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Original Article

Assessing the Utilization of Commercialized Public Toilets in Kakamega Town

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Latrines.

Human waste management continues to be a major global challenge facing urban growth. Managing sanitation is therefore a challenge facing most governments. The objective of this study was to assess the utilization of commercialized public toilets in Kakamega Town. The study adopted a descriptive research design carried out in Kakamega Town. The target population comprised residents of Kakamega town and those on daily transit. Purposive sampling was done for Kakamega County town and key informants, while Simple random sampling was done for town residents and business people. Systematic sampling was conducted on individuals using public toilets. A sample size of 351 participants was finally used and data was collected using observation, interviews, questionnaires, and document review. 265 (75.5%) of respondents knew of public toilets and their location with only 25.9% of females being very often users. The majority of respondents 256 (72.9%) chose public toilets because of their cleanliness and appearance. Physically challenged respondents were less likely to use commercial toilets in contrast to the able-bodied respondents (OR: 0.4; 95%CI: 0.2 – 0.8; p=0.008). Location, signage, and maps were among the factors identified as determining the utilization of the public toilet facilities in Kakamega Town. There were low incidents of open defecation, urination, and flying toilets in places where commercialized public toilets were. In conclusion, commercialized public toilets were highly utilized and preferred in Kakamega town due to their cleanliness, location, and accessibility. The study recommends the town increase the number of commercialized public toilet facilities and the management of non-commercialized public toilets in the county government of Kakamega to enhance cleanliness and access to all public toilets within the town.

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INTRODUCTION

Human waste management, also identified as safe sanitation, is a foundation of a healthy, comfortable, and dignified life whose absence is costly to the economy of countries after sickness and death (UNICEF, & WHO, 2020). It, therefore, requires proper management strategies from the grassroots level, hence the need for legislation to control human waste clearance and disposal. Uwamwezi (2016) points out the lack of standardization on how to manage excreta waste in public areas as among the justifications for the pathetic states in public toilets. To enhance proper human waste disposal, it is advisable to employ a participatory approach to address term long-term behavior change (Augsburg *et al.*, 2022). Hardin (1968) in his theory of "Tragedy of the Commons", notes that in a situation within a shared resource system such as public toilets, individual users act independently according to their self-interests and thus behave contrary to the common good of all users by depleting or spoiling that resource through their collective actions.

Globally, there are indicators that different countries experience situations that hinder development towards proper sanitation levels. United States Transgender Survey (2022) shows that besides public toilets providing essential services, there are evidential traces of psychological, physical and sexual assaults reported to have taken place in these facilities. Similar cases of assaults have been reported by the Police Foundation (2017) indicating harassment of female gender in UK public toilets thereby limiting utilization.

In Arabic Africa, most public toilets have been given less attention and so are not well maintained (Aly *et al.*, 2024). In West African countries, cases of women avoiding public toilets due to privacy among other concerns such as dirtiness

and mess have been reported making open defecation a common practice (UNICEF 2016a). In South Africa, Kieran (2015) records that rape cases, robberies, and murder are rampantly reported in South African toilets and suggests better management and design of toilets for the promotion of dignity, safety, and accessibility.

Commercializing public toilets is being employed as a way of maintaining clean public toilets as proceeds realized are regenerated to ensure their hygienic sustainability. Eastern African region depicts mixed reactions as research conducted indicates payment attached to toilet use is a deprivation of human rights. It therefore forces respective governments to embark on a search for sustainable solutions. In Rwanda, Gubic (2020) reports that the rising urban population has put much pressure on the government, thus, the need to increase the number of public toilets to boost accessibility in public spaces. Sudan Sanitation Program had, according to UNICEF (2016b), planned to adopt and generate guides for the construction of public toilets, management, and operation to improve their sanitation level. The Ministry of Health, Ethiopia (2021) report, indicates that in Addis-Ababa, the Water and Sewerage Authority boosted public toilet facilities and commercialized them to promote utilization, development, and sustainability.

In Kenya, Sibanda *et al.*, (2017) describes waste management in Kisumu County as a challenge. They note that dark streets used by informal traders in Central Business District (CBD) experience uncontrolled open defecation due to population pressure on public toilets which affect their availability and accessibility. A similar situation is witnessed in Nakuru, Mombasa and other towns in Kenya. This is an indication of a human need facing constrain as public toilets are disappearing, and that in towns they are almost

equally rare with the few slightly paying for convenience (Banks, 2019).

UN (2019), indicates Kakamega Town as the largest town in Kakamega County. Economically, its poverty level stands at 39.6 percent (Kenya National Bureau of Statistics, KNBS 2021). This implies that, by commercializing public toilets in Kakamega Town, the number of people likely to utilize them is low as some are not able to afford services.

