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An Assessment of Public Toilet Facilities and Their Associated Problems in Anyigba-Dekina Local Government Area of Kogi State, Nigeria

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ABSTRACT

Public toilets play a vital role in community health and individual well-being. The purpose of this study is thus to access public toilets facilities and its associated problems. The study objectives includes: to identify the spatial location of public toilets facilities in the area, to identify problems associated with the uses of this toilets facilities and to assess user's satisfaction with this facilities. A total of 100 users were examined through the administering of questionnaires to obtain information on their satisfaction as well as the problem associated with the use of these facilities. The primary data collected were analyzed using the descriptive statistics including the use of frequency table and percentage. The findings of this study revealed that public toilets facilities are inadequate and are heavily relied upon by households within the vicinity, especially those that are living without toilets at home and those who cannot access anyone. The study further revealed that the dominant problems encountered in the use of the public toilets are poor maintenance (44%). Majority of the respondents (68%) are not satisfied with the use of the public toilets facilities as the most common diseases encountered is Toilet infection (75%) and well as Diaharea (15) and Cholera (6). Government and sanitation institutions should provide additional toilet facilities in Anyigba to help reduce the inadequacy of toilet facilities to curb open defecation practices. Sanitation agencies and toilet caretakers should ensure that toilet facilities in the area are properly managed and kept clean to enhance their sustainability and utilization.

1. Introduction

Access to and efficient use of safe sanitation facilities is an essential part of public health. This underscores the need for the provision of decent toilet facilities for all. However, more than 50% of the world's population did not have access to a toilet by the end of 2020 (Antwi-Agyei et al., 2020). About 2.6 billion people, mostly living in low-and middle-income countries in Asia and Africa, face the daily challenge of finding a bush, train track or empty lots where they can urinate and defecate in relative privacy (Ijaware et al., 2025). Between 1990 and 2008, the share of the world's population that had access to basic sanitation increased only 7% to 61% of the world's citizens (UNICEF, 2010), and between 1990 and 2025, about 2.8 billion people gained access to improved sanitation facilities (WHO, 2025). Currently, two in five people do not have the security and dignity of a hygienic latrine or toilet (WHO/UNICEF, 2013). In most low-income urban communities in Ghana, having access to a private toilet is a privilege. Although Ghana ranks 157 out of 182 on the Human Development Index, it has the fourth lowest rate of sanitation coverage worldwide (Water and Sanitation Sector Monitoring Platform, 2012). Due to the lack of access to a

toilet facility, open defecation is prevalent in all 10 regions of Ghana, but most widespread in the Upper East Region with about 82% of households without any form of latrine, followed by the Upper West Region with 78.7% (Water and Sanitation Sector Monitoring Platform, 2013)

Defecating and urinating in open spaces is a common phenomenon in developing nations especially in Nigeria, which has made toilet a critical link between order and disorder and between good and bad environment as the need to urinate and defecate is irrepressible (Isaac and Michael, 2015). Ayee and Crook (2003) revealed that lack of proper coordination and maintenance of public toilets have left huge environmental and health implications which has made it necessary that locating hygienic and proper management of public conveniences will promote and safeguard public health (Eke et al, 2016). Jasper and Bartram (2012) stated that access to adequate sanitation

has both immediate and long-term benefits for socioeconomic impact. It may improve health by reducing diarrhoea and gastrointestinal diseases and/or protect the environment for socio-economic development and poverty reduction. Yet, approximately 673 million people practice open defaecation, and the situation is worse in Southern Asia and Sub-Saharan Africa. Public toilets should be seen as a core component of environmental design, adding to a city's quality and viability (Greed, 2004).

Akindiya, (2020) argued that Nigeria was ranked second in the world with the highest number of people practicing open defecation, estimated at over 46 million people. Only India ranked worse than Nigeria in open defecation, according to the Water Sanitation and Hygiene | WASH NORM survey conducted by the United Nations Children's Fund [UNICEF] in conjunction with the Nigerian Ministry of Water Resources and National Bureau of Statistics. The survey also found that only 11 out of the 774 Local Government Councils in Nigeria are free from the practice of open defecation (Daily Trust, 2019). Knight and Bichard, (2011) stated that provision of public toilets is not only a matter of land use but also an essential design and planning concern to make cities more accessible, inclusive, and convenient for all members of society as it often overlooks the needs (and even the existence) of women, children, disabled people, and the elderly. Therefore, ensuring public toilet provision is available to everyone can be considered essential to removing a serious barrier to wider participation in public life.

