

# Sanitary Facility for Urban-Public Use and Management – The Need for One in Area-3 of Auchi Polytechnic, Auchi, Edo State

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## ABSTRACT

Public spaces are vital to human existence because humans always like to congregate for various reasons. Public spaces are meant for all and are spaces found in intense public activities such as markets, schools, and shopping areas. Access to and efficient use of safe sanitation facilities is essential for public health. The lack of access to suitable sanitation facilities is a significant cause of risks and anxiety, especially for women and girls. Hence the need for this study aimed at Designing and Construction of an Independent Sanitary Facility for Urban-Public Use and Management which was achieved through the Establishment of open defecation in the area; Identification of the need for public convenience facilities for students; Design and construction of low-cost public conveniences facility in the study area; Definition of maintenance protocols and management policy and Establishment of maintenance protocols and management policy supervision body for regular review and decision making. Using the observation /survey approach as research design, data were collected from users of the newly constructed facility, existing facilities that are nonfunctional and analysis reveals that Open defecation and urination habits within the study area have reduced from 89% to 0.6%, that management failure of the existing facilities due to lack of regular maintenance and cleaning among others. The expected result can be replicable in other sectors of the national economy, public spaces or areas as it will upgrade the existing environmental conditions in most public spaces in our national life.

## 1. INTRODUCTION

Public spaces are vital to human existence because humans always like to congregate for various reasons. Pedro (2013) agreed that public space use is one of space and use, with individual behaviour and spatial practices at its core. Public space is meant for all and is spaces found in intense public activities such as markets, schools, shopping areas, transport terminals etc. The idea of public space stems from the fact that humans are not beings who remain in one place; hence they are bound to gather at one point in time or the other. Because they are meant to gather occasionally, it is also likely that not everyone

would stay without answering the call of nature. Thus, it is pertinent to understand the concept of sanitation.

The World Health Organization (2018) defined sanitation as access to and use facilities and services to safely dispose of human urine and faeces. A safe sanitation system is designed and used to separate human excreta from human contact at all steps of the sanitation service chain from toilet capture and containment through emptying, transport, treatment (in-situ or offsite) and final disposal or end-use. Access to and efficient use of safe sanitation facilities is essential for public health (Egboluche, 2019).

Anyone who has needed a public toilet facility has invariably learned that one nearby is priceless (Drangert & Greed, 2010), and such facilities have been consistently poorly managed. They have become the site of local political conflict, notwithstanding efforts at franchising them and involving communities in their management. This underscores the need to provide decent toilet facilities (Issaka & Enoch, 2013). The provision of adequately managed functional public convenience facilities located in public places will consolidate sanitary efforts of the government in a significant reduction in health-related problems (Asabia, 2011).

Safe sanitation is essential for health, from preventing infection to improving and maintaining mental and social well-being. Sanitation that prevents disease and ensures privacy and dignity has been recognized as a fundamental human right (World Health Organization, 2018). The lack of access to suitable sanitation facilities is a significant cause of risks and anxiety, especially for women and girls. Public conveniences are often thought of as toilets that allow people to meet their sanitary needs in public places. Evidence of lack or unimproved public convenience abounds for the need users as it is not uncommon to see defecated materials and offensive odour emanating from urination, especially in public places, drainage systems (gutter), open spaces, etc. (Michael & Olamiju, 2015).

The low-cost public toilets approach is a cheap alternative to the conventional sanitation approach as it utilizes technologies similar to the conventional ones. However, low-cost sanitation is designed to be installed, operated, and maintained at considerably lower costs than conventional. It employs pipes of small diameter laid at shallow depths to transport wastewater, preferably by gravity offsite. It is especially suitable in highly congested areas. Its lower costs are attained through reduced sewer length, pipes laid at shallow depths, and no need for deep and expensive utility holes (junction or inspection boxes used instead). The success of this type of

sewer system is highly dependent on the community, and it needs to be chosen upon consultation with future users (Abubakar, 2015). Thus, using a low-cost sanitary facility is necessary to achieve proper sanitation in public places, hence the need for the Design and Construction of a Low-Cost Sanitary Facility for Urban-Public Use and Management.