LITERATURE REVIEW

The propensity and frequency with which a person utilizes a public toilet facility are determined by the accessibility of both free and for-profit public toilets. The level of usage is likely to vary from one public toilet to the next due to various reasons. For instance, Fozouni *et al.*, (2019) observe that some public toilets are zones for substance abuse. According to a study by Wolfson *et al.*, (2017) in the United States, some public toilets have been identified as public injection sites and hide-outs for drug abuse. In addition, Wolfson (*Ibid*) reports sexual abuse to be a cause of fear for most women visiting public toilets. Furthermore, reports on crime cases being evidenced in public toilets also influence utilization.

A study conducted by Afacan *et al.*, (2015) indicates that an increase in mass transit such as rail, roads, trolleys, and horse-drawn streetcars increases the need for public toilets. The changes in transportation technology have facilitated travel to both nearby and distant locations, highlighting the significance of public toilets in bus terminals, stations, and on-board flush toilets on trains, aircraft, and ships. This triggers the need for provision of public toilets that are accessible and ready for use.

In developed nations such as the United States of America (USA), the Department of Labour's Occupational Safety and Health (OSH, 2019) shows that the amended Act 1989 mandates employees to avoid the adverse health effects that emanate from infrequent toilet use. To enhance independence and quality of life, some States have

tried to manage and regulate public toilets. Others have created a national database of public toilets available within their area of jurisdiction. Moreover, to improve utilization, they have created a public toilet plan to sustain a network of safe, accessible, clean, and environmentally sustainable public toilets. This contributes towards increasing the number of stocks of public toilets. Through these strategies, public toilets are located in areas that suit the needs of the community. Hochbaum (2020) records municipalities providing an insufficient number of public bathrooms for people away from home by comparing the number of available public toilets to the size of the city population. This calls for the town's progressive planning policies to enhance the provision of adequate public toilets for its residents, transit users, employees, and visitors.

Firkralem *et al.*, (2017) study on the level of sanitation, adoption, and utilization, reveals the influential factors and comprehends the nature of their effects. They record that individuals' influential factors associated with the necessity of defecation include, household factors such as unaffordability, community factors, and societal factors such as promotions and technology as determinants to open defecation. WHO (2018), therefore, recommends in guidelines on sanitation and health that factors such as the age level of users should be considered during the establishment of public toilet facilities. Additionally, Ali *et al.*, (2024) findings also show that, age determines usability, training programs on public toilet utilization as well as the education level of users also play a very important role. Greed (2019) observes that cultural and historical factors contribute to the disparities in public toilet usage and thus this paradox should be utilized to establish inclusive, accessible cities for all thereby increasing the utility of public toilets.

USAID (2021) report shows that many organizations are attempting to develop more manageable and cost-effective toilet facilities. These public toilets are supposed to be sustainable, user-friendly, and protect the community from contamination. They are thus

able to cut costs resulting in to increase in the level of use.

According to Goal 6 of the Sustainable Development Goals (UN, 2018), the strategy is to enable and accelerate progress in achieving the target. The water sector is aiming at improving water management to enhance more coverage, keeping in mind that water is a cornerstone determinant of sanitation level. WHO (2017) updates indicate that about 2,300 million People still lack access to essential sanitation facilities like toilets and latrines in the world. It therefore advocates for promoting the dignity and safety of women and girls, with the provision of separate sanitary facilities, boosting the school attendance of girls in particular. Buor *et al.*, (2020) show that, the absence of public toilet facilities signifies a reflection of societal class before the consideration of income and education levels. This also displays the number of people who can acquire access to sanitation.

In South Africa, South Africa Police Service, SAPS (2020) indicates that murder cases are among crimes reported to be 55.8% in public places. They include sex and sexual violence prevalent in public toilets. Furthermore, UN-Habitat (2016) shows that more than one-third of the urban population of the developing world resides in slums, but city planning and infrastructure have not kept pace compromising the level of public toilet utilization.