Shared toilets have been found to expose users to high health risks, such as sanitation-related diseases including diarrhea, gastroenteritis, and hookworm (Tumwebaze, 2014; Heijnen, 2014). Heijnen, (2014) stated that shared ("limited") sanitation, however, serves most people in low-income settlements and, in most cases, it is the only solution to their sanitation needs. Consequently, underfunded shared sanitation could deprive most people access to this sanitation option, which may be the only alternative for crowded and low-income urban areas, serving to reduce and/or eliminate open defecation.

Water and Sanitation Program (WSP, 2012) desk study in Nigeria showed that fecal contamination of the environment is the root cause of an annual average of 5,400 cases of cholera affecting Nigeria with mitigating cost estimate of US\$3.5 million (N455billion) annually. Osinubi (2003) stated that 73% of the residents in Agege that uses pit toilet are either getting drinking water from well or buying it coupled with open defecation and urination. Looming huge health implications abound. DCL.G (2008) notes that places where people live, shop, work or take recreation are more accessible and attractive when public toilets are well planned, designed, maintained, clearly signposted and available as well as free from communicable diseases when people need to use them (including late at night). According to the World Health Organization, public toilet provision is defined as a major factor in Age Friendly Cities (Help the Aged, 2007; Knight and Bichard, 2011). However, toilet provision has remained inadequate in most communities, and also in developing countries such as Ghana, China, and India which lack even

rudimentary toilet access (Gershenson and Penner, 2009; Molotch and Noren, 2010).

Globally, at least 2.6 billion people lack access to improved sanitation, and 437 million of them live in sub-Saharan Africa (WHO, 2004, Niwagba, 2007). It is equally estimated that about 1 billion people still defecate in the open. When people lived in small groups as hunters and gatherers, environment naturally decomposes their refuse and human wastes. Waste disposal became an important concern as societies moved from nomadic cultures to concentrate settlements. This is because of the low carrying capacity of the environment to handle it. Safe and hygienic disposal of human wastes is an increasing problem in most cities in Nigeria, as it is in most developing countries. Improper, unsafe and unhygienic disposal of human excreta has a direct relation to environmental quality, leading to high mortality, morbidity and decreasing community health, sanitation and productivity (Pathak, 1991). The combined effects of rural-urban migration of urban poor have led to overstretching of water and sanitation facilities

WHO and UNICEF (2000) stated that public latrine has serious consequences to health. It can be easily seen on the example of illness like diarrhea that continues to be a major killer disease in the developing world, due to the fact that a rather basic problem of how to deal with excreta still remains unresolved. According to WHO (2004) about 1.8 million people die every year from diarrhea diseases including cholera of which 90% are children under the age of five, mostly in developing countries. Open defecation is the riskiest sanitation practice WHO/UNICEF (2011) WSP (2012) revealed that 34 million Nigerians practice open defecation. Open defecation as a result of lack or unimproved sanitary facility has considerable social costs, loss of dignity and privacy, risk of physical attack and sexual violence may not be easily valued in monetary units. In order to meet the Millennium Development Goal (MDGs) 7 on water, sanitation and sustainable hygiene by 2015, Nigeria needs to build more than 8,000,000 public conveniences.

In recent years, research on public toilets has been conducted regarding their provision, governance, and implementation policies in governmental, professional, organizational, and cultural contexts (Bichard et al, 2004; Gershenson and Penner, 2009; Greed, 1996; 2003; 2004; 2005; 2009; Gurel, 2008; Hanson et al, 2007; Knight and Bichard, 2011; Molotch and Noren, 2010; Penner, 2005; 2009).

Antwi-Agyei et al; (2020) in their work on understanding the barriers and opportunities for effective management of shared sanitation in Low-Income Settlements the Case of Kumasi, Ghana. Their study revealed that the identified challenges/barriers associated with shared toilets includes overcrowded users, poor user behaviors, conflicts among users, and high cost associated with frequent desludging. In like manner Isaac and Michael (2015) studied Characteristics and Management of Public Toilets in Agege, Lagos, Nigeria, the results of their study shows that available public toilets in the area are inefficient and insufficient; lack of adequate space provision; bad odour and lack of privacy were among the numerous challenges of users. This study further recommends that sanitation mapping for accessibility, performance and

appropriate location of public toilets; hygiene education for users; provision of adequate direction for all existing and proposed toilets and; institutional capacity building for staffers of government agencies responsible for management of public toilets in the study area.