## **1.2 CONCEPT OF SANITATION**

The term "sanitation" has been given various definitions by different authors and is regularly used in various aid programs. The Miriam Webster Dictionary defines sanitation as keeping places free from dirt, infection, disease etc., by removing waste, trash and garbage, regular cleaning of facilities etc. It further defined it as the promotion of hygiene and prevention of disease by maintaining sanitary conditions (as by removing sewage and trash). Other dictionaries also mention the prevention of transmission of diseases and public and private health insurance.

In the developing world, the term sanitation gained a meaning of excreta disposal facilities (sanitary facilities), and this work will refer specifically to this denotation. Thus, sanitation refers to methods of hygiene that relate to the safe collection, removal and disposal of human excreta and wastewater (Abubakar, 2015). Public convenience, therefore, means a room or a space used for convenience purposes. It is a room containing a toilet, washbasin and ancillary equipment and includes a privy shower or urinal. "It is a facility that performs a multi-service function for urinating, defecating, washing and bathing, among others" (Abubakar, 2015).

## **1.3 THE NEED FOR SANITATION**

Sanitation is access to and uses facilities and services to safely dispose of human urine and faeces. A safe sanitation system is a system that separates human excreta from human contact at all steps of the sanitation service chain from toilet capture and containment through emptying, transport, treatment (in-situ or offsite) and final disposal or end-use. Inadequate sanitation systems

exist in many parts (WHO, 2018). Many people worldwide practise open defecation, and many more do not have services that prevent faecal waste from contaminating the environment (WHO-UNICEF, 2017). In many low- and middle-income countries (LMICs), rural areas are underserved, cities are struggling to cope with the scale of sanitation needs caused by rapid urbanization, while sanitation system maintenance is challenging and costly worldwide (WHO, 2018). The lack of safe sanitation systems contributes to the emergence and spread of antimicrobial resistance by increasing the risk of infectious diseases (Holmes et al., 2016) and, thereby, the use of antibiotics to tackle preventable infections. Inadequate management of faecal waste that includes antimicrobial residues from communities and health care settings can also contribute to the emergence of resistance (Korzeniewska, Korzeniewska, & Harnisz, 2013; Varela et al., 2013).

The United Nations (2015) report on the human right to sanitation entitles everyone to sanitation services that provide privacy and ensure dignity and that are physically accessible and affordable, safe, hygienic, secure, socially and culturally acceptable. The report further stated that Human rights principles must be applied in the context of realizing all human rights, including the human right to sanitation, and this includes:

**Non-discrimination and equality:** All people must be able to access adequate sanitation services without discrimination, prioritizing the most vulnerable and disadvantaged individuals and groups; **Participation:** Everyone must be able to participate in decisions relating to their access to sanitation without discrimination; **The right to information:** Information relating to access to sanitation, including planned programmes and projects must be freely available to those who will be affected, in relevant languages and through appropriate media; **Accountability (monitoring and access to justice):** States must be able to be held to account for any failure to ensure access to sanitation, and access (and lack of access) must be monitored;

**Sustainability:** Access to Sanitation must be financially and physically sustainable, including in the long-term.

The report further defined the normative content of the human right to Sanitation by **Availability:** A sufficient number of sanitation facilities must be available for all individuals; **Accessibility:** Sanitation services must be accessible to everyone within, or in the immediate vicinity, of household health and educational institution, public institutions and places and workplace. Physical security must not be threatened when accessing facilities; **Quality:** Sanitation facilities must be hygienically and technically safe. To ensure good hygiene, access to water for cleansing and handwashing at critical times is essential; **Affordability:** The price of sanitation and services must be affordable for all without compromising the ability to pay for other necessities guaranteed by human rights such as water, food, housing and health care and **Acceptability:** Services, in particular sanitation facilities, have to be culturally acceptable. This will often require gender-specific facilities constructed to ensure privacy and dignity.

