> = 55.203 df = 4 p=0.000
	Agree	23(13%)	10(5.6%)	
	Neutral	46(26%)	11(6.2%)	
	Disagree	36(20.3%)	17(9.6%)	
	Strongly disagree	4(2.3%)	18(10.2%)	
Reward for constructing toilet	strongly agree	31(17.5%)	10(5.6%)	X <sup>2</sup> = 52.569

	Agree	6(3.4%)	18(10.2%)	df = 4
	Neutral	4(2.3%)	6(3.4%)	p=0.000
	Disagree	4(2.3%)	17(9.6%)	
	Strongly disagree	69(39.0%)	12(6.8%)	
Economic strategies enhance latrine utilization	strongly agree	14(7.9%)	9(5.1%)	X <sup>2</sup> = 48.602
				df = 4
	Agree	6(3.4%)	21(11.9%)	p=0.000
	Neutral	5(2.8%)	14(7.9%)	
	Disagree	58(32.8%)	11(6.2%)	
	Strongly disagree	31(17.5%)	8(4.5%)	
Law influence	strongly agree	29(16.4%)	9(5.1%)	X <sup>2</sup> = 39.990
	Agree	4(2.3%)	4(2.3%)	df = 4
	Neutral	4(2.3%)	12(6.8)	p=0.000
	Disagree	13(7.3%)	23(13%)	
	Strongly disagree	64(36.2%)	15(8.5%)	
Latrine built to show	strongly agree	33(18.6%)	8(4.5%)	X <sup>2</sup> = 48.663
	Agree	0	2(1.1%)	df = 4
	Neutral	6(3.4%)	3(1.7%)	p=0.000
	Disagree	5(2.8%)	28(15.8%)	
	Strongly disagree	70(39.5%)	22(12.4%)	
Affordability	Very affordable	1(0.6%)	12(6.8%)	X <sup>2</sup> = 59.827
	Affordable	12(6.8%)	9(5.1%)	df = 4
	Neutral	93(52.5%)	18(10.2%)	p= 0.000
	Unaffordable	6(3.4%)	22(12.4%)	
	Very unaffordable	2(1.1%)	2(1.1%)	
<b>Access to Resources</b>	No	97(54.8%)	63(35.6%)	X <sup>2</sup> = 10.393
				df = 1

Yes	17(9.6%)	0	p=0.000
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**Source:** Research data (2024)

#### 4.6.8 Regression analysis.

A bivariate analysis was further conducted at 95% Confidence Intervals to explore the strength of association of economic factors and latrine utilization. The findings were depicted in unadjusted odds ratio for univariate regression and adjusted odds ratio for multivariate analysis as in Table 4.32.

In the univariate analysis, income level was found to have a weak association with latrine utilization. Respondents who felt that income level had an impact on latrine usage were 0.845 times less likely to utilize latrines compared to those who felt it had no impact (OR = 0.845, 95% CI [0.446-1.601],  $p = 0.605$ ). This suggests that, in isolation, income level may not be a strong predictor of latrine use. However, financial constraints showed a much stronger association, with those who reported experiencing financial constraints being 0.138 times less likely to utilize latrines compared to those who did not face such constraints (OR = 0.138, 95% CI [0.069-0.270],  $p < 0.001$ ). This highlights the significant role that financial limitations play in hindering latrine adoption, especially in resource-constrained settings. The prioritization of sanitation also emerged as a significant factor in latrine utilization. Respondents who agreed that sanitation is a priority were 1.366 times more likely to use latrines compared to those who disagreed (OR = 1.366, 95% CI [1.020-1.830],  $p = 0.037$ ). This suggests that communities or individuals who prioritize sanitation tend to have better latrine usage rates, emphasizing the importance of community awareness and education in promoting proper sanitation practices.

The analysis of economic incentives revealed mixed results. Participants who agreed with the notion of receiving rewards for constructing toilets were 0.809 times less likely to use latrines compared to those who disagreed (OR = 0.809, 95% CI [0.673 -0.972],  $p = 0.024$ ).

