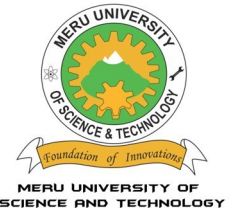




# AFRICAN JOURNAL OF SCIENCE, TECHNOLOGY AND SOCIAL SCIENCES

Journal website: <https://journals.must.ac.ke>



A Publication of Meru University of Science and Technology

## Influence of socio-economic factors on utilization of sanitation facilities by women In Mukuru Kwa Reuben informal settlement In Nairobi County

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### ARTICLE INFO

### ABSTRACT

#### KEYWORDS

Economic Status  
Beliefs  
Education  
Utilization  
Sanitation  
Women  
Slums  
WASH

Accessing basic sanitation services is still a challenge in slums and sanitation needs of some groups specifically women at times remain unmet. This study assessed the socio-economic factors that influence the utilization of sanitation facilities by women at Mukuru Kwa Reuben, Kenya. The study targeted women aged 18 and above who consented. The Sample size was 395 women at Mukuru Kwa Reuben. Clustered and simple random sampling techniques were utilized to select the study participants. The data collection tools were questionnaires, focus group discussions and observation. Descriptive and inferential statistics were utilized for quantitative data analysis. Study findings are presented in tables. Qualitative data was analyzed thematically and presented in form of narratives. Results from the analysis showed that majority of the most common sanitation facility at Mukuru kwa Reuben was container based (51.0%). The socioeconomic factors that significantly influenced the utilization of sanitation facilities by women were cultural beliefs ( $r=-0.613$ ,  $p=0.000$ ), that had a strong negative association with utilization, education level ( $r=0.593$ ,  $p=0.000$ ), had a strong positive association with utilization, and economic status ( $r=0.466$ ,  $p=0.000$ ), had a moderate positive association with utilization. This study highlights persistent challenges in slums, particularly for women's access to sanitation. Socio-economic factors significantly influence sanitation facility utilization by women in Mukuru Kwa Reuben, Kenya. There is need for holistic interventions to address beliefs, education, and economic status for improved sanitation practices

#### Introduction

Globally, disposal of fecal matter is a challenge, especially in developing nations. Additionally, only 39% of the world's population, according to United Nation (UN) forecasts from 2020, utilizes improved sanitation systems. In Sub-Saharan Africa, only 37% of the population utilize improved sanitation facilities, and this number is much lower in rural regions, according to World

Bank (2020). Further study conducted by the United Nations (2020) reported that women are more likely to face barriers to utilizing toilets due to gender inequality, cultural norms, and economic constraints.

According to UNICEF report, more than 70% population in East and Central Africa don't use basic sanitation systems and in Kenya only 29% of people have access to basic sanitation services

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<https://doi.org/10.58506/ajstss.v2i2.175>

(2020). Additionally, the situation is worse in urban informal settlements, where just 28% of people have utilize to better sanitation services (Okurut et al., 2015). The utilization of these facilities is further lower among women, with only 25% of the women using them (Onyancha, 2020).

Since 2015, China's "toilet revolution" has upgraded over 47 million rural toilets. A 2020 survey of 980 revealed that most used is on-site sanitation systems in rural households, like septic tanks and pit latrines, with 88% mixing urine and feces for collection. Despite improvements, only 25% were satisfied, citing health risks from toilet interface issues and excreta treatment. Most preferred an "out of sight, out of mind" approach, where the local government manages excreta without involving or charging households. In India, 28% of the population, including about 6% of the urban population and close to 40% of the rural population, lacks access to adequate sanitation, according to Central Intelligence Agency (CIA) (2021). According to Barnard et al. (2013), the most frequent causes of open defecation include preference, the toilet not being fully operable, inconvenience, a lack of privacy, or the toilet being utilized for something else, like storage. Other factors contributing to open defecation's prevalence include habit, misinformation about hygiene, and religious convictions. Because some individuals consider that time as an opportunity to interact socially with friends or as an activity that makes them feel independent because they get to choose the location (Bhatt et al., 2019).