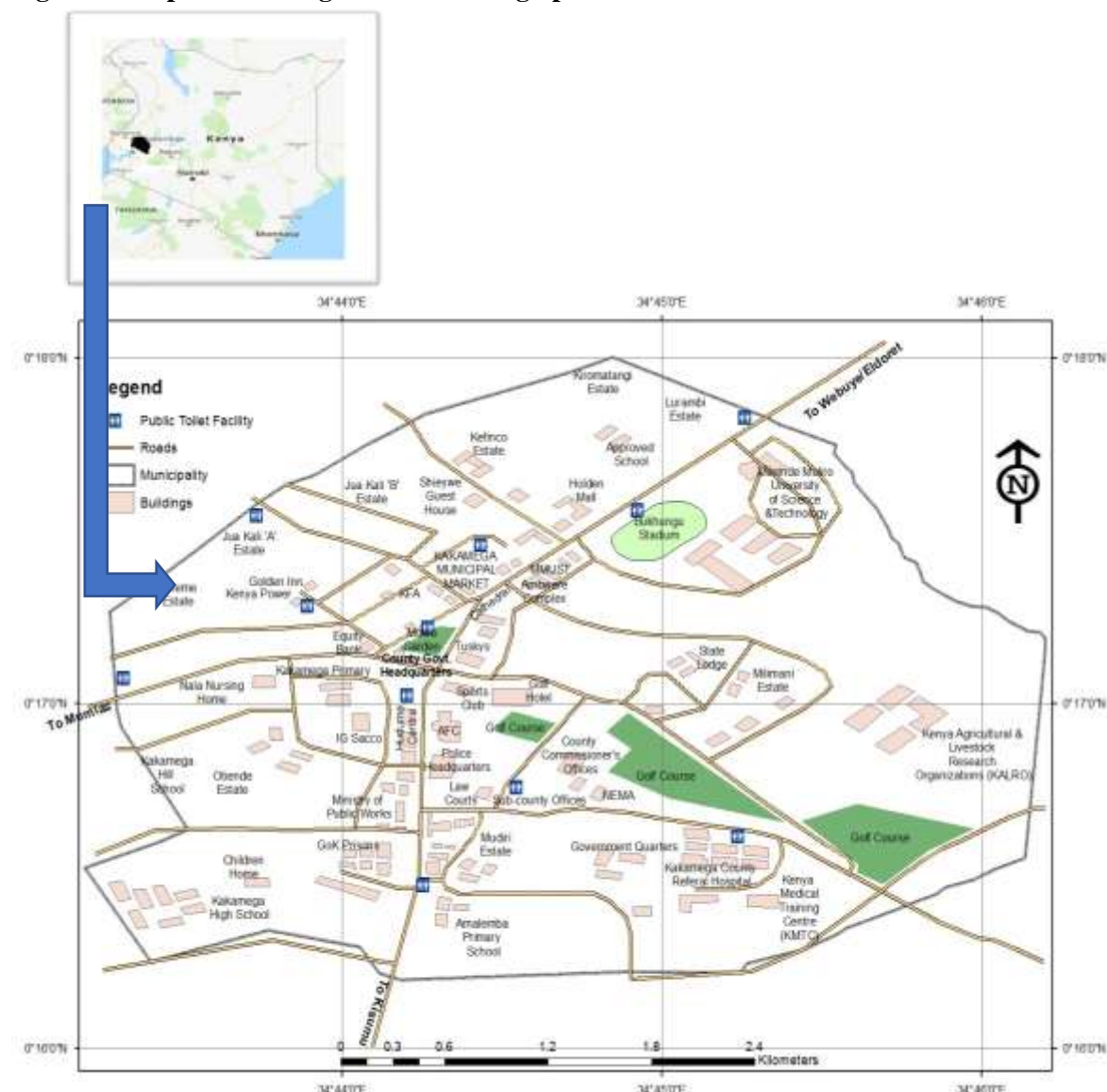
According to a survey conducted by UN-WATER (2015), only 30 percent of the Kenyan population had access to essential sanitation facilities, including sewerage systems. Hartigan *et al.*, (2020) also indicate that females predominantly avoid public toilet use mostly when at work and out of home. These findings thus, indicate a compromised utilization of public toilets at a given level.

THEORETICAL FRAMEWORK

The study was conducted based on the Contract Theory by Harts *et al.*, (1986). It was then guided by Garret Hardin's Theory of Tragedy of Commons with the main objective being to assess the utilization of commercialized public toilets in Kakamega Town.

Contract Theory according to Harts *et al.*, (1986), is about the design of moral agreements that motivate people with conflicting interests to take mutually beneficial action. Regarding the utilization of commercialized public toilets in Kakamega town, we are bound to look at financial motivational gain, cost-cut effectiveness, and quality of service offered by the toilet facilities. This is at the expense of the main objective of setting up public toilet facilities that are readily available and accessible to satisfy the needs of its users and their effects on the environment. The theory of Tragedy of the Commons according to Hardin (1968), helps in one way of accounting for overexploitation. He argues that if individuals act in self-interest by using common resources for their gain and with no regard for others, all resources would be eventually depleted. He further states that open access to resources with such selfish interests requires management. Hardin's theory relates to a need (freedom) for public toilets as a necessity that may be misused if not managed well. Shaw *et al.*, (2019) recommend the involvement of stakeholders in designing a public toilet facility. Encouraging dialogue enhances relationships, exposes challenges while creating awareness, enforces a sense of ownership, and ensures that peoples' desires, demands and need are met. Shaw, further notes that involving the stakeholders at the beginning enhances willingness to pay and use the public toilet facility in Kakamega Town.