Anyigba is a fast-growing city in Nigeria because of the presence of institution. With a steady rise in population in the last 10 years, it has recorded an increasing growth due to some socio economic and political developments. Commercial activities have grown and brought with it greater demand for more basic facilities and services. Facilities already in place are grossly inadequate or over stretched. These facilities include public toilets which are not only in disgusting state but their maintenance and adequacy have been put to question. The city' administration has done little to address that problem. In the few public toilets (at the parks, markets or at neighborhood shopping complexes), the air is often so foul and wafts out into the surrounding neighborhoods.

One of the problems that are really disturbing in Anyigba is the insufficiency of toilet facilities both in compounds, hostels and public places, there are not enough toilet to serve the people. In

Anyigba, many public institutions like Schools, Civil Service Offices, Mosques, Churches and Private companies do not have functional and decent toilets. In some cases, the existing ones are either over stretched or too dirty.

However, despite there has been a lot of write-up on public toilets system, none has succinctly addressed public toilets and the associated problems in Anyigba. This study will go a long way in investigating the problems that are associated with public toilets. This study examines public toilet facilities available in public areas of Anyigba community. The findings will be the basis for making recommendations towards improving sanitary conditions in cities in Nigeria.

Aim and Objectives

The aim of the study is to appraise problems associated with public toilet facilities in public areas of Anyigba. The aim of this study was achieved through the following objectives.

1. To identify the spatial location of the various public toilets facilities in the study area
2. To identify the problems associated with public toilets facilities in the study area
3. To assess users' satisfaction in the uses of public toilets facilities in the study area

2. Study Area

Anyigba is located in Dekina Local Government of Kogi State, Nigeria on the Igala Plateau in the northern part of the Anambra basin. Its three-dimensional positions are: Latitude 7°15' 7°29'N, longitude 7°11'-7°32'E and an average altitude of 385 meters above sea level. It has a total land mass area of 42 sq. km². Anyigba has several communities such as Ojuwo, Ijil, Iji2 ojofu, Oyifu, Abuja area, University village, Anokwu1, Anokwu2, Kaduna-efekpe, ljebu-ode omedo, Ofejikpi, Ogane-

aji. Ajetachi. it is strategically located at the centre of igala land (kogi cast), (Adeniyi, 2005 and Musa, 2010).

The region is also generally marked by river drainage parts. There are two major rivers in Anyigba namely the Ofu River and Ogane-Aji River, which flow from the west to east at the north-eastern part of the town (Maduka, 2017). The climate region is characterized partly by double and single maximum rainfall pattern with about four months of dry season, the rainfall is about 1,600mm per annum. Rainy season occur between April through October and the peak is September. Rainfall in Anyigba is seasonal which means it is not all the year Audu (2012). The study area falls within the tropical wet and dry region with an annual temperature of 25°C. In the mornings, relative humidity generally rises to over 80% and falls between 50%-70% in the afternoon during the wet season

The population of Anyigba town has grown due to the fact that people have migrated to Anyigba to benefit from it's function (Administrative, Transportation, commercial etc., the establishment of the university coupled with improved economy has drastically increased the rate of expansion and growth of Anyigba town. According to the 1991 population figure of Anyigba it has a total population of 40,765 (males-20354 and females-20,411) with an annual growth rate of 3.6%. The 1991 population figure published by the National Population Commission can further be projected for 2020 using Graves (2012) formula for population projection, viz: $Pp-Po(1+r/100)^n$

Where Pp = Projected population,

Po = Original population,

R = rate of growth, &

n = number of years elapsed between original and projected population. Using this formula, the present (2020) population of Anyigba is approximately 113,693 persons