#### **1.4 NEED FOR PUBLIC CONVENIENCES**

Public convenience is a toilet accessible to the general public (Abubakar, 2015). Public toilets are not only needed for everyday purposes but also crucial during a particular occasion or event (Michael & Olamiju, 2015). People are constantly moving, and wherever they go, toilet facilities are needed outside their own homes, as nature is bound to call. Toilet facilities are a significant part of development as they can significantly impact the comfort of individuals and families who visit public spaces, creating a lasting perception of the area in the minds of visitors. For this study, however, the convenience will be restricted to that provided in public places such as schools, churches, mosques, bus stations etc. These toilets are typically used by a more significant number of people, not necessarily living in the vicinity of the toilets, but instead,

people passing by, as in the case of the campus users.

Toilets are needed in every surrounding because if they are not provided, people will be forced to relieve themselves outdoors or use so-called "flying toilets". Thus, public toilets are needed due to human and environmental health (Abubakar, 2015). The lack of toilet facilities at the right time in the right place contributes to dirty streets that are unsanitary, unpleasant and can spread infection (Greed, 2006). The lack of available and appropriately located public toilet facilities at the right time during the day and night encourages street fouling, seriously impairing the quality of place and quality of life for local people (Abubakar, 2015). As Nwachukwu (2008) noted, the safe disposal of human waste is essential to improving community health and life quality. One of the primary means of transmission of many classic diseases and urinary, vaginal and anal infections is from human faeces. Therefore, it is always essential to provide clean public toilets (Hawker, Begg, Blair, Reintjes, & Weinbery, 2004), and this is mainly because students and staff of the institution spend a considerable large amount of time in school, and during this time, the call of nature is bound to come at any point in time.

## **2. ASSESS TO PUBLIC SANITARY FACILITIES AS A BASIC RIGHT**

Access to clean water and basic sanitation has been declared a fundamental human right, and it is essential for achieving gender equality, sustainable development and poverty alleviation (Meiyoshi & Robert, 2019). Going to the toilet is a basic human need, and from early times, people have used different means to meet this requirement (QS Supplies, 2019). We use the word "Bathroom" to go to the restroom most of the time. As an away-from-home toilet room, a public toilet can provide far more than access to the toilet for urination and defecation. People also wash their hands, use the mirrors for grooming, get drinking water (e.g. refilling water bottles),

attend to menstrual hygiene needs, and use the waste bins (Wikipedia, 2019).

A well-maintained public toilet is a facility that can make all the difference in any area. Insanitary conditions, nonfunctional, broken toilets can ruin the mood faster than saying loo. Although some public toilets are accessible, many charge a nominal fee, mainly for the upkeep of the toilets and to facilitate toilet attendant salaries (QS Supplies, 2019).

Open defecation or defecating outside a designated toilet in an open area is common in developing countries worldwide. The problem has reached crisis proportions and causes many health and hygiene issues amongst the more vulnerable sections of society like infants, children and ladies who are easily prone to infections (QS Supplies, 2019). This can be many, the foremost being a genuine lack of public sanitation facilities. Hence, most people are left with no option but to use open fields to answer the call of nature.

The pay toilet can be traced back almost 2000 years, to the first century AD. There are historical accounts of pay toilets in ancient Rome in 74 AD, even in the ancient world. In the late 19th century, John Nevil Maskelyne, an English magician, invented the first modern pay toilet. Walt Disney installed the first pay toilets in North America at the studio's popular Cafe on Hollywood Boulevard. Local municipalities operate pay toilets in most countries. However, in America, in the year 1970, people started attacking the idea and concept of paying for the use of this civic facility and pay toilets came to be banned in America (QS Supplies, 2019).