Figure 1: Map of Kakamega Town Showing Spatial Distribution of Public Toilet Facilities



Source: Researcher (2019). Version; ESRI ArcGIS 10.0

METHODOLOGY

The study was undertaken in Kakamega town in Kakamega County in Kenya since it is among the fastest-growing towns in Kenya with a fast-growing urban population thus vulnerable to sanitation waste management challenges. The study aimed to find out the level of utilization of commercialized public toilets in Kakamega Town. The study adopted a descriptive research design. The study employed the use of both quantitative and qualitative approaches to collect data. The expected target population was 63,426 people living in Kakamega town plus those in transit. These individuals were anticipated to

utilize the public toilets at some point in time. Both quantitative and qualitative data were collected from respondents and stored securely. Data was then coded and entered in Excel for processing. The study involved 384 based on Mugenda and Mugenda's formula $n = z^2pq/d^2$ for respondents residing in Kakamega Town plus those in transit. A total of 351 questionnaires were clean and complete for data analysis. This represents 91.4% response rate which was considered adequate and formed an acceptable basis for concluding. Primary data was collected using observation, interviews, and questionnaires while secondary data was obtained from

unpublished anecdotal reports and documents from related offices. Data was analyzed using descriptive statistics by the Statistical Package for Social Sciences (SPSS) version 28. To assess the utilization of commercialized public toilets frequency data was collected and analyzed in percentages. The presentation of data was done using tables and pie charts. pilot study was conducted in Luanda town Kenya and the results indicated that the questionnaire used in this study had a high level of reliability (Cronbach = 0.727).

RESULTS

To assess the utilization of commercialized public toilets in Kakamega town, respondents were expected to demonstrate their understanding of what a public toilet is, and the location of a public toilet, and indicate their preference for using a given type of public toilet.

Knowledge of the Presence and Location of Public Toilet

Regarding knowledge of the presence and location of public toilets in Kakamega town, out of the total 351 respondents, 265 (75.5%) reported being able to identify a public toilet with only 86 (24.5%) not able to identify. Furthermore, 97 (27.6%) of the participants specifically mentioned that the public toilets they utilized were situated within the university premises (MMUST). This finding suggests that a significant proportion of the population residing in Kakamega Town possess knowledge regarding the presence of

public toilet facilities and the ability to utilize them when necessary. The findings also indicate that the location of the public toilets influenced their utilization with the most used being in MMUST and CBD respectively.

To assess participants' understanding of a public restroom, respondents were required to fill in open-ended questions. One respondent responded....

"A public toilet is a toilet used by the public." R20

While another said...

"It is a place to help yourself on short or long goals in town." R11

Another also responded...

"It is a government property meant to serve the citizens." R7

Additional responses to that question included....

"A toilet that does not belong to a particular household." R13

And...

"It is a facility used by humans for human waste disposal." R23

Concerning how the participants located the public toilets for the first time, the majority who were 221 accounting for 62.96% reported to have located the public toilets using signage and maps.

Table 1. Knowledge on the Availability and Location of Public Toilets in Kakamega Town

Variable	Response	Male (%)	Female (%)	Total
Ability to identify a public toilet in Kakamega town	Yes	185 (69.8)	80 (30.2)	265
	No	69 (80.2)	17 (19.8)	86
Ability to locate a public toilet using a map or signage	Yes	158 (71.5)	63(28.5)	221
	No	96 (73.8)	34 (26.2)	130
Location of public toilet used	School	15 (75.0)	5(25.0)	20
	MMUST	72(74.2)	25(25.8)	97
	KCTRH	6 (100.0)	0 (0.0)	6
	Stadium	2 (15.4)	11 (84.6)	13
	Colleges	30 (90.9)	3 (9.1)	33
	County offices	10 (83.3)	2 (16.7)	12

Variable	Response	Male (%)	Female (%)	Total
	CBD	37 (59.7)	25 (40.3)	62
	Market	55 (76.4)	17 (23.6)	72
	Government Offices	22(81.5)	5 (18.5)	27
	Muliro Gardens	4 (50.0)	4 (50.0)	8
	Bank	1 (100.0)	0(0.0)	1
	Bus stage	0 (0.0)	0 (0.0)	0

Source: Researcher, 2019

Use and Preference of Public Toilets in Kakamega Town

Table 2 presents findings on the use of public toilets by residents in Kakamega town. Findings reveal that the use of commercialized public toilets in Kakamega town was very high at 222 (87.4%) for males and 81 (83.5%) for females. The findings further indicate that 158 (73.1%) males rarely used public toilets and 20 (74.1%) used public toilets very often. About the females, 58 (26.9%) reported to rarely using public toilets, and only 7 (25.9%) reported to use them very

often. When asked if the facilities they used had a special site for physically challenged people, 55 (69.6%) of males and 24 (30.4%) of females said yes. Respondents were also asked to name any abuses they saw in public toilets, males reported seeing rape by 18 (7.09%) compared to females 1(1.03%). Also 86(33.86%) men and 36(37.11%) women said they witnessed drug abuse. Respondents were also 180(51.3%) comfortable with the rate being levied on commercial public toilet services.