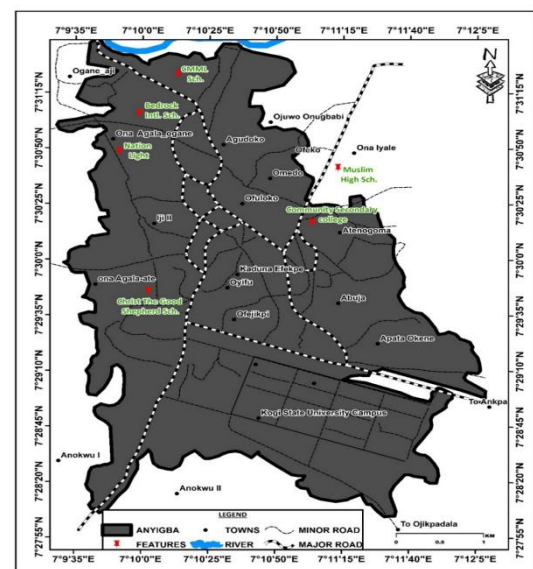


Figure 1. Anyigba

3. METHODOLOGY

Descriptive survey research design was used for this study. This research design has been described by Nwankwo (1999), as a design in which a group of items are studied by collecting, analyzing and interpreting data from a few people considered to be representative of the study population. However, this study is descriptive as well as analytical survey because it involves the collection and evaluation of data on the evaluation of Public toilets and its associated problems in Anyigba, Dekina Local Government Area, Kogi state

The primary data was sourced through the administration of questionnaire. The questionnaire was used to gather information on the evaluation of public facilities users' satisfaction with the use of the public facilities, as well as problems encountered in the uses of this facilities. Secondary data were obtained from related books, journals, published Table 1: Sample size determination

LOCATION	AVERAGE USER	QUESTIONNAIRE
COCONUT GARDEN (KANO PACK)	150	$150/300 \times 100 = 50$
HANALA HOTEL ROAD	50	$50/300 \times 100 = 17$
SABON GARRI (MARKET AREA)	100	$100/300 \times 100 = 33$
300	100	100

Source: Author, 2023

The study utilized the Simple random sampling technique to select 100 study participants for the 3 public toilets in the study area. The sample size of users was derived from periodic counts made on Mondays, Wednesdays and Friday. The data collection was carried out on the selected days, between the hours of 12.00pm and 3.00pm a period of hot weather when the body system must have been hot and yielding to toilet services.

The GPS was used to pick coordinates of this public toilets in Anyigba which were then exported to the Arcmap environment to produce a map showing the locations of this public toilets

and unpublished articles, magazines, conference articles, government ministries and agencies which was used to compliment the primary source of data to have a robust evaluation of public toilets in the area.

Study population

The study population includes users of the three functional public toilets in the study area. From the information gathered during the reconnaissance survey from management of this public toilets namely, Coconut gardens, Sabogary, and Along Polaris bank, stated that on the daily average about 150, 100 and 50 users uses this public toilets respectively. This implies that on the average there are 100 users of the 3 public toilets. Therefore the 100 users was estimated as the sample size for this study. The distribution of questionnaires for this area has been presented in Table 1.

The data that was collected from this study was subjected to Microsoft Excel for descriptive statistics. Descriptive statistics was use to analyze the users satisfaction, problems associated with the uses of the public convenience. Descriptive statistical methods that was employ are tables, frequency and percentage. Since the data that was gathered were raw data, the descriptive statistic was used for data summary. The descriptive statistics was used to achieve objectives 2 and 3 of the study, while for objectives 1, the arcmap tool was used in presenting the spatial location of this public toilets in the area.