This counterintuitive finding may suggest that rewards alone might not be a strong motivator for latrine use in certain contexts or could reflect the complexity of external incentives in shaping behaviour. Economic strategies for promoting latrine use were also found to be significantly associated with latrine adoption. Respondents who agreed with the implementation of economic strategies were 0.577 times less likely to utilize latrines compared to those who disagreed (OR = 0.577, 95% CI [0.450-0.740],  $p < 0.001$ ), indicating that while economic strategies can be beneficial, their actual effectiveness might vary depending on how they are implemented. Conversely, the perception of latrines as a symbol or for show had no significant association with latrine use (OR = 1.065, 95% CI [0.879-1.291],  $p = 0.520$ ). The affordability of latrines was one of the most significant predictors of latrine utilization. Respondents who found latrines affordable were 8.154 times more likely to use them compared to those who did not find them affordable (OR = 8.154, 95% CI [3.381-19.665],  $p < 0.001$ ). This finding emphasizes the critical role that affordability plays in enabling access to proper sanitation facilities.

In the multivariate analysis, after adjusting for other variables, several economic factors remained significantly associated with latrine utilization. Pastoralism, as an influencing factor, was found to have a strong positive association with latrine use, with those experiencing pastoralism being 6.305 times more likely to utilize latrines (AOR = 6.305, 95% CI [1.650-24.092],  $p = 0.007$ ). This result underscores the unique challenges faced by pastoral communities in maintaining latrine use due to their mobile lifestyle, but it also suggests that pastoralism can be managed or adapted in ways that still allow for effective sanitation practices. However, the unique influence of pastoralism observed here contrasts

with studies like Belete et al. (2024), where mobility and cultural factors in pastoralist communities hinder latrine use.

Financial constraints continued to play a significant role, with respondents facing financial limitations being 0.065 times less likely to use latrines (AOR = 0.065, 95% CI [0.017-0.249],  $p < 0.001$ ), reinforcing the importance of financial support and strategies that alleviate economic burdens for latrine adoption. Those who found latrines affordable were 2.243 times more likely to utilize latrine (AOR = 2.243, 95% CI [1.099-4.581],  $p = 0.028$ ). This reinforces the importance of making latrines economically accessible, suggesting that affordability is a key barrier that, when addressed, can significantly enhance latrine utilization. These findings align with previous studies showing that financial constraints play a major role in latrine utilization (Woyessa et al., 2022; Omer et al., 2022), and suggest that strategies targeting affordability and economic support are crucial for improving sanitation.

The prioritization of sanitation also remained a significant predictor, with those who agreed that sanitation should be a priority being 1.707 times more likely to use latrines (AOR = 1.707, 95% CI [1.124- 2.592],  $p = 0.012$ ). Economic incentives for constructing toilets had a negative association with latrine use in the adjusted analysis.

Those who agreed with receiving rewards for latrine construction were 0.429 times less likely to use latrines (AOR = 0.429, 95% CI [0.264-0.697],  $p = 0.001$ ), which suggests that while rewards may encourage initial construction, they may not be as effective in sustaining long-term latrine usage. Economic strategies for latrine use continued to show a significant impact, with an adjusted odds ratio of 0.612 (AOR = 0.612, 95% CI [0.425-0.880],  $p = 0.008$ ), indicating that well-implemented strategies can have a positive effect on latrine adoption. The affordability of latrines remained a crucial factor. The negative impact of

economic incentives on sustained use (AOR = 0.429) contrasts with findings by Meili et al. (2022) and Bankole et al. (2023), where rewards and community engagement positively influenced latrine maintenance.