## **3. DESIGN AND CARE OF PUBLIC CONVENIENCE**

When a public toilet is to be provided, effective planning and design need to be undertaken to ensure that the installation of the toilets will benefit all in the community and minimize the opportunities for negative impacts. This is because the location of a public toilet is of great importance. As Abubakar (2015) noted, the perception of people on the location of any public

toilet is based on the experience of public toilets being associated with anti-social behaviour and, in many cases, experiences with toilets that have become run-down degraded. Greed (2005) opined that toilets should be proudly placed out in the open and not hidden and should be thoughtfully designed. Toilets need to be located in central public places and open, well-lit areas, and people should be proud of them as an essential townscape statement in their own right (Greed & Roberts, 1998). There should be proper signage to show the location of public toilets to ensure proper and adequate usage of such facilities.

As suggested by the World Health Organization (2010), there should be a member of staff present in the toilet vicinity who will clean the toilets and ensure the presence of toilet paper, soap and clean water in the facility continuously. Staff presence will help reduce the chances of vandalism and prevent the toilet facilities from becoming fouled and a health hazard. Hand washing basins with soap and water have to be provided. If public toilets are badly designed, badly maintained and poorly located, it will generate a sense of neglect and attract vandalism, anti-social behaviour and social disorder (Michael & Olamiju, 2015).

### **3.1 DESIGN OF LOW-COST PUBLIC SANITARY FACILITY**

The low-cost public toilets approach is a cheap alternative to the conventional sanitation approach as it utilizes technologies similar to the conventional ones. The toilet is eco-friendly, technically appropriate, socially acceptable, and economically affordable (National Informatics Centre, 2014). Abubakar (2015) observed that low-cost sanitation is designed to be installed, operated, and maintained at considerably lower costs. It employs pipes of small diameter laid at shallow depths to transport wastewater, preferably by gravity offsite. It is especially suitable in highly congested areas. Its lower costs are attained through reduced sewer length, pipes laid at shallow depths, and no need for deep and expensive utility holes (junction or inspection boxes used instead).

The success of this type of sewer system is highly dependent on the community, and it needs to be chosen upon consultation with future users. Simplified sewerage can be seen as conventional sewerage stripped down to its hydraulic basics. Low-cost sanitation technologies have many advantages, and their acceptance usually is not problematic. WHO and UNICEF (2010) stated that poor sanitation has severe consequences on health. It can be easily seen in the example of a simple illness like diarrhoea that continues to be a major killer in the developing world because a rather fundamental problem of dealing with excreta remains unresolved.

Sanitation as a method of containment and sanitization of human excreta is of utmost importance as it prevents the spread of diseases and protects both human and environmental health. In other words, sanitation systems form a barrier against the spread of diseases caused by pathogens and other organisms present in human excreta. Therefore, sanitation and human health are closely linked together. This fact has been known already for decades. Providing the infrastructure, essential services, sanitation systems, which meet users' requirements, and hygiene promotion have proven to be one of the most effective ways of improving health and preventing diseases (Abubakar, 2015).

### **3.2 BARRIERS TO EFFECTIVE OPERATION AND MANAGEMENT OF PUBLIC TOILETS**

In a study carried out by Tonny et al. (2018) on opportunities and barriers to effective operation and maintenance of public toilets in informal settlements: perspectives from toilet operators in Kampala classified the barriers to effective operation and management of public toilets to be economic constraints, management level barrier. In these caretaker constraints, **Economic constraints** were in terms of High Operation and Maintenance costs as one of the significant constraints to effective toilet operation. The study revealed that it is pretty expensive to empty public toilets. Due to the unprofitable nature of the



business, operators wanted support for emptying public toilets to increase their profit margin. Unfortunately, most of the money goes to empty the toilet. I plan to break down the toilet and construct rental houses' (Tonny et al., 2018). Failure to break even also relates to most customers' lack of money to pay for the services.