Table: 2 Use and Preference of Public Toilets in Kakamega Town

Variable		Gender		Total N (%)
		Male N (%)	Female N (%)	
Payment for use of facility	Yes	144(74.6)	49(25.4)	193
	No	110 (69.6)	48(30.4)	158
Comfortable with rates levied against the services	Yes	132(73.3)	48(26.7)	180
	No	122(71.3)	49(28.7)	171
Facility has a special site for the physically challenged	Yes	55(69.6)	24(30.4)	79
	No	199(73.2)	73(26.8)	272
Type of toilet preferred for use	Commercial	176(75.2)	58(24.8)	234
	Free	78(66.7)	39(33.3)	117
Level of use of public toilets	Yes	222(73.3)	81(26.7)	303
	No	32(66.7)	16(33.3)	48
Frequency of use of public toilet in Kakamega	Never	31(67.4)	15(32.6)	46
	Rarely	158(73.1)	58(26.9)	216
	Often	45(72.6)	17(27.4)	62
	Very Often	20(74.1)	7(25.9)	27
Witnessed any of the following abuse of public toilets in Kakamega	Cottaging	1(0.39)	3(3.09)	
	Rape	18(7.09)	1(1.03)	
	Drug Abuse	86(33.86)	36(37.11)	
	Never witnessed	149(58.66)	57(58.76)	
		254	97	351

Source: Researcher, 2019

Out of the total respondents that took part in the study, 22 (6.27%) were physically challenged and

only 6 (27.3%) of them used public toilets as indicated in Table 3.

Table 3: Commercial Public Toilet Utilization Level Based on Physical Ability

	N	Use of public toilets	
		Yes (%)	No (%)
Disability status			
Disabled	22	6 (27.3%)	16(72.7%)
Not disabled	329	84 (25.5%)	245 (74.5%)

Source: Researcher, (2019)

On the open-ended questions, the respondents were asked for their reasons for being happy or not being happy with the services levied at public toilets, and below are their responses. One of the respondents who was dissatisfied with the services said...

“Public toilets are poorly cleaned and have no cleaning material.” R31

Another one said...

“Considering their decent price, they are still not up to standards.” R17

One respondent sought assurance of anonymity and said...

“This facility lacks enough water and some of us are worried about infections from the toilets.” R22

Among other reasons cited for dissatisfaction were...

“Some of the facilities lack flashing systems or are faulty and are mismanaged while some experience overcrowding” R33

About those who said they were satisfied with the services, their reasons were that the toilets were

charging a good amount, the services were average and there was the availability of hand washing facility at the toilets.

When asked what can be done to motivate people to use public toilets, one respondent said....

“Making all of them or some free will enable those not able financially to use them,” R18.

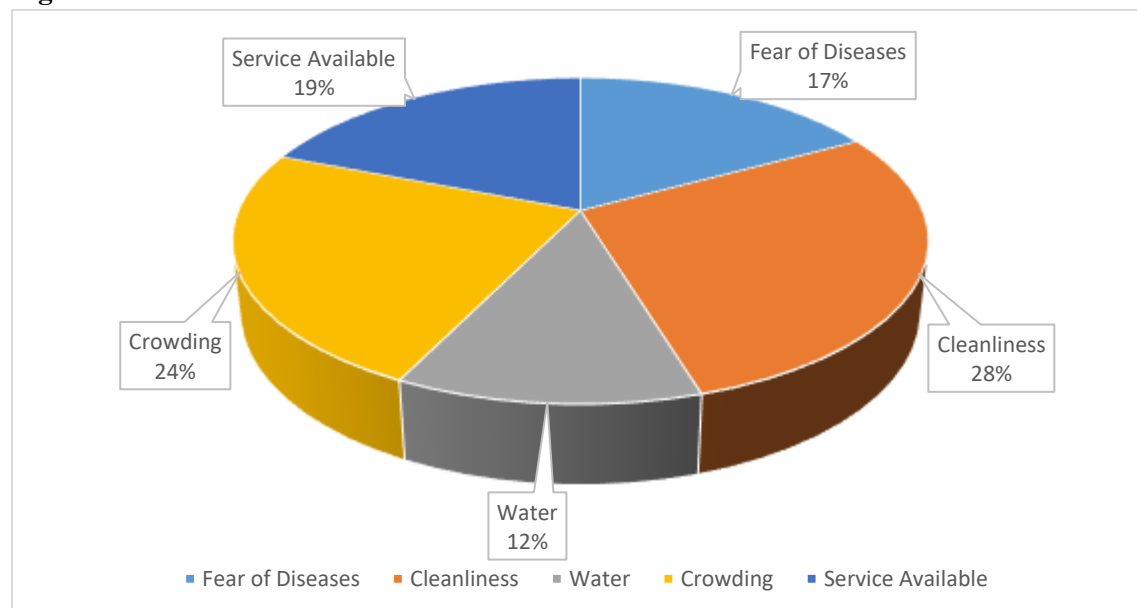
Another respondent said...