**Table 4.32:**

*Regression analysis for Economic factors influencing latrine utilization*

<b>Utilization of latrines</b>						
<b>Economic factors</b>	<b>Categories</b>	<b>Unadjusted Odds Ratio (OR-95% CI)</b>	<b>p-value</b>	<b>Adjusted Odds Ratio (AOR-95% CI)</b>	<b>p-Value</b>	
<b>Income level</b>	No impact	Ref				
	Impact	0.845 (0.446–1.601)	0.605	1.690 (0.693–4.121)	0.249	
<b>Lifestyle</b>	No	Ref				
	Yes	0.973 (0.519–1.823)	0.931	6.305 (1.650–24.092)	<b>0.007</b>	
<b>Financial constraints</b>	No	Ref				
	Yes	0.138 (0.069–0.270)	<b>0.000</b>	0.065 (0.017–0.249)	<b>0.000</b>	
Sanitation priority	Agreement	1.366 (1.020–1.830)	<b>0.037</b>	1.707 (1.124–2.592)	<b>0.012</b>	

Reward for constructing toilet	Agreement	0.809 (0.673–0.972)	<b>0.024</b>	0.429 (0.264–0.697)	<b>0.001</b>
Economic strategies	Agreement	0.577 (0.450–0.740)	<b>0.000</b>	0.612 (0.425–0.880)	<b>0.008</b>
Law influence	Agreement	0.924 (0.762–1.120)	0.419	1.120 (0.590–2.125)	0.729
Latrine built to show	Agreement	1.065 (0.879–1.291)	0.520	1.532 (0.922–.842)	0.093
<b>Affordability</b>	Not-affordable	Ref			
	Affordable	8.15 (3.381–19.665)	<b>0.000</b>	1.619 (0.922–2.842)	<b>0.028</b>

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Note: Ref = Reference category. p-values < 0.05 indicate statistical significance

**Source:** Research data (2024)

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

### **5.0 Introduction**

This chapter provides a summary of the study findings based on factors influencing the latrine utilization in the study area. The section further presents conclusions and recommendations based on the findings.

### **5.1 Summary of the findings**

Despite effort to improve sanitation access in low-income countries including Kenya, study by Busienei *et al.* (2019), have reported lack of utilization of latrine. The study assessed influence of social, cultural, and economic factors in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya. Data was obtained from 177 Households Heads using structured questionnaire and Focused Group Discussions. From findings only 35.6% of latrine was utilized in study area, thus crucial need to improve sanitation services in line with SDG 6.2. The results of the influenced of aspects of latrine utilization were submitted in this section.

#### **5.1.1 Influence of Social factors on latrine utilizations**

The most (95.5%) of the participants were positive that societal network influences latrine utilizations. The study noted various social norms had influence on usage of toilets facilities. Majority 67.8% of the respondents strongly agreed that using latrine in study area was sign of cleanliness and respect. Additionally, majority 70.6% of the respondents strongly agreed that most people in their community were using latrine because of perceive benefit like health improvement and cleanness. Most 62.1% of surveyed populations indicated presence of social stigma associated with not using latrine in study area.

In multivariate analysis, the study found statistically significant associations of societal network (AOR = 9.793, 95% CI [1.369, 70.035],  $p = 0.023$ ); viewing latrine use as a sign of cleanliness and respect (AOR = 2.708, 95% CI [1.363, 5.384],  $p = .004$ ); social stigma (AOR 12.084, 95% CI [5.167, 28.261],  $p < .001$ ) and latrine utilizations.

### **5.1.2 Influence of cultural factors on latrine utilizations**

The study found that majority 64.4% of the respondents indicated that there were cultural taboos or customs have an impact on latrine utilization. The study examined cultural beliefs influencing latrine utilization. A study recorded a mean of 3.33 (SD=1.318)), indicates general disagreement of participants on fact that Open Defecation is cultural acceptable. The study recorded mean of mean of 4.23 with standard deviations of 1.264, indication of general disagreement among participants that mixing feces as predictor of latrine utilizations. A significant proportion 55.9% of the respondents strongly disagreed that children feces were considered harmless and no harm if they defecate. Furthermore, notable proportion 66.1% of respondents reported latrine was acceptable in their community.

Findings from logistics regression analysis showed that presence of cultural taboos (AOR = 0.255, 95% CI [0.106, 0.615],  $p = 0.002$ ); and concerns on mixing up women's and men's feces (AOR = 0.536, 95% CI [0.318, 0.903],  $p = 0.019$ ) were significantly associated with latrine utilization. Additionally, the belief that child feces are harmless (AOR = 2.210, 95% CI [1.243, 3.927],  $p = 0.007$ ); and higher level of acceptance of latrines (AOR = 1.662, 95% CI [1.135, 2.434],  $p = 0.009$ ) was significantly associated with latrine utilization.