**Management level barriers** in terms of Inadequate supplies for cleaning such that toilet operators were aware of the importance of cleaning toilets, but many lacked the relevant supplies and equipment. Toilet operators reported that they did not effectively clean toilets due to an adequate supply of hardware inputs such as brushes, soap and disinfectants. They noted that proprietors were reluctant to invest in cleaning.

**Community-level challenges** in terms of sanitation are a neglected social right, especially in informal settlements. The report from the study showed that respondents believe that the relevant authorities have neglected the provision of sanitation and hygiene services in informal settlements. Poor hygiene practices in the community impede the efforts to promote effective operation and management of public toilets, especially in informal settlements—

**caretaker constraints** in terms of the exposure to occupational hazards. A deep analysis of the occupational risks and hazards faced by toilet operators revealed that toilet maintenance and operations increased their risk of exposure to biological, physical, ergonomic and psychological hazards. These hazards are elaborated on below.

**Microbiological hazards.** Psychological hazards. The study revealed that the high cost of toilet services forced community members to defecate in polythene bags which they consequently dispose of at the public toilets. It was noted that the nature of the toilet operations coupled with the working environment attracted psychological abuse from the community members, especially where people pay; some paying customers often abuse the workers there while some might even want to beat up the workers while others quarrel following the payment' (Tonny et al., 2018).

#### 4. THE STUDY AREA AND METHODOLOGY

This research is designed using the concept of safe sanitation and accessibility approach. According to Kothari (2008), the research design is simply the conceptual structure within which research is conducted, as it constitutes the blueprint for the collection, measurement and analysis of data. The study area – area III of the school of environmental studies, Auchi polytechnic, Auchi is located in Auchi, the headquarters of Etsako West LGA in Edo state. With a student population of approximately 1,500, the study area is always a beehive of activities from 7 am to 6 pm daily from Monday to Saturday when the students are in session that practically openly defecate and or urinates anywhere they see. This was achieved by identifying a safe location, conceptualizing low-cost materials, designing a sustainable sanitary facility using the identified materials, and policy formulation on sustainable management procedures for the facility upon construction. When completed, information on safe sanitation was gathered and analyzed using simple charts and percentage computation. With a population of about 1,500, using the student as a sample frame, a sample size of 21.67%, amounting to 325 respondents. The study further used the Pearson Correlation analysis tool to establish the link between availability against access to open defecation/urination reduction.

#### 5. FINDINGS

The study reveals that 55.8% of the respondents were male, and 44.2% were female. On the method of defecation adopted by the respondents, it was seen that 91.2% of the respondents used the available open space, 5% of the respondents never urinated or defecated at all while in school, and 3.8% of the respondents defecated in the surrounding bush paths around the vicinity of the study area. The entire respondents agreed that sanitary facilities were available within the study area, but the two available facilities were not functional since they were under lock and key.

The level of sanitation in the study area before the new project was in horrible shape and unhygienic for most female students to use hence a causal factor of the abandonment. The study also revealed that 89% of respondents avoided the existing facilities due to a lack of constantly available water for usage. This situation created an unhygienic situation that accounted for the project's abandonment. It also showed that 73.8% avoided the existing facilities due to the unavailability of handwashing facilities in the existing facilities. This was further complicated due to the lack of disinfectants. The study also revealed that the management of the existing facilities for sanitation within the study area was abysmal. This is so since 93.3% of the respondents submitted that the facilities are not cleaned daily by the expected cleaners.

This points out clearly, management defects that can account for causal factors of facility failure. Based on the last point, it was further observed that monitoring and evaluation of performance were lacking within the study area. This is so because it was proven from findings that monitoring and evaluation were presumably meant to check the quality of service delivery by the working class, which was never regularly carried out by respective officers. The study also revealed that Open defecation and urination habits within the study area have reduced from 89% to 0.6% since the construction of the new project.