During the Millennium Development Goal (MDG) era, the target for drinking-water was achieved five years ahead of schedule. However, the target for basic sanitation access remained unmet, despite 2.1 billion people gaining access to improved sanitation during that period (United Nations 2018). As nations now strive to reach their own national targets and the Sustainable Development Goals (SDGs), a growing demand for guidance on establishing a supportive environment for sanitation is required. This involves implementing robust policies, plans, and legal frame-

works that will propel progress towards SDG 6 targets on sanitation. Such measures are crucial to ensure equitable and sustainable access to sanitation for all. The 2010 Constitution of Kenya recognized the right to sanitation in Article 43(1)(c), which stated, "Every person has the right to accessible and adequate housing and to reasonable standards of sanitation," (GoK 2010). Sanitation was mentioned again in the Constitution in Part 2, which focused on county governments. It stated, "The functions and power of the county are (11) country public works and services, including water and sanitation services," (ibid). Devolving power for service delivery to the county governments marked a major change for the sanitation sector in Kenya. The Kenya Environmental Sanitation and Hygiene Strategic Framework (KESSEF) noted, "The Constitution of Kenya, 2010 portends a major paradigm shift and fundamental change in the environment for sanitation sector governance and service delivery," (GoK 2016b). Kenya's sanitation legal framework includes, The Kenya Environmental Sanitation and Hygiene Policy (KESHP) 2016–2030, developed in response to the 2010 Constitution and the Sustainable Development Goals (SDGs), provides guidelines for achieving universal access to improved sanitation and a clean environment. The policy outlines strategies for both rural and urban areas, emphasizing technology choices that meet local needs. It aligns with the WHO Guidelines on Sanitation and Health, ensuring context-specific solutions. The KESHP aims to achieve 100% open defecation-free status and improved sanitation access for all by 2030, accompanied by increased investment in sanitation and hygiene. The policy prioritizes vulnerable populations, including women and girls, recognizing their specific needs in sanitation facilities. It recognizes the connection between sanitation and health and is in line with Kenya's Health Policy. Additionally, the former Ministry of Water Resources' Sessional Paper No.1 of 1999 addresses water resources management, sewerage systems, and on-site sanitation development, recognizing the importance of sanitation facilities for

poverty alleviation and health improvement. Overall, these policies form a crucial framework to guide Kenya's sanitation efforts towards achieving the SDGs.

Building and using a sanitation facility separates people from faeces, significantly reducing diseases in communities. Sanitation facilities should provide privacy, safety and dignity for women. Afework et al. (2022) reported that utilization of sanitation facilities was associated with the knowledge of sanitation related diseases and positive attitude toward latrine use. A key obstacle to recognizing the connection between sanitation and health is access to better sanitation services and facilities in Mukuru Kwa Reuben in Nairobi County. According to Onyanacha (2020), only 25% of the households in the area have sanitation facilities. Furthermore, the utilization of these facilities is also low, with only 40% of the households using them (Onyanacha, 2020). In addition, the utilization of these facilities is even lower among women, with only 25% of the women using the facilities (Onyanacha, 2020). In addition, a study conducted by the United Nations (2020) found that women were more likely to face challenges when using sanitation facilities especially in informal settlement.

The Mukuru Kwa Reuben informal settlement is situated in the industrial zone of Nairobi County. It is distinguished by deteriorated housing, which is worsened by inadequate drainage and sanitation facilities. The inhabitants of Mukuru face severe issues related to water and sanitation, as there are only 3,863 pit latrines available for the 100,561 families residing there. The water infrastructure in this area is insufficient, marked by fragile and disconnected piping that runs through muddy drainage systems.

The uptake of proper sanitation practices is significantly hampered by socioeconomic variables like poverty, a lack of financial resources, and a lack of education, according to a global study by (Alda-Vidal et al., 2020; Alemu et al., 2017). According to Gichuru et al. (2020), socio-economic factors including income, education level, and cul-

tural beliefs can affect the utilization of sanitation facilities. In addition, Nyamusi (2021) found that socioeconomic factors such as income, education level, and cultural beliefs can affect the utilization of the facilities. According to research by Koyra et al. (2017) and Lemma et al. (2017), which were done in rural Ethiopia and Hawassa town, respectively, socio-economic issues like poverty, illiteracy, and cultural beliefs are significant hindrances to the acceptance and use of sanitary facilities. In addition, Ssekamatte et al. (2019) conducted a study in Kampala, Uganda, and concluded socioeconomic factors such as gender, religion, and culture influence the utilization of public toilets in informal settlements.