### **5.1.3 Influence of economic factors on latrine utilizations**

From findings, over half 52% of the respondents indicated income moderate impact latrine constructions and maintenance. On Pastoralism, only 40.1% of the respondents reported to

influenced construction and maintenance of latrines. Economic incentives were examined, study recorded 3.23 (SD = 1.1), illustrating general disagreement regarding the prioritization of funds for latrine construction and maintenance e. A considerable proportion (45.8%) strongly disagreed with the statement that the community was promised financial support if they constructed latrines during the Community-Led Total Sanitation (CLTS) triggering by the implementing organization. A study recorded a mean 3.54 (SD=1.215) indication of a general disagreement with the statement that economic strategies and financial support significantly enhance latrine utilization. Results showed that majority (52%) of the respondents strongly disagreed with fact that people build latrines for show rather than use. Affordability was examined, study showed that a majority of respondents (62.7%) were neutral about the affordability of latrine construction costs.

In the multivariate analysis study found out that; lifestyle (AOR = 6.305, 95% CI [1.650, 24.092], p = 0.007), financial constraints (AOR = 0.065, 95% CI [0.017, 0.249], p < 0.001), sanitation priority (AOR = 1.707, 95% CI [1.124, 2.592], p = 0.012), rewards for constructing toilets (AOR = 0.429, 95% CI [0.264, 0.697], p = 0.001), economic strategies (AOR = 0.612, 95% CI [0.425, 0.880], p = 0.008), and affordability (AOR = 2.243, 95% CI [1.099, 4.581], p = 0.028) were significantly associated with latrine utilization

## **5.2 Conclusion of the Study**

Based on findings established by the study, it was concluded that social, cultural, and economic factors played crucial roles in promoting latrine utilization in Laisamis sub-county, Marsabit County, Kenya. The study highlights the significant role that societal networks and social norms play in influencing latrine utilization within the community. The findings noted that social dynamics, including the perception of latrine use as a sign of cleanliness and

respect, are key drivers of latrine adoption. Additionally, the study emphasizes the importance of addressing social stigma associated with non-use to encourage broader acceptance and use of latrines.

The study pointed out the influence of cultural beliefs and taboos on latrine utilization within the community. It was found that cultural factors play a significant role in shaping sanitation practices. Despite the existence of cultural taboos that impact latrine use, the general disagreement among participants regarding the cultural acceptability of open defecation and the belief that child feces are harmless indicates a shift towards recognizing the importance of proper sanitation

From results it can also be concluded that income and financial incentives play a role, and their influence is often overshadowed by broader lifestyle choice (pastoralism) and the community's prioritization of sanitation. The skepticism surrounding the effectiveness of economic strategies and external financial support indicates a need for more context-sensitive approaches to encourage latrine construction and use. Furthermore, the community's ambivalence towards the affordability of latrines points to potential financial barriers that need to be addressed. Overall, the findings highlight that successful sanitation interventions must go beyond financial incentives, integrating cultural understanding and lifestyle considerations to foster sustainable improvements in latrine use.

### **5.3 Recommendations of the Study**

To enhance latrine utilization in Laisamis sub-county, Marsabit County, there is need for community engagement and education campaigns that raise awareness about the health benefits of proper sanitation. Utilizing local leaders and influencers to advocate for latrine use can change social norms and reduce stigma associated with open defecation. Women's

groups and youth clubs can play a significant role in disseminating information and promoting latrine construction and use. Providing community training on how to build and maintain latrines ensures that residents have the knowledge and skills needed, fostering a sense of ownership and responsibility.