“Keeping the toilets clean, constructing more toilets, and educating the public could go a long way to motivate the users.” R15.

The majority of the respondents felt that proper management could work and also putting tissue paper in the toilets could be very useful.

When asked the reason why people avoid using public toilets, 28% of respondents said that cleanliness was their major reason, 12% sighted water, 17% reported fear of communicable disease, while others said overcrowding and lack of accessible services for individuals with physical disabilities in the majority of public restroom facilities limit the number of individuals visiting a public toilet.

Figure 2: Reasons for Choice of Commercialized Public Toilets



Source: Researcher, 2019

Public Toilet Preferred about Demographic Characteristics

A bivariate analysis of demographic characteristics associated with the type of toilet preferred is shown in Table 4. Those of 30 years and below were 1.1 times more likely to use commercial toilets compared to those above 30 years. Men were one point three times more likely to use commercial toilets (OR: 1.3; 95% CI: 0.7 – 2.3; $p=0.97$). Education level was not statistically

significant with the type of toilet preferred with the results showing that respondents with the education of secondary and below were 70% less likely to use commercial toilets compared to tertiary and above (OR: 0.3; 95% CI: 0.2 – 0.9; $p=0.14$). Similarly, physically challenged respondents were less likely to use commercial toilets in contrast to the able-bodied respondents (OR: 0.4; 95% CI: 0.2 – 0.8; $p=0.008$)

Table 4 Demographic Characteristics Associated with Type of Toilet Preferred

Risk factor	N			Overall OR	95% CI	p value
Age groups		Commercial N (%)	Free N (%)			
≤ 30	273	176 (64.4)	97(35.6)	1.1	0.7 – 1.5	0.06
≥ 30	78	58 (74.4)	20 (25.6)			
Gender						
Male	254	176 (69.3)	78 (30.7)	1.3	0.7 – 2.3	0.97
Female	97	58 (59.7)	39 (40.3)			
Education level						
Secondary and below	94	71 (75.5)	23 (24.5)	0.3	0.2 – 0.9	0.14
Tertiary and above	257	163 (63.4)	94 (36.6)			
Physically challenged						
Yes	22	6 (27.2)	16 (72.8)	0.4	0.2 – 0.8	0.008
No	329	228 (69.3)	101 (30.7)			

Source: Researcher, 2019

Reasons for Choice of Commercial Toilets

Respondents were also asked to give their reasons for the choice of either commercial public toilet. For those who choose commercial toilets, some of

the reasons cited included cleanliness, good management, good service and affordability. The majority of the respondents chose commercial public toilets. They had good workmanship

whereas 256 (72.9%) chose commercial public toilets because they were clean as in Table 5. An almost equal percentage was realized in operation

time which indicated 51.0% choice against those who did not consider the time when choosing the facility to use.

Table: 5 Reason for Choice of the Commercial Public Toilet Facility

Variable	Yes N (%)	No N (%)
Cleanliness	256 (72.9%)	95 (27.1%)
Operation time	179 (51.0%)	172(49.0%)
Affordability/ costs	217 (61.8%)	134 (38.2%)
Safety	198 (56.4%)	153 (43.6%)
Craftsmanship and Architectural Design	301 (85.7%)	50 (14.3%)

Source: Researcher, 2019

Some reasons cited by those who felt the management was good included;

attitude towards their employment and the surrounding environments.” R4

“Friendly workers, clean personnel, reasonable price, accountable workers.” R6

“These facilities are noteworthy due to their commendable decorations and strategic locations.” R9

“These toilet facilities were staffed by gregarious individuals who had a pleasant

The majority of commercial toilets in Kakamega town exhibit enhanced service accessibility features, including the presence of lighting fixtures and several other accessible amenities. Table 6 shows responses on service access in public toilets. With regards to utility passage, 260 (74.1%) said it was available and 37 (10.5%) said bulbs were not available.

Table: 6 Service Access Offered in Public Toilets

Presence of variable		Gender	
		Male N (%)	Female N (%)
Seat Covers	Yes	117(73.1)	43(26.9)
	No	137(71.7)	54(28.3)
Clean dry environment	Yes	166(72.2)	64(27.8)
	No	88(72.7)	33(27.3)
Toilet paper dispenser	Yes	112(80.6)	27(19.4)
	No	142(67.3)	69(32.7)
Hand Driers	Yes	50(63.3)	29(36.7)
	No	204(75.0)	68(25.0)
Soap Dispenser	Yes	98(70.5)	41(29.5)
	No	156(73.6)	56(26.4)
Sanitary towel dispenser	Yes	67(80.7)	16(19.3)
	No	187(69.8)	81(30.2)
Coat Hook	Yes	61(78.2)	17(21.8)
	No	193(70.7)	80(29.3)
Diaper Dispenser	Yes	89(78.1)	25(21.9)
	No	163(69.7)	71(30.3)
Clinical Waste bin	Yes	72(62.1)	44(37.9)
	No	182(77.4)	53(22.6)
Flushing Trough	Yes	208(74.6)	71(25.4)
	No	46(63.9)	26(36.1)
Utility passage	Yes	184(70.8)	76(29.2)
	No	70(76.9)	21(23.1)
Water tank	Yes	225(73.1)	83(26.9)
	No	29(67.4)	14(32.6)