Michele (2016) studied the urban slums of Kibera in Nairobi and discovered that socioeconomic status issues including poverty, a lack of financial resources, and illiteracy are significant hindrances to the acceptance of sanitation methods. Simiyu (2016) conducted a study in the unofficial settlements of Kisumu, Kenya, and discovered that social economic reasons such as poverty, a lack of financial resources, and illiteracy are key hindrances to using communal sanitary facilities.

Finally, socioeconomic concerns like poverty, a shortage of resources, and illiteracy are significant hindrances to use of sanitary facilities by women in Mukuru Kwa Reuben in Nairobi County. For Mukuru Kwa Reuben in Nairobi County to adopt and use sanitation facilities more effectively, it is crucial to address these socioeconomic variables and find out how they affect women. Therefore, the objective of the study was to examine the influence of socio-economic factors on the utilization of sanitation facilities by women in Mukuru Kwa Reuben.

## **Methodology**

### *Research Design*

This study employed a descriptive design with a mixed methods approach where a quantitative and qualitative data were collected. Descriptive design was effective because it is cost effective

and enabled the researcher to obtain detailed and accurate information on utilization of sanitation facilities by women. It also helped the researcher to gain a deeper understanding of the specific issues in utilization of sanitation facilities

### Study Area

Mukuru Kwa Reuben is an informal settlement and is located at the south eastern side of Nairobi County in Embakasi South sud-county, Nairobi City County, Kenya. It has population of 65,691, with 29,288 women (KNBS,2019). There are eleven villages in Mukuru Kwa Reuben comprising of Wesinya, Kosovo, Gateway, Gatope, Diamond, Rurie, Feed the Children, Mombasa Zone, Railway, Simba cool and Diamond. This settlement is characterized by inadequate utilize to basic services such as water, sanitation, and electricity (Mallory et al.,2021). The majority of households rely on shared sanitation facilities which are often dirty and the burden of illness rest on the women (Corburn & Hildebrand, 2015).

The key socio-economic activities in Mukuru Kwa Reuben informal settlement in Nairobi County include informal trading, small business, scrap metal collection, and waste collection (Kinyanjui et al., 2017; Omondi, 2017). There is also informal employment in the settlement, with many residents relying on daily wage labor to make ends meet (Kinyanjui et al., 2017). Additionally, there is poverty in the settlement, with the residents living below the poverty line These socio-economic activities have a direct impact on the utilization of sanitation facilities by women in the settlement, as many of the residents lack the financial resources (Kinyanjui et al., 2017).

### Study Population

The study population consisted of women living in the eleven villages at Mukuru Kwa Reuben in Nairobi County. As per the Kenya National Bureau of Statistics Census of (2019), Mukuru Kwa Reuben has total of 29,288 women in 38696 households.

### Eligibility criteria

**Inclusion Criteria :** The study focused on women aged 18 and above who consent and are the primary users of sanitation facilities and resident in Mukuru Kwa Reuben community.

**Exclusion Criteria:** The study excluded women who do not consent and are not residents of Mukuru Kwa Reuben community.

### Sample Size Determination

Yamane formula was used to calculate the sample size for this study. The formula is as follows:

$$n = \frac{N}{1 + Ne^2} = \frac{29288}{1 + 29288 * 0.05^2} = 395$$

Therefore, the sample size was 395 women.

### Sampling Techniques

A cluster sampling technique was used to classify Mukuru kwa Reuben sub-location into its respective 12 administrative villages namely Bins, Wesinya, Kosovo, Gateway, Gatope, Diamond, Rurie, Feed the Children, Mombasa Zone, Railway, Simba cool and Diamond. Proportionate sampling was used to determine the number of women selected in each village. A simple random method was used to select households in each cluster and one participant in each household.

### Data Collection and Analysis

Quantitative data was collected using structured questionnaire which was administered on women at the household level. This is because the tool is simple to quantify and easy to use on a large number of subjects within a very short time. It is a user-friendly and can be answered by respondents without explanation. It was used to collect information on design parameters, socio-economic factors, operation and maintenance, and utilization of sanitation facilities.

On the other hand, qualitative data was collected using FGD guides for discussion. The guides contain unstructured questions that al-

lowed the respondents to provide feedback that is enriched. This also collected data for all the variables in the study, that is, design parameters, socioeconomic factors, operation and maintenance, and utilization of sanitation facilities.