Cultural factors must be respected and incorporated into any initiative to ensure its success. Understanding local customs and preferences around privacy, hygiene, and waste disposal can help tailor latrine designs to meet community needs. Collaborating with cultural leaders and involving them in the design and implementation process can ensure that the solutions are culturally acceptable and sustainable. Promoting the benefits of latrine use in ways that resonate with local values, such as emphasizing dignity, safety, and community pride, can further encourage widespread adoption and consistent use of latrines in Laisamis sub-county. Lastly, Many households in Laisamis lack the financial resources to build latrines. Implementing microfinance programs or providing subsidies for the construction of latrines can alleviate this burden. Encouraging local entrepreneurs to create affordable latrine options can stimulate the local economy and make sanitation more accessible. Additionally, integrating latrine construction projects with broader development initiatives, such as employment programs, can ensure that improving sanitation also contributes to economic stability and growth in the region.

#### **5.4 Suggestion for Further Studies**

Latrine utilization is influenced by social, cultural and economic factors. Future studies should be focused on other aspects such as demographic, environmental and political influence on the latrine utilization, not only in Laisamis Sub- County, Marsabit, but also in other areas.

## **5.5 Publication**

Jeremiah Ltalamo Upane, Elijah Walubuka, Mary Amatu (2024). Social and Cultural Factors Influencing Promotion of Latrine Utilization in Laisamis Sub-County, Marsabit, Kenya. *International Journal of Current Science Research and Review*, 7(9), 7410-7420, DOI: <https://doi.org/10.47191/ijcsrr/V7-i9-60>

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## APPENDICES

### Appendix A: Informed Consent

I am **Upane Jeremiah**, a student at Meru University of Science and Technology, and I am currently conducting research on factors influencing promotion of latrine utilization in Laisamis sub county, Marsabit, Kenya. The purpose of the study is to gather information that may help improve sanitation practices in the community, so your household was randomly selected to participate in the survey out of all the households in the village. This is a voluntary process, and in that regard, I would like to ask you some questions about the implementation and efficacy of the CLTS approach in your village. The information you provide will be useful for this study, and you don't need to worry about the confidentiality of any information you choose to share since only the two of us will be aware of it, and your identity is not recorded in any place on this form. You are welcome to ask any questions you may have regarding the study through the researcher's details below:

Name: **Jeremiah Upane**      Phone: **0707745612**      Email: [jeremiahupane@gmail.com](mailto:jeremiahupane@gmail.com)

As a result, if you are willing and ready, I'm going to ask whether you're okay with us moving forward with the interview.

1. YES [  ] 2 NO [  ]

## Appendix B: Household Questionnaire

Please answer all the relevant information if you can

Name of the Community Unit (CU)..... 2. Name of the village.....

House hold number.....

Date of interview .....

### Section A: Household Information

1. What is your age category?	18-24 24-59 60 and above	
2. What is your gender?	1. Male 2. Female	
3. What is your marital status?	Married Single Widowed Widower Divorced	
4. What is your highest level of education?	None Primary Secondary Tertiary Others(specify)	
5. What do you do for a living (occupation)?	Unemployed Employed(formal) Herder(livestock raring) Business	
6. Please state the number of people in your Household within this age category	0-5 years.	
	5-12 years.	
	13-24 years.	
	24-59 years.	

### Section B: Social Factor

7. Does social network (friends, relative and people surrounding you) influence use of latrine in your community?

Yes [ ] No [ ]

8. Do receive information on benefit of latrine utilization from your friend and relatives?

Yes [ ] No [ ]

9. Indicate the extent of agreement with the statement below on perception and norms that community have on latrine use. **1) strongly agree 2) agree 3) neutral 4) disagree 5) strongly agree.**

Statement	1	2	3	4	5
Using latrine is considered a sign of cleanness and respect in my community					
Owning latrine in your community is viewed that you have high status					
Some people fear to use latrine because of social stigma					
Most people in your community are using latrine because of perceive benefit like health improvement and cleanness					

10. Are there any social stigmas associated with not using a latrine in your community?

Yes [ ] No [ ] Not sure [ ]

11. Have community leaders or community or health care workers ever provided support or advice about using latrine ?

Yes [ ] No [ ]

12. Are you aware of community programs that encourage latrine construction and use?

Yes [ ] No [ ]