Presence of variable		Gender	
		Male N (%)	Female N (%)
Bulbs	Yes	229(72.9)	85(27.1)
	No	25(67.6)	12(32.4)
Sensors	Yes	49(80.3)	12(19.7)
	No	205(70.7)	85(29.3)
Urinal-male	Yes	218(72.2)	84(27.8)
	No	36(73.5)	13(26.5)
Urinal- female	Yes	166(74.1)	58(25.9)
	No	88(69.3)	39(30.7)
Equipped Showers	Yes	88(71.0)	36(29.0)
	No	166(73.1)	61(26.9)

Source: Researcher, 2019

The respondents were asked what they thought was a public toilet. There was variability in responses. One of the respondents said....

“A public toilet is a toilet used by anybody at will”

R3

While another said that....

“It is a place to help yourself on short or long goal in town”, R12

Another said...

“It is a government property meant to serve the citizens”. R 9

On the other hand, another said...

“A toilet that does not belong to a particular household...pause...It is a facility used by humans for human waste disposal.” R6

These responses showed that the respondents had a clear clue of what a public toilet was about our definition. This is because they all indicated that, it is accessible to the public for use at will.

Bivariate Analysis of Demographic Characteristics Associated with the Use of Toilet Preferred

Table 7 reveals a significant relationship between age and rate of use of public toilets. Respondents aged 30 and above were 60% more likely not to use public toilets compared to respondents aged below 30 years (OR: 1.6; 95% CI: 1.4- 3.5; p=0.01). Similarly, men were 20% less likely not to use public toilets compared to women (OR: 0.8; 95% CI: 0.7- 1.4; p=0.02). The response on disability status was statistically associated with disability status and disabled respondents were 80% less likely not to use public toilets compared to their counterparts (OR: 0.2; 95% CI: 0.1- 0.9; p=0.00).

Table 7: Demographic characteristics Associated with Use of Commercial Public Toilets

	n	Rate of use of public toilets		Overall OR	95% CL	P value
		No	Yes			
Age groups				1.6	1.4 -3.5	0.01
Less than 30	273	215 (78.7%)	58 (21.3%)			
Above 30	78	49 (62.8%)	29 (37.2%)			
Disability status				0.2	0.1-0.9	0.00
Disabled	22	16 (72.7%)	6 (27.8%)			
Not disabled	329	246 (74.7%)	83 (25.3%)			
Gender				0.8	0.7-1.4	0.02
Male	254	189 (74.4%)	65 (25.6%)			
Female	97	73 (75.2%)	24 (24.8%)			

Source: Researcher, 2019

DISCUSSIONS

The study found out that majority (75.5%) of people found in Kakamega town had knowledge

regarding public toilet facilities and were able to identify and utilize them effectively when in need. These findings concur with Muhele's (2016) study that 46.8% of people using public toilets can know and locate them through mass media, while others know of their availability through health promotional campaigns and other means. According to Buor *et al.*, (2020), the absence and presence of public toilet facilities reflects the societal status. This presents an implication of knowledge on public toilet facilities to a certain level.

The study also found out that location of the public toilet facilities determined their level of utilization in Kakamega town. For instance, those located within educational institutions attracted high level of usage. This finding aligns with the results reported by Seattle University Free Way Park (2016), that most of the public toilets are located in business establishments, indicating that that location influenced usage.

The study found out that signage and maps determined the utilization of public toilets with those having signage and maps being mostly used. Similarly, findings by Esmeraldo *et al.*, (2016) demonstrate that location and signage affected the accessibility of public toilets. These findings similarly correspond to the findings of Mildura Rural City (2018) which indicated that in Victoria, Australia, limited usage of certain facilities might have been improved through the implementation of signage, maps, and online communication tools in order to enhance their easy location. Ahuma-Smith *et al.*, (2020) further point out that, promoters must provide additional accessible information on location to improve the level of knowledge during the designing and constructing of public toilet facilities and further additional accessible information on location need to be provided to enhance users make informed choices. This finding concurs with the current study explaining why the study found a low level of utility of some of the public toilet facilities located in areas such as banks.

These study findings indicated that a total of 303 respondents representing 86.3% of the population

in Kakamega town use public toilets and the majority of males utilized public toilets more than females. This shows a close similarity to a study conducted by Peprah *et al.*, (2015) in Accra Ghana which reveals that 72% of the urban population use public facilities. These similarities are an indication of improved sanitation levels in urban set-ups with Kakamega Town not being an exception.