An observation checklist containing information on sanitation facility privacy, safety, security, operation and maintenance at household level was also used. This mainly collected data on design parameters and operation and maintenance.

Collected quantitative data was cleaned to eliminate any incomplete data then coded into SPSS for subsequent analysis using descriptive and inferential techniques. Descriptive output was in the form of percentages, means, frequencies variance and presented in tables and graphs, while inferential output contained correlation coefficients based on Pearson's technique. Qualitative data was analyzed thematically and presented in form of narratives.

#### *Ethical Considerations*

Ethical clearance was sought from the Ethical Review Committee of Meru University of Science and Technology. Written permission was also obtained from both the local chiefs of Mukuru Kwa Reuben and the authorities of Nairobi County government. The requests for permission included comprehensive details about the study's purpose, methodologies, anticipated outcomes, duration, and ethical considerations. These considerations emphasized the safeguarding of participants' rights and privacy.

Prior to conducting the research, informed consent was acquired from the women involved. They were provided with comprehensive information about the research's objectives, methodologies, potential risks and benefits associated with their participation, as well as their prerogative to withdraw from the study at any point if they felt uneasy. The participants were guaranteed the maintenance of their anonymity and confidentiality. Each participant was assigned a unique code for identification purposes within the research. All

gathered data was treated with confidentiality and stored securely in devices protected by passwords.

## **Results and Discussions**

### *Demographic Information*

The findings indicated that majority (54.2%) of the respondents were aged 31 - 40 years. This agrees with the findings of Borg et al., (2022) who in their study on association between menstrual hygiene, workplace sanitation practices and self-reported urogenital symptoms in women found majority of the women participant to be aged 30 – 39 years.

The age of women can have a significant impact on their utilization of sanitation facilities. Different age groups may have distinct sanitation needs and face various challenges related to access and use of these facilities. Data on marital status established that majority of the sampled women were married (41.0%). Tiwari et al., (2022) claim that marriages improve the financial position of households, who then can improve their sanitation facilities. Marital status can be linked to economic factors, such as income and access to resources, which can impact the quality and type of sanitation facilities available to women, especially in low-income households. On education level, majority of the respondents had primary level education (49.0%).

Educated women are more likely to be aware of the importance of sanitation, and they can advocate for their rights and needs related to sanitation facilities. Tiwari et al., (2022) also agree that educated households can appreciate the benefits of improved sanitation and the role that the private toilets have in reducing disease incidences. Those with tertiary education/university were the least (4.5%), women with higher levels of education are generally more aware of the importance of sanitation and hygiene practices. They are likely to possess better knowledge of the health risks associated with poor sanitation and the benefits of using proper facilities. Without education, women may not be aware of the importance of

	Strongly Agree(%)	Agree(%)	Not Sure(%)	Disagree(%)	Strongly Disagree(%)
I always use the sanitation facilities provided for me	3.8	6.6	1.4	67.0	21.2
I feel comfortable using the sanitation facilities provided for me	3.1	9.9	4.6	76.7	9.7
I feel safe using the sanitation facilities provided for me	2.1	8.3	1.0	61.8	26.7
I have easy access to the sanitation facilities provided for me	12.5	24.0	2.4	40.3	20.8
I am satisfied with the quality of the sanitation facilities provided for me	0.7	3.7	0.0	68.3	27.3
The sanitation facilities provided for me meet my needs.	0.0	1.0	0.7	76.7	21.5
I am able to use the sanitation facilities provided for me at any time	2.1	8.7	1.7	61.8	25.7
I do not have to wait to use the sanitation facilities at home	1.4	3.8	0.3	74.0	20.5

**Table 1: Utilization of Sanitation Facilities**

proper sanitation and hygiene practices. They might not understand the health risks associated with open defecation or inadequate sanitation facilities. On the occupation of respondents, majority of the women were employed (35.4%), this implies they were economically empowered. Economic empowerment enables women to afford menstrual hygiene products and access facilities that support proper menstrual hygiene management. This contributes to their comfort, health, and overall well-being.

#### *Utilization of Sanitation Facilities*

The study sought to establish the status of utilization of sanitation facilities by women. This was done by the respondents being required to indicate their level of agreement with statements constructed in Likert form. The findings show that 3.8% of the respondents strongly agreed that they always used the sanitation facilities provided, 6.6% agreed, 1.4% were not sure, 67.0% disagreed, while the remaining 21.2% strongly disagreed, cumulatively, 88.2% of the respondents disagreed that they always used the sanitation facilities provided, hence it is concluded that the sanitation facilities provided were not well utilized by the women.