13. Are you aware of government policies that mandate the use of latrines?

Yes [ ] No [ ]

14. How effective do you think this policies are in promoting latrine utilization?

Very effective [ ] effective [ ] neutral [ ] ineffective [ ] very ineffective [ ]

### SECTION C: CULTURAL FACTOR

15. Do cultural taboos or customs have an impact on latrine utilization in your village?

Yes [ ] No [ ]

16. Are there cultural barriers that hinder latrine usage in your community that may influence latrine utilization post ODF

Yes [ ] No [ ]

17. To what extent do you agree with the following statements about cultural beliefs as factor that influence latrine utilization? 1-strongly Agree, 2-Agree, 3-neutral, 4-disagree and 5-strongly disagree.

Statement	5	4	3	2	1

Open defecation is culturally accepted					
Defecating in an enclosed place like a toilet is a taboo					
Men and women should not mix their feaces therefore need for OD					
Children feaces are considered harmless and no harm if they defecate in an open place					
It is not accepted to share one latrine with in-laws					
If someone defecate in an enclosed room are racial like goat slaughtering should be performed					
Defecating in open place signify continuation of ancestors					

18. How acceptable is use of latrine in your community?

Very accepted [ ] accepted [ ] neutral [ ] not accepted [ ] not accepted at all.

19. What do you think are the main reasons some people in your community do not use latrine?

Lack of awareness [ ] cultural beliefs [ ] lack of resources [ ] technical know how [ ]

20. Are there any specific group ( e.g women, elderly and children ) in your household or village who are less likely to use latrine due to cultural reasons.

Yes [ ] No [ ]

#### SECTION D: ECONOMIC FACTORS

21. I understand that the community around are nomads, are you primarily engaged in pastoralism as your main source of income?

Yes ( ) No ( )

If No kindly specify.

22. Has construction and maintenance of latrines been influenced by your nomadic way of life? Yes ( ) No ( )

23. Have financial constraints or the nomadic lifestyle affected your ability to maintain and utilize latrine built after CLTS implementation?

Yes ( ) No ( )

24. Below some statement on economic factor as an influence to latrine utilization after village attain ODF certification, to what level do you agree on the statement on the table below. **5 strongly disagree 4 disagree 3 neutral 2. Agree 1 strongly agree.**

Statement	5	4	3	2	1
My household put sanitation issue as priority hence put a side some money for construction and maintenance of sanitation facilities					
Community was promised for financial support if they construct latrine during CLTS triggering by implementing					

organization					
Improved sanitation through latrine utilization contributes to our household's economic stability					
Economic strategies and financial support would significantly enhance latrine utilization within our community					
We are forced to maintain an ODF environment because of laws, threats or risk of being penalized					
Most people ashamed by not owning latrines in the villages hence built them for show off but not using them					

25. How does your income level impact your ability to build and maintain latrine?

Significantly impact [ ] moderately impact [ ] slightly [ ] does not impact [ ]

26. Have you experienced any financial challenges in constructing a latrine?

Yes [ ] No [ ]

27. How affordable do you find the cost associated with constructing latrine?

Very affordable [ ] affordable [ ] neutral [ ] unaffordable [ ] very unaffordable [ ]

28. Have your household received any financial support or any resources including training on the construction and use of latrines?

Yes [ ] No [ ]

If yes specify.....

### SECTION E: LEVEL OF LATRINE UTILIZATION

29. Do you own latrine?

Yes [ ] No [ ]

If yes in Q29 above is it

Individual [ ] Sharing [ ]

30. If no in (Q29) above then where do your household members defecate?

Open ground (bushes, rivers and near the mountain) [ ]

Share latrines [ ]

Body of other [ ]

Others(specify) [ ]

31. What is your view on the following use a rate of 1-5 with? Strongly Agree = 1, Agree = 2, Neutral = 3, Disagree = 4 and Disagree = 5.