### **5.1 HYPOTHETICAL TESTING BETWEEN ACCESS TO SANITARY FACILITIES AND OPEN DEFECATION/URINATION REDUCTION**

#### **Case 1**

**H<sub>01</sub>:**there is no significant relationship between access to sanitary facilities connectivity and open defecation/urination reduction in the study area

**H<sub>11</sub>:** There is a significant relationship between access to sanitary facilities connectivity and

open defecation/urination reduction in the study area

#### **Case 2**

**H<sub>01</sub>:**there is no significant relationship between the frequency of usability of the sanitary facility and the availability of water in the facility in the study area

**H<sub>11</sub>:** There is a significant relationship between the frequency of usability of the sanitary facility and the availability of water in the facility in the study area

### **5.2 CORRELATION ANALYSIS**

A correlation analysis was carried out, using the score based on the availability of sanitary facilities against access to sanitary facilities and open defecation/urination reduction in the study area. From this correlation, as shown in Table 2.3, it was established that the R-value is 0.740, P-value is 0.037, and the N value is 325. From the above values, we reject H<sub>0</sub> at an R-value of 0.740 or a P-value of 0.037. Based on the sample size of 325 respondents, there is a significant relationship between the scores based on the availability of sanitary facilities against access to sanitary facilities and open defecation/urination reduction in the study area. Thus with an R-value of 0.740\*, it shows a positive correlation. As the scores based on the access to sanitary facilities of the area increase, open defecation/urination reduction will increase. The reason for this finding is not farfetched. When these statistics begin to change negatively, the open defecation/urination reduction will decrease, thus worsening the entire open defecation habit in the study area. However, the current reality shows a very remarkable improvement. This is shown in table 1. Therefore, Reject H<sub>0</sub> and Accept H<sub>1</sub>

**Table 1: Correlation of Scores Based on access to sanitary facilities and open defecation/urination reduction**

		AVAILABILITY OF SANITARY FACILITIES	ACCESS TO SANITARY FACILITIES	OPEN DEFECCATION/URINATION REDUCTION
AVAILABILITY OF SANITARY FACILITIES	Pearson Correlation	.80	.740(*)	.093(*)
	Sig. (2-tailed)		.037	.015
	N	325	325	325
ACCESS TO SANITARY FACILITIES	Pearson Correlation	.740(*)	.80	-.275(**)
	Sig. (2-tailed)	.037		.001
	N	325	325	325
OPEN DEFECCATION/URINATION REDUCTION	Pearson Correlation	.083(*)	-.275(**)	.80
	Sig. (2-tailed)	.015	.001	
	N	325	325	325

Source: Author's Survey, 2022.

**CASE 2**

A correlation analysis was again carried out, but in this case, using the score based on the frequency of sanitary facilities against the availability of water in the facility and the corresponding hand washing facilities in the facility. It was established that the R-value is 0.70, P-value is 0.035, and N-value is 325.

From the above values, we Reject Ho at an R-value of – 0.70 or P-value of 0.035

Based on the sample size of 325 respondents, there is a significant relationship between the frequency of use of sanitary facilities and the availability of water in the facility. With 0.70\*, a

robust positive correlation has been established. The reason for this reality is glaring. From the findings, the frequency of use of facilities when water and others are readily available is 50% in the figure (Very high) when the entire study area was examined. This implies that water and other consumables attract users when available. Thus, as the scores based on the availability of water in the facility and hand washing facilities in the facility increase, the facility's usability will increase. This is because the condition availability will boost the zeal of respondents to increase their level of usage. This is shown in table 2.



**Table 2. Correlation of scores Based on Frequency of use and Availability of water**

		SCORES BASED ON FREQUENCY OF USABILITY OF SANITARY FACILITY	AVAILABILITY OF WATER IN THE FACILITY	HANDWASHING FACILITIES IN THE FACILITY
SCORES BASED ON USABILITY OF SANITARY FACILITY	Pearson Correlation	1	.700(*)	-.083(*)
	Sig. (2-tailed)		.035	.013
	N	328	328	328
AVAILABILITY OF WATER IN THE FACILITY	Pearson Correlation	.700(*)	1	-.272(**)
	Sig. (2-tailed)	.035		.000
	N	328	328	328
HANDWASHING FACILITIES IN THE FACILITY	Pearson Correlation	.083(*)	-.272(**)	1
	Sig. (2-tailed)	.013	.000	
	N	328	328	328

Source: Author's Survey, 2022.