This agrees with findings of Bhatt et al. (2019)

who while examining motivations behind open defecation in Nepal, Bhatt et al. (2019) found that this choice is linked with personal preferences, and cultural and traditional norms with particular concerns for the privacy of women and girls in different communities

Regarding comfort using the sanitation facilities provided, it was established that 3.1% strongly agreed, 9.9% agreed, 4.6% were not sure, 76.7% disagreed, while the remaining 9.7% disagreed, cumulatively, 86.4% of the respondents disagreed that they felt comfortable using the sanitation facilities provided to them. On safety while using the provided sanitation facilities, the findings were as follows; 2.1% strongly agreed that they feel safe, 8.3% were in agreement, 1.0% were not sure, 61.8% were in disagreement, while the remaining 26.7% strongly disagreed. It is also noted that 88.5% of the respondents cumulatively disagreed that they felt safe using the sanitation facilities provided to them.

Regarding access to sanitation facilities, the results showed that 12.5% strongly agreed, those who agreed were 24.0%, those who were not sure were 2.4%, those in disagreement with the statement were 40.3%, while those who strongly disagreed were 20.8%, these results indicate that most of the facilities were not easily accessible,

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Choice	288	1.00	5.00	2.182	.728
Access	288	1.00	5.00	2.017	.684
Attitude	288	1.00	5.00	2.273	.578

**Table 2:** Descriptive Statistics for Utilization of Sanitation Facilities

since those who disagreed cumulatively added to 61.1%. The next statement sought to determine the opinion of the respondents with regard to satisfaction with the quality of sanitation facilities, the results indicated that 0.7% of the respondents strongly agreed, 3.7% agreed, 0.0% were not sure, 68.3% disagreed, while those who strongly disagreed were 27.3%, it can be inferred in general that the quality of sanitation facilities was not good. On whether the sanitation facilities meet their needs, the results indicated that 0.0% of the respondents strongly agreed, 1.0% agreed, 0.7% were not sure, 76.7% disagreed, while those who strongly disagreed were 21.5%, it can be inferred in general that the sanitation facilities did not meet the needs of the respondents. Regarding the use of sanitation facilities at any time, the results indicated that 2.1% of the respondents strongly agreed, 8.7% agreed, 1.7% were not sure, 61.8% disagreed, while those who strongly disagreed were 25.7%, it can be seen that the women could not use the sanitation facilities any time they wanted. Lastly, on not having to wait to use the sanitation facility, the results indicated that 1.4% of the respondents strongly agreed, 3.8% agreed, 0.3% were not sure, 74.0% disagreed, while those who strongly disagreed were 20.5%. The results are shown in table 1.

The descriptive results on utilization of sanitation facilities were summarized and the results show that choice of sanitation facility had a mean of 2.182 and SD = 0.728, indicating that the respondents disagreed with it, hence the women had limited choices with regard to the sanitation facility to use. On access, a mean of 2.017 and SD

= 0.684 indicates disagreement with the statement this shows that in general access to sanitation facilities was not good, and lastly, regarding attitude, a mean of 2.273 and SD = 0.578 was attained, meaning that the respondents disagreed with the statement, hence the women had a negative attitude towards the available sanitation facilities. The results are presented in Table 2.

#### *Influence of Socioeconomic Factors on Utilization of Sanitation Facilities*

The objective of the study was to examine the influence of socioeconomic factors on utilization of sanitation facilities. To achieve this, socioeconomic factors was operationalized into several indicators and their influence on utilization of sanitation facilities assessed. The results of the analysis of the collected data are presented as follows:

##### *a) Household Income*

The first part sought to determine the income of the respondents' households. The findings from the study indicate that a significant majority of the respondents, approximately 72.6%, reported earning between Kshs. 10,000 and Kshs. 20,000. On the other hand, the percentage of respondents who earned more than Kshs. 50,000 was the least at 1.04%. These results are consistent with the findings of previous studies conducted by Chege (2020) and Solymari, Kairu, Czirjak, and Tarrosy (2022), which also observed a decline in average household income in slums in Kenya since the start of the COVID-19 pandemic. The studies by Chege and Solymari et al. reported that the