4. RESULT AND DISCUSSION

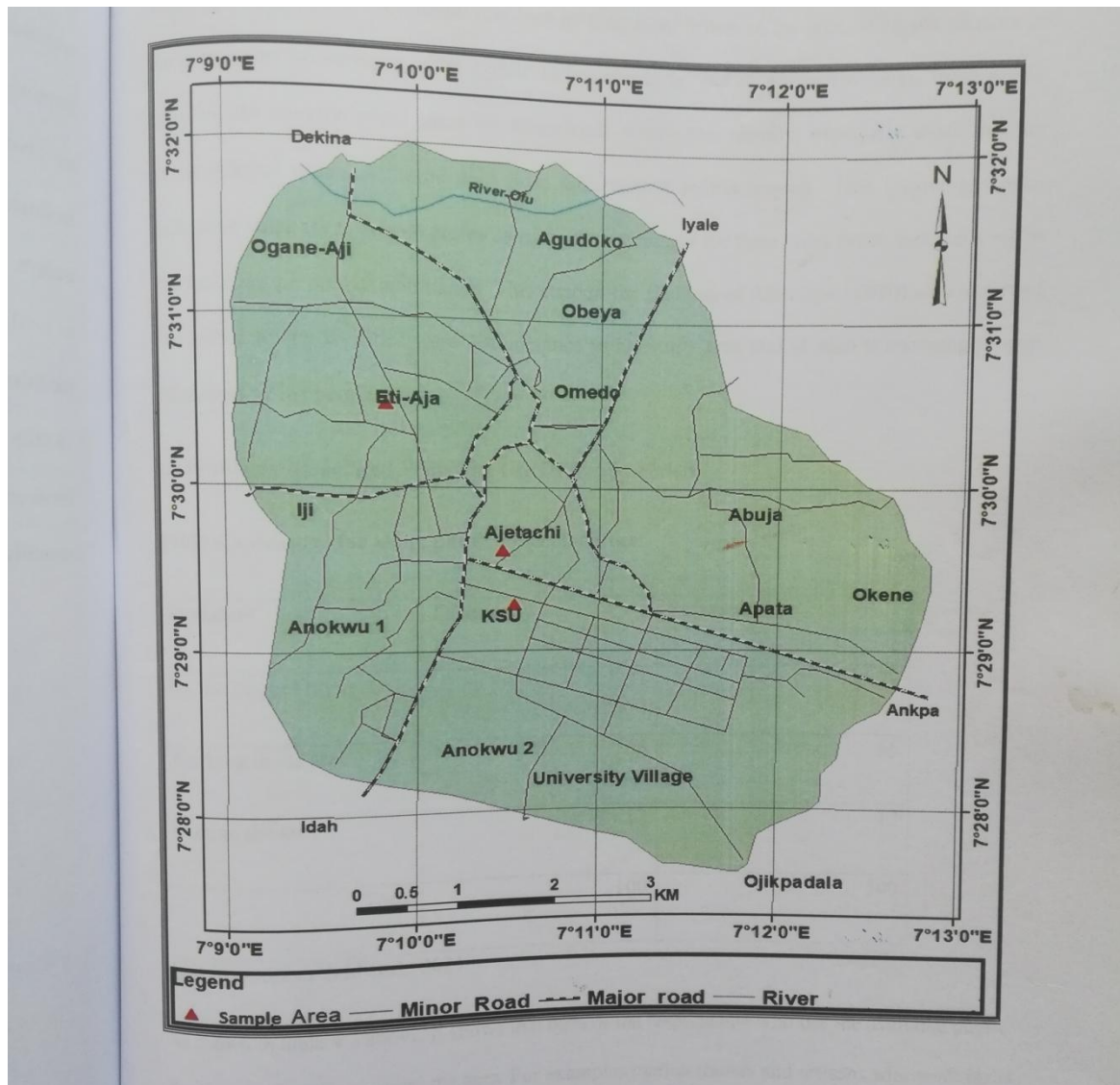


Figure 2. Anyigba showing the public toilets

The figure 2 above shows the location of the three (3) functional public toilets in the area. The toilets are not evenly distributed despite its inadequacy. This implies that there are minute numbers of functional toilets in the area. With the increase in the population of Anyigba more public toilets need to be put in place. However, these public toilets are heavily relied upon by households within the vicinity, Table 2: Reasons for using public toilets facilities

especially those that are living without toilets at home and those who cannot access anyone. This encourages open defecation since these people prefer using bush or drainage for their toilet needs especially when these facilities are poorly maintained. This supports the findings of Akindiya, (2020) who observed that public toilets facilities inadequacy in an encourages open defecation by the people.

VARIABLES	FREQUENCY	PERCENTAGE
No toilet facilities at home	22	22
Working in the area	66	66
Visiting the area	12	12
Total	100	100

Source: Authors, 2023

As shown in table 2 above, it shows that 66% of the respondents who use the available public facilities are working around the area. For examples market traders and artisans who work close to the location of this public facilities. 22% said they use this public facilities because there are no provision of toilets facilities in their dwelling units. While

12% of the respondents said they use the public facilities on visit. This support the findings of Issaka and Faach. (2013) who observed that most respondents uses public toilets because there are no toilet facilities in their home. This implies that the dominant use of this facilities are those who work close to this public facilities in the study area.

Table 3: Distribution of whether people pay for the use of the public facilities

Variable	Frequency	Percentage
Yes	78	78
No	22	22
Total	100	100

Source: Author, 2021

As shown in the table 3 above, majority of the respondents accounting for 78% of the proportion pay for the use of this facilities, while 22% of the respondents do not pay for the ne Table 4. Problems associated with the use of the public toilets

of this facilities. The implications of this since respondents pay for the use of public toilets facilities, they will also expect satisfaction with the use of this facilities.