## 6. CONCLUSION

Pedro (2013) agreed that public space use is one of space and use, with individual behaviour and spatial practices at its core. Access to and efficient use of safe sanitation facilities is essential for public health. The lack of access to suitable sanitation facilities is also a significant cause of risks and anxiety, thus the need for this study. Based on the findings from this research, it is safe to conclude that.

- Only Auchu polytechnic staff had access, but the students did not. In most cases, when nature calls, most students (as seen from the findings) are forced to use the open due to the

lack of proper toilet facilities. This has created a significant challenge, especially for the female gender, which is compassionate beings and is more prone to infections than the males; hence there is a high tendency for them to get infections and diseases in public places. The reality of this created a gap in the need for this project.

- Open defecation and urination create vulnerability, particularly for female students who experience a loss of dignity or are exposed to abuse and harassment while defecating in the open (Myles & Marcella, 2013) and that Open defecation – OD poses a substantial threat to human health, safety, privacy, and

dignity, especially for women as it is one of the most vital expressions of extreme poverty (Desai, McFarlane, & Graham, 2015).

- Part of the cause of the failure of the existing sanitary facilities within the study area is the management of the existing facilities for sanitation within the study area, which was very poor. This is so since 93.3% of the respondents submitted that the facilities are not cleaned daily by the expected cleaners.
- That in terms of quality assurance and the supervisory role was lacking, thus accounting for causal factors of facility failure based on the further observation that monitoring and evaluation of performance were found to be lacking within the study area.
- The research has also helped standard redesign management and monitoring policy for the sanitary facility operation and management by enlightening the management in charge of facilities on what to look out for in the provision and management of sanitary facilities in public places.
- From the evidence of the existence and functionality of the project, Open defecation and urination within the area in question have reduced from 89% to 0.6% since the construction of the new project. Therefore, this has helped achieve the SDGs target to achieve universal access to adequate and equitable sanitation and hygiene within the study area before 2030.
- The environmental quality of the surrounding environment will improve and get better over time since there is a drastic reduction in Open defecation and urination within the area in question, which is now reduced from 89% to 0.6%

## **7. RECOMMENDATION**

Sanitation is defined as access to and use of facilities and services for the safe disposal of human urine and excreta. A safe sanitation system is defined as a system that separates human excreta from human contact. This is the primary concern of any health, environmental and physical expert for any group of people. Based on the

findings and conclusion, the following recommendation is put forward.

- This study recommends that the availability of sanitation facilities and the direct and unrestricted access to such facilities are morally basic privileges that anyone in any society should enjoy. Therefore every responsible organization (Auchi polytechnic inclusive) must strive to afford and provide such facilities for its citizenry. This is so as it will reduce public health-related issues that are bound to arise due to open defecation and urination.
- This research recommends that water, as an indispensable requirement and ingredient of safe, effective and efficient sanitation, must be made available for the successful use and maintenance of the sanitation facility in the study area and any other sanitation facility anywhere in the world. By this, the research means water for washing the body, flushing the system when done with the process of excreting and washing hands and face when done with the entire process for all categories of students within the study area.
- This research also recommends regular daily cleaning of the sanitation facility as a prerequisite to constant and sustainable effective use. This is so because regular and constant maintenance is the sure way to avoid any sanitation facility being abandoned, among other reasons.
- The research has exposed the failure of the existing management system of sanitation facilities management within and around the research area; it is recommended the implementation of the standard redesign management and monitoring policy for the sanitary facility operation and management through constant and regular interval evaluation processes to ensure quality assurance is constantly evaluated and appropriate policy measure is taken when found to be below the expected standard level.

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