	Strongly Disagree(%)	Disagree(%)	Moderately Agree(%)	Agree(%)	Strongly Agree(%)
Cultural beliefs and practices affect women's utilization of sanitation facilities	3.8	9.4	33.7	42.4	10.8
Women's social status or caste affect their ability to access sanitation facilities	14.2	37.2	44.1	4.5	0.0
Lack of funding for sanitation facilities affects women's access	0.0	10.8	33.7	52.4	3.1
Women's family responsibilities affect their utilization of sanitation facilities	17.7	34.4	39.6	7.6	0.7
Communal sanitation facilities impact women's hygiene practices	1.7	6.6	32.3	34.7	24.7
Women's education levels influence their willingness to use sanitation facilities	2.4	9.4	67.7	33.7	8.0
Low income is a barrier for women to use sanitation facilities	1.4	4.2	18.1	55.9	20.5
Poverty influences women's access to sanitation facilities	1.0	2.8	21.2	54.5	20.5
Religious beliefs and practices affect women's utilization of sanitation facilities	4.5	8.3	33.7	38.9	14.6

**Table 3: Socioeconomic Factors related to utilization of sanitation facilities**

average monthly household income in slums in Kenya decreased to approximately USD 78, which falls within the range of Kshs. 10,000 to Kshs. 20,000.

#### *b) Socioeconomic Factors and Utilization of Sanitation Facilities*

The study in addition aimed at finding out how hypothesized indicators of socioeconomic factors influenced utilization of sanitation facilities. On the first statement, cultural beliefs and practices affect women's utilization of sanitation facilities, 3.8% of the respondents strongly disagreed, 9.4% disagreed, 33.7% moderately agreed, 42.4% agreed, while 10.8% strongly agreed. It is seen that those who agreed and strongly agreed were the majority (53.2%), with a majority of respondents (53.2%) agreeing or strongly agreeing that culture plays a key role, it suggests that cultural norms and values significantly impact how women perceive and access sanitation facilities.

These results align with the discoveries of Dwipayanti et al. (2022), whose study revealed a consonance in the sphere of sanitation. They identified a robust correlation between cultural values and both the acceptance-to-construction trajectory of sanitation adoption, as well as the subsequent utilization-to-safe-disposal continuum of sustainability. Dwipayanti et al findings spotlight

the pronounced impact of cultural values in rural Bali on the entire spectrum of sanitation practices.

The second statement highlights the link between women's social status or caste and their access to sanitation facilities. 14.2% strongly disagreed with this connection, while 37.2% agreed, 44.1% moderately agreed, and 4.5% agreed. No respondents strongly agreed with the statement, suggesting mixed perspectives on the impact of social factors on sanitation access for women. This is in line with findings of Ashraf et al., (2022) who found that social status or the class system had a significant influence on access to sanitation facilities to residents of rural Bihar, India.

The data on the third item highlights the influence of funding on women's access to sanitation facilities. Only 10.8% disagreed with the notion, while 33.7% moderately agreed, and 52.4% agreed, indicating a significant majority recognizing the impact of funding constraints. A smaller percentage, 3.1%, strongly agreed, suggesting a minority who strongly recognize the correlation. Insufficient funding seems to play a notable role in limiting women's access to adequate sanitation, emphasizing the need for targeted interventions and investment to address this critical issue and promote gender equality in sanitation access. The data on the fourth item reveals interesting



	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Beliefs	288	1.00	4.00	3.927	.764
Economic status	288	1.00	5.00	3.871	.625
Education level	288	1.00	4.00	3.689	.751