Statement	5	4	3	2	1
The level of cleanliness of the toilets attracts me to use the toilet					
I choose the toilet to use based on how friendly the household are					

The cost of using the toilets influences the number of users					
I select to use the toilet closest to me irrespective of its condition					
The state of hygiene of the existing household toilets in the rural areas is favorable					

32. How far is your latrine from your household?

Within the house  less than 10m  10-20m  more than 20 meters

33. Is your latrine accessible for all household members ( e.g children, elderly and disable)?

Yes  No

**THE END**

**THANK YOU FOR YOUR PARTICIPATION**

## **Appendix C:FGD Guide**

### **Section A: preliminaries**

1. Welcome and introductions
2. Icebreaker/setting the stage
3. If possible take personal details of the CHVs i.e. age, education status, sex and the village they represent.

### **Section B: roles and responsibilities of CHPs**

1. What are your roles and responsibilities as a community health volunteers?
2. Were you involved in community led total sanitation approach implementation in your villages? (If yes, what role did you play)?
3. How many visit often do visit each HH in a month?
4. Which tool do you use to capture WASH parameters if you visit HH?
5. Which are specific WASH indicators that you record when you do a visit?
6. Is there health improvement when communities utilized latrines?
7. What are chances of ODF villages reverting back to open defecation?

### **Section C: social -cultural factors**

- 1) Are there community attitudes, norms and belief regarding latrine usage in your communities?
- 2) If **yes**, kindly list them and explain how it influence latrine utilization?
- 3) What can be done to overcome these challenges?

### **Section D: Economic Factors**

What are some economic challenges that may hinder proper latrine usage in your community?

Does your community prioritize budget for sanitation facility in your community?

Does your communities receive any subsidies or incentive to support in latrine construction?

If yes, from which organization?

Are the community aware of medical expenses related to poor sanitation practices like not using latrine properly?

If yes, how much do they pay if someone is hospitalized or treated for sanitation related disease (do medical expenses calculation).

What strategies have been effective in tackling social and economic challenges related to latrine usage?

### **Section F: latrine utilization**

1. Can you describe the current status of latrine usage in your household or the community?
2. Have you noticed a consistent increase in the usage of latrines since the ODF certification?
3. Have there been any changes in habits or practices related to using latrines within your community post ODF certification?
4. Are the latrine facilities easily accessible to every household in the village?  
Yes/No
5. How would you describe the current condition and maintenance of the latrines post ODF certification?

6. What are some WASH activities that will promote latrine utilization in your community are you conducting on household visit?
7. What can you recommend to be done better to improve latrine utilization in your community?

**Thank you for your time.**

## Appendix D: Introductory Letter



# MERU UNIVERSITY OF SCIENCE & TECHNOLOGY

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## SCHOOL OF ENGINEERING AND ARCHITECTURE

### DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

**TO:** Whom It may concern

**DATE:** 30<sup>th</sup> May, 2024

Dear Sir/Madam,

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**RE: INTRODUCTORY LETTER FOR UPANE JEREMIAH, REG NO. EG407/201402/20**

---

The above-named, is a student in the Department of Civil and Environmental Engineering at Meru University of Science and Technology, pursuing a Master's degree in Sanitation. He has been approved to conduct research on “**Factors influencing promotion of latrine utilization in Laisamis Sub-County, Marsabit, Kenya.**” aimed at completing his studies. This is therefore, to request that you grant him any assistance needed to enable him meet the program requirements for his graduation.

Kindly contact us for any further enquiries.