This study revealed that 25.9% of females are very often users of public toilets in Kakamega Town, an indication that the level of utilizing public toilets by females was low. These findings concur with research conducted by Hartigan *et al.*, (2020) indicating that a small percentage of individuals using public conveniences are women. Greed (2019) justifies the findings by stating that cultural diversities are among the other main reasons for gender inequalities in the utilization of public toilets.

The findings of this study also show that only 27.8% of physically challenged people use public toilets in Kakamega town. This corresponds with the findings of a study by Ahuma-Smith *et al.*, (2020) which revealed that 20% of the physically challenged use public toilets frequently, while 27% had never used them because they were not user-friendly.

This study also established that 66.7% of people in Kakamega town preferred using commercial public toilets due to several reasons which included fear of contracting diseases in non-commercialized public toilets, and levels of cleanliness of the facilities among others. These results concur with Iftikhar *et al.*, (2020) that 64.66% of public toilet users were willing to pay for a service that enhances their convenience thus showing their preference for commercial public toilets.

This study found out that, cleanliness drew more people to commercial public toilets in Kakamega Town because of their good management. The study found that people associate the level of cleanliness with safety from certain diseases and that the majority of these commercial toilets are

managed well. This study finding concurs with WHO (2023b) that Poor sanitation is associated with transmission of diseases such as dysentery, cholera and typhoid. The study also affirms Vyas (2015) citing Deslypere's findings of 2003 which indicate that chances of pathogen transmission are very high even in toilets that may appear to look clean and the fear of acquiring new diseases limits people's access to the public toilet facilities.

The study additionally substantiates concerns raised by Jaglarz (2020) regarding many negative factors such as improper waste disposal and lack of cleanliness, which are found to be widespread and thus restrict utilization of public toilets. These study findings, therefore, signify that cleanliness is the root cause of commercialising public toilets and concurs with Iftikhar *et al.*, (2020) report that 57.33% of public toilet users are willing to pay any extra costs for service to promote cleanliness in public toilets facilities.

This study also found out the accessibility of a public toilet was among the determining reasons for utilizing the facility in Kakamega town. For instance, the operation time of these commercial public toilets made some 49.0% of users fail to utilize them at the time of need indicating the need for flexibility in time of operation. These findings concur with City of Wollongong (2019) in New South Wales, Australia, that open time for users determines usage of the facility. According to the report, assessing opening time ensures that community expectations, maximum usage and safety are met.

This study found that the costs of services levied attracted 61.8% of the population like the services levied in Kakamega town. This was slightly higher than respondents who were against the services being levied. The study noted that lack of proper denomination, lack of money, economic status of the user, customer relation by attendant, type of service offered, being dictated by the urgency of the need determined use of a given commercial public toilet. In support of these findings, Crouch (2018) study in Sweden indicates that failure in online payment services can hinder someone's ability to utilize

commercial public toilet services. On the other hand, almost similar findings by Bradley Corporation (2018) in America indicate that 56% of Americans consider paying if only guaranteed a clean and well-stocked public toilet. This indicates that the population that found it not convenient to pay for the services being levied were likely to seek it from somewhere else.

This study found that safety or fear of uncertainties by users was among the reasons why they chose to utilize a given commercial public toilet in Kakamega town. This study reported 5% rape and 34.8% drug and substance abuse as having been witnessed in public toilets in Kakamega town. According to research findings, such evidence instill fear in public toilet users or encourages them for that purpose thereby influencing their reason for choosing a given public toilet facility. Supporting findings include Wolfson *et al.*, (2017) research in the United States which justified the use of public toilets for substance abuse. In this incident, public toilets are reported to be used by some users as narcotic injection sites because they are private and frequently visited by staff and customers who can provide emergency services to victims. Other findings by Police Foundation (2017), indicate that the majority of sexual assaults reported from public toilets by women amounted to 10%.

This study further found that craftsmanship and architectural design play a role in influencing the choice made in using a given public toilet facility. The availability of additional amenities and services such as good passage, lighting and ventilation will make a given public toilet facility record varying levels of usage. The outcomes of this study received support from Mildura Rural City's (2018) assertion that in Victoria State, Australia, facilities have the potential to enhance user experience, safety, accessibility, and hygiene thus increasing the level of usage. WASH (2022) records that conventional toilet facilities may present challenges for certain individuals, such as women with strollers, individuals with baggage, pregnant women, and the elderly. These challenges arise due to factors such as narrow entrances, small cubicles, turnstiles, and step

access, among others thereby influencing the utility of the facility.

CONCLUSIONS AND RECOMMENDATIONS

In conclusions based on the results from the study on utilization of public toilets in Kakamega town, commercialized public toilets were preferred due to their cleanliness, location and access and were more utilized. The study therefore recommends that the management of public toilets in the County Government of Kakamega should enhance cleanliness and access to all public toilets within the town.

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