**Table 4:** Summary of Mean and Standard Deviation for Design Parameters

insights into the influence of women's family responsibilities on their utilization of sanitation facilities. A significant proportion, 34.4%, disagreed with the idea, and 17.7% strongly disagreed, collectively representing a substantial portion of respondents who believe that family responsibilities have no significant impact on sanitation facility utilization. On the other hand, 39.6% moderately agreed, suggesting some acknowledgment of a potential effect, but not overwhelmingly so. The smaller percentages of 7.6% who agreed and 0.7% who strongly agreed indicate that only a minority perceive a noticeable correlation between family responsibilities and sanitation facility utilization. Overall, this data implies that family responsibilities may not heavily influence women's access to and use of sanitation facilities. On the fifth statement, communal sanitation facilities impact women's hygiene practices, those who strongly disagreed were, 1.7%, those who disagreed were, 6.6%, those who moderately agreed were, 32.3%, those who agreed were, 34.7%, and lastly, those who strongly agreed were, 24.7%. Hence it can be inferred that communal sanitation facilities influence women's utilization of sanitation facilities. On the sixth item, women's education levels influence their willingness to use sanitation facilities, those who strongly disagreed were, 2.4%, those who disagreed were, 9.4%, those who moderately agreed were, 67.7%, those who agreed were, 33.7%, and lastly, those who strongly agreed were, 8.0%. This implies that education level of a woman has influence on the choice, access, and attitude on the available sanitation facilities. On the seventh item, low income is a barrier for women to use sanitation facilities, those who strongly disagreed were, 1.4%, those who disagreed were, 4.2%, those who moderately

agreed were, 18.1%, those who agreed were, 55.9%, and lastly, those who strongly agreed were, 20.5%. This shows that income is a determinant of utilization of sanitation services by women. Regarding the eighth item, poverty influence women's access to sanitation facilities, those who strongly disagreed were, 1.0%, those who disagreed were, 2.8%, those who moderately agreed were, 21.2%, those who agreed were, 54.5%, and lastly, those who strongly agreed were, 20.5%. This indicates the poverty influence utilisation of sanitation facilities by women. The data on the last statement underscores the impact of religious beliefs and practices on women's utilization of sanitation facilities. While a small percentage (4.5%) strongly disagreed and 8.3% disagreed with the notion, a significant proportion (38.9%) agreed, and 14.6% strongly agreed, indicating that a substantial segment recognizes the influence of religion on sanitation facility utilization by women. Moreover, 33.7% moderately agreed, suggesting that religious beliefs may play a somewhat significant role. The findings imply that cultural and religious norms can affect women's access to and use of sanitation facilities, necessitating targeted interventions and awareness programs to address any barriers imposed by such beliefs and promote inclusive and equitable access to sanitation for all women. This agrees with results of a study carried out by UNICEF (2016) which established that retrogressive cultural norms negatively affect the utilisation of sanitation facilities by women.

Focus group discussions were carried out to collect in-depth information on the influence of socioeconomic factors on utilization of sanitation services by women, some of the factors that came out clearly during the discussions were; culture,

		<b>Utilization of Sanitation Facilities</b>	
<b>Socioeconomic factors</b>	<b>Beliefs</b>	Pearson Correlation	-0.613
		Sig. (2-tailed)	0.000
		N	288
	<b>Economic Status</b>	Pearson Correlation	0.466
		Sig. (2-tailed)	0.000
		N	288
	<b>Education Level</b>	Pearson Correlation	0.593
		Sig. (2-tailed)	0.000
		N	288

**Table 5:** Correlation of Socioeconomic Factors and Utilization of Sanitation Facilities

education, income, and religion. One respondent said;

*"In my culture, it is wrong to use a seat toilet with my children and in-laws, my girls are therefore forced to seek alternative sanitation services since we cannot share the one in the house."*

On income, one respondent said;

*"I do not have money to pay for use of the container toilets, I either have to wait till dark so that I can bath or defecate behind my house or go to a plot with a working sanitation facility and use it."*

On education, one respondent said;

*"Having gone to college and experience the good sanitation facilities in urban areas, it becomes so difficult for me to use these facilities that are found in the slums. I prefer going to town during the day and making use of the clean facilities in restaurants "*

These sampled responses indicate that socioeconomic factors influence the utilization of sanitation facilities by women. This aligns with the conclusions drawn by Novotný et al. (2017), whose research highlighted the concurrence of socioeconomic elements, including wealth, housing conditions, income, asset possession, loan access, education, occupation, and sanitation facility quality, as prevalent determinants influencing outcomes in rural sanitation. Abdi (2019) also established that household's income and employment status, which are socioeconomic factors were found to be key determinants in the choice of any type of sanitation facility.

From the analysis of quantitative data descrip-

tively and the thematic analysis of qualitative data, it can be seen that socioeconomic factors influence utilization of sanitation facilities, though the magnitude and direction of influence cannot be known based on these findings.