Thank you

**Mirara Simon w.**

**Chair of Department Civil and Environmental Engineering**

**Meru University of Science and Technology**

**Email: [CODcivilengineeing@must.ac.ke](mailto:CODcivilengineeing@must.ac.ke)**

**[Smirara@must.ac.ke](mailto:Smirara@must.ac.ke)**

# Appendix E:Plagiarism Report



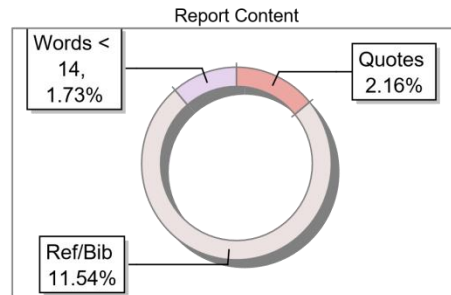
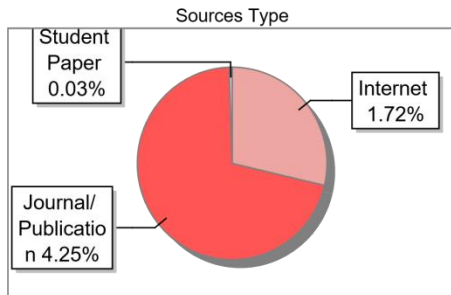
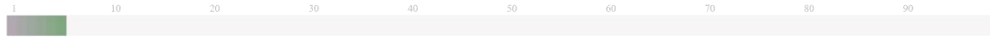
The Report is Generated by DrillBit Plagiarism Detection Software

### Submission Information

Author Name	UPANE L. JEREMIAH
Title	SOCIAL, CULTURAL, AND ECONOMIC FACTORS INFLUENCING PROMOTION OF LATRINE UTILIZATION IN LAISAMIS SUB COUNTY, MARSABIT, KENYA.
Paper/Submission ID	4141255
Submitted by	mmusungu@must.ac.ke
Submission Date	2025-07-28 16:46:04
Total Pages, Total Words	170, 37792
Document type	Thesis

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Student Papers	Yes
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## Social and Cultural Factors Influencing Promotion of Latrine Utilization in Laisamis Sub-County, Marsabit, Kenya






Jeremiah Ltalamo Upane<sup>1\*</sup>, Elijah Walubuka<sup>2</sup>, Mary Amatu<sup>3</sup>

<sup>1,2,3</sup>Meru University of Science and Technology

**ABSTRACT:** The issue of sanitation has long existed and drawn criticism from figures like Mahatma Gandhi, who stated that sanitation in a community is more important than independence. Latrine utilization is among ways of ensuring that communities are safe and are not interacting with disease causing pathogens. However, the presence of latrines has not completely been a guarantee for their utilization especially among the pastoral communities. The objectives of this study was to examine the social and cultural factors influencing promotion of latrine utilization Laisamis Sub-County, Marsabit County, Kenya. A cross-sectional descriptive study was conducted in two selected Wards in Laisamis Sub-County using both qualitative and quantitative approaches. Quantitative data was collected from 177 households using questionnaires and analysed in descriptive and inferential statistics. Qualitative data was gathered from selected members from a focus group discussion. The data was analysed thematically and presented in narratives. The social factors that showed a significant influence on latrine utilization included: perceived health benefits ( $p=0.000<0.05$ ), accessibility of latrines ( $p=0.000<0.05$ ), respect associated with latrines ownership ( $p=0.05$ ) and social norms ( $p=0.000<0.05$ ). Cultural beliefs relating to defecation in enclosed places such as toilets seemed to encourage open defecation despite latrine presence. Taboos surrounding sharing of latrines for men and women and among in-laws was reported to attract latrine avoidance especially when the available toilets were not separated. It was established that cultural practices for some groups such as morans discouraged toilets utilization. The influence of cultural taboos, barriers and beliefs on latrine utilization was significant ( $p<0.05$ ). The study concluded that owning a latrine in Laisamis Sub-County did not guarantee use because of the influence of social and cultural issues. The study recommended community engagement and robust education campaigns using local leaders and influencers to dispel taboos and beliefs against latrine use. Context-specific behaviour change strategies could encourage positive habits and increase utilization of latrines in the sub-county.

**KEY WORDS:** Cultural factors, Latrine Utilization, Social factors.

# Appendix F: Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: <b>958665</b>	Date of Issue: <b>25/August/2025</b>
<b>RESEARCH LICENSE</b>	
	
<p>This is to Certify that Mr.. Jeremiah Litalamo Upane of Meru University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Marsabit on the topic: <b>FACTORS INFLUENCING PROMOTION OF LATRENE UTILIZATION IN LAISAMIS SUB COUNTY, MARSABIT, KENYA.</b> for the period ending : <b>25/August/2026.</b></p>	
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