Problems	Frequency	Percentage
Lack of facilities	31	31
Conflict among users	12	12
Poor maintenance	44	44
Privacy	13	13
Total	100	100

Source: Author, 2023

As shown in the table 4 above, it reveals that the dominant problems encountered in the use of the public toilets is poor maintenance, 44% of the respondents stated that poor maintenance are the associated problem with the use of this public facilities. This concur with the findings of Isaka and Enoch (2013) who observed that respondents were faced with poor maintenance in the ne of this facilities. 31% of the

respondents stated that lack of facilities(like shortage of water is one of the problem encountered. This support the findings of Isaka and Enoch (2013) who observed that the major problem associated with the use of public toilets is lack or inadequate toilets facilities. 12% stated that one of the problem encountered is conflicts among users while 13% said there is lack of privacy in the use of public toilets.

Table 5: Conditions of the public toilets facilities in the area

conditions	Good	Fair	Poor	Sum	Mean	Remark
Clean	8	53	39	169	1.69	Poor
Services	4	25	71	133	1.33	Poor
Privacy	3	71	26	177	1.77	Poor

Source: Author, 2023

As shown in the table 5 above, the conditions of the public toilets facilities was measured using 3 point likert scale of which the mean response was calculated as $3+2+1-6$ divided

by 3 gives 2. It means that if mean score is less than 2 it means its poor, while above 2 mean it's in good condition. From table 5, it reveals that based on the services provided in the public facilities, it is poor, privacy its poor and the cleanliness of this

public toilets facilities are also poor. The above findings buttressed the work of Eke et al [2016].

Table 6: Common diseases contracted from the use of public toilets in the area

Diseases	Frequency	Percentage
Cholera	6	6
Diaharea	15	15
Toilet infection	75	75
No infections	4	4
Total	100	100

Source: Author, 2023

The table 6 above assessed the common perceived diseases contacted as a result of patronizing the public toilet in the study area. The result revealed that Toilet related infections (75) is the most prevalent diseases contacted. This is followed

by Diaharea (15%), Cholera (6%), while people that felt not to have contacted any form of diseases accounted for only insignificant 4% of the respondents.

Table 7: Level of satisfaction with the toilet facilities in the area.

Satisfaction	Frequency	Percentage
Very satisfied	0	0
Satisfied	32	32
Not satisfied	68	68
Total	100	100

Source: Author, 2023

As shown in the table 7 above, majority of the respondents accounting for 68% are not satisfied with the use of the public toilets facilities while 32% of the respondents are just satisfied.

Discussion of findings

The findings of this study revealed that public toilets facilities are inadequate and are heavily relied upon by households within the vicinity, especially those that are living without toilets at home and those who cannot access anyone. This encourages open defecation since these people prefer using bush or drainage for their toilet needs especially when this facilities are poorly maintained. This support the findings of Akindiya, (2020) who observed that when public toilets facilities are not adequate in a study area, it encourages open defecation by the people

The study further revealed that the dominant problems encountered in the use of the public toilets is poor maintenance, 44% of the respondents stated that poor maintenance are the associated problem with the use of this public facilities. This concur with the findings of Isaka and Enoch (2013) who observed that respondents were faced with

poor maintenance in the use of this facilities. 31% of the respondents stated that lack of facilities (like shortage of water) is one of the problem encountered. This support the findings of Isaka and Enoch (2013) who observed that the major problem associated with the use of public toilets is lack or inadequate toilets facilities. Conclusively, majority of the respondents accounting for 68% are not satisfied with the use of the public toilets facilities while 32% of the respondents are just satisfied.

5. Conclusion

The study concluded that public toilets facilities in the area are inadequate and at such will encourage open defecation in bushes and drainage channels. The study further stated that the dominant problems encountered with the use of public toilets facilities in the area is poor maintenance as users are not satisfied with the use of public toilets facilities in the area.

Based on the analysis of this study and the information that have been gathered the following recommendation are made to assist policy makers to improve and solve public toilets conditions and problems in urban centers particularly, Anyigba.

1. Government through the district assemblies and sanitation institutions should provide additional toilet facilities in Anyigba to help reduce the inadequacy of toilet facilities and for people to stop open defecation practices.
2. Sanitation agencies and toilet facilities caretakers should ensure that toilet facilities in the area are properly managed and kept clean to enhance their sustainability and utilization.
3. Based on user's dissatisfaction, there is the need for effectiveness, quality of service, and improved standard according to user satisfaction.

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