#### *Summary on the Influence of Socioeconomic Factors on Utilization of Sanitation Facilities*

The descriptive outcome was summarised in terms of mean and standard deviation, and the finding presented in table 4

In Table 4, the focus is on three indicators of socioeconomic factors and their respective average responses. Among these indicators, beliefs (cultural and religious) received the highest average response, with a mean value of 3.927 and SD = 0.764. This indicates that respondents perceived cultural and religious beliefs to have a significant influence on the utilization of sanitation facilities though the responses were varied. These beliefs likely impact attitudes towards hygiene, sanitation practices, and access to facilities, highlighting the importance of understanding and addressing cultural and religious factors in sanitation initiatives. The second indicator, economic status, also received an above-average response (Mean = 3.871, SD = 0.625), suggesting that respondents recognized its relevance in determining sanitation facility utilization. Economic factors, such as income and affordability, can impact access to improved sanitation infrastructure and services. Lower economic status might lead to limited access to sanitation facilities and services, exacerbating existing inequalities. These findings

are in accordance with the results of Ali and Khan's (2023) study, wherein regression analysis demonstrated the substantial impact of several demographic, social, and economic factors – namely, age, education, income, social category, information access, access to potable water, and asset ownership – on the adoption of environmentally friendly toilets in rural India. Similarly, the third indicator, education level, had an above-average response (Mean = 3.689, SD = 0.751), implying that respondents acknowledged its role in sanitation facility utilization. Education can play a crucial role in promoting awareness about proper hygiene practices and the importance of sanitation, leading to improved utilization of facilities. Overall, the data underscores the significance of beliefs, economic status, and education level in influencing sanitation facility utilization. Understanding these factors can help in designing more effective and inclusive sanitation programs, addressing disparities, and promoting better access to facilities for all individuals, irrespective of their socioeconomic backgrounds and gender roles. Top of Form Bottom of Form

These findings are consistent with several studies conducted in different regions, all highlighting the crucial role of socio-economic factors in influencing the acceptance and use of sanitation facilities. Koyra et al. (2017) conducted research in rural Ethiopia, and Lemma et al. (2017) in Hawassa town, both identifying poverty, illiteracy, and cultural beliefs as significant obstacles to the adoption of sanitary facilities. These factors likely contribute to limited awareness and understanding of the importance of proper sanitation practices, hindering the uptake of improved facilities. Belachew et al. (2018) explored the Tigray district of Enderta, Ethiopia, and discovered that the usability of sanitation facilities plays a crucial role in determining their usage. This emphasizes the need for designing facilities that are user-friendly and accessible to all, as poorly designed or inconvenient facilities might discourage regular use. In Kampala, Uganda, Ssekamatte et al. (2019) found that socio-economic factors such as gender, reli-

gion, and culture influence the utilization of public toilets in informal settlements. These factors can lead to disparities in access to sanitation facilities, with marginalized groups facing additional barriers.

Similarly, Tamene and Afework (2021) conducted a study in rural Ethiopia and identified socio-cultural factors like traditional beliefs, gender roles, and lack of education as significant impediments to the adoption and utilization of improved latrine facilities. Such cultural norms and traditional practices might discourage individuals from adopting modern sanitation practices.

#### Correlation of Socioeconomic Factors and Utilization of Sanitation Facilities

To answer the research objective, the study sought to determine the strength and direction of association between socioeconomic indicators and utilization of sanitation facilities. The association between beliefs and utilization of sanitation facilities was strong negative and significant ( $r = -0.613$ ,  $p = 0.000$ ), this indicates that strong beliefs negatively influences the utilization of sanitation facilities. Economic status and utilization of sanitation facilities had a moderate positive and significant association ( $r = 0.466$ ,  $p = 0.000$ ), this suggests that women who are economically empowered can access and utilize sanitation facilities better than those who are not empowered economically. Education level had a strong positive and significant association ( $r = 0.593$ ,  $p = 0.000$ ), this implies that educated women have a higher chance of utilizing sanitation facilities in comparison to the less educated..

#### Conclusion and Recommendation

The objective of the study revealed a negative association between beliefs and utilization of sanitation facilities. This underscores the importance of addressing misconceptions or cultural barriers that may hinder individuals from using the facilities. To promote better utilization, targeted awareness campaigns and community engagement initiatives are essential. By raising awareness and providing education about proper sanitation

practices, these efforts can help challenge existing beliefs and encourage positive attitudes towards using sanitation facilities. Addressing these cultural barriers can contribute to improved facility utilization and ultimately lead to better public health outcomes and enhanced hygiene practices within the community.

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