

**ASSESSMENT OF ENVIRONMENTAL SANITATION PRACTICES IN FEDERAL
CAPITAL TERRITORY- ABUJA**

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ABSTRACT

Most households are polluted with waste garbage, due to the poor sanitation habits. Several studies have examined the phenomenon, and reported that the use of different environmental sanitation practices and community based sanitation are key to achieving sustainable environmental sanitation. However, these areas are yet unexplored in the study area. The objectives of this study is therefore, to; examine the existing environmental sanitation practices in FCT-Abuja and determine the level of awareness on the impacts of poor environmental sanitation hygiene. Questionnaire were subjected to analyses using mean score Chi-square and Mann-Whitney U test. The findings reveal that the respondents in household sectors 40% were male and 60% were female which shows majority of the respondents were female and their knowledge of interaction with the subject of study is not shallow as most of them do the home care cleaning. Mann-Whitney U test was used to test hypothesis one, which states that there is no significance difference between male and female participation in environmental sanitation practices in the study area. The results show the mean rank participation for male and female in environmental sanitation practices in the FCT to be 10.64 and 12.36 respectively. The Mann-Whitney coefficient is 51.000 the asymptotic significance is 0.524. The result indicated that female participation in environmental sanitation practices is greater than the male. $F_x (12.36) > M_x (10.64)$. Since the calculated P-Value 0.524 is greater than 0.05 at 95% confidence level we accept the null hypothesis and conclude that there is no significance difference between the mean ranks participation of male and female in environmental sanitation practices in FCT-Abuja. The study also determined the level of awareness of respondents on the impact of poor environmental sanitation hygiene. Chi-square calculated value of 0.13 with 390 as the degree of freedom at 0.05 level of significance. The alternative hypothesis which state that there is no significance difference in the level of awareness of respondents on the impact of poor environmental sanitation is accepted. Which mean there is no significant difference in the level of awareness of respondents on the impact of poor environmental sanitation hygiene in the FCT. Therefore, the paper recommend that policies that would promote sound environmental education should be put in place in order to educate the populace and enlighten them on the importance of environmental sanitation in the FCT and the need to legislate some of the environmental laws on sanitation in the FCT.

Keywords: Environmental Sanitation, Practices, Awareness, FCT Abuja.

1. INTRODUCTION

Environmental sanitation is the principles and practices of effecting healthy and hygienic conditions in the environment through proper collection, removal or disposal of human excreta, household waste, and refuses as they impact upon people to promote public health, welfare, improve quality of life, reduce poverty and ensure a sustainable development (Danbaba, Nabegu, Mustapha & Binta, 2016). Sanitation includes appropriate health and hygiene awareness and behaviour, acceptable and affordable as well as sustainable services. Inadequate sanitation, however, does not just mean having limited access to a toilet or latrine, which is only one component of the sanitation value chain. Systems for treating excreta and waste water are equally important as, (if not more than) the provision for latrines. lack of adequate waste water treatment has wide spread repercussions such as environmental degradation, contamination of drinking water and a multitude of related health and livelihood impacts. Environmental sanitation practices refer to a set of activities and measures aimed at maintaining and improving the cleanliness and hygiene of the environment to prevent the spread of diseases and promote overall well-being. These practices are essential for safeguarding public health, preserving natural resources, and minimizing the impact of human activities on the environment. It entails Proper disposal of solid and liquid waste which is crucial in preventing environmental pollution and the transmission of diseases. This includes methods like recycling, composting, and safe disposal of hazardous waste (World Health Organization, 2023).

slums/shanties have emerged in city fringes where the water sanitation problems are more pressing. The slums with poor housing are prominent features in our environment, particularly in cities due to poor implementation of town planning laws, poor land use control, rapid spatial expansion of settlements, inadequate provision of infrastructure services (Gosselin & Furgal, 2001).

These practices are often implemented by various government agencies, non-governmental organizations, and international bodies in collaboration with local communities. Nigeria's environmental sanitation efforts are essential for addressing the country's health challenges, ensuring access to clean resources, and reducing the impact of human activities on the environment. However, there are ongoing challenges, such as inadequate infrastructure and resource constraints, which require continuous efforts and investments to improve environmental sanitation in the country. For example, the inability to adhere to the Federal Capital Territory (FCT) development plan has created an upsurge of slums shanty towns in the immediate environs of the city. Spontaneous squatter settlement continues to provide sheltr for immigrants in an environment of great overcrowding appalling squalor (Daramola, 2012). The characteristics of life in these slums/squatter areas make the provision of sanitary services are extremely difficult. In many cases, the poor live in neighborhoods without legal tenure of land or in areas authorities have deem unfit for habitation. Their illegal status mean that they are often not taken into account in municipal programmes that aim at or extending service as water supply basic sanitation, garbage collection, flood protection, health care, among others.

2. MATERIALS AND METHODS

Profile of the study Area

The Federal Capital Territory has a population of 1,406,239 in 2006 head count (NPC, 2009) with a population growth rate of 4.0% and density of 192 people per square kilometer with daily influx of people into the territory. The population of the FCT has been increasing rapidly, over the years. In 1977, the population was 125,000. This increased to 378,671 in 1991 in 2006 head count; it was 1,406,239 with an estimated growth rate of 4.0% per annum. Two major factors account for this growth, the natural and increase influx of low income migrants. This is particularly reflected in the increasing shortage of housing, employment provision of basic social amenities in the Territory (Mundi & Chup, 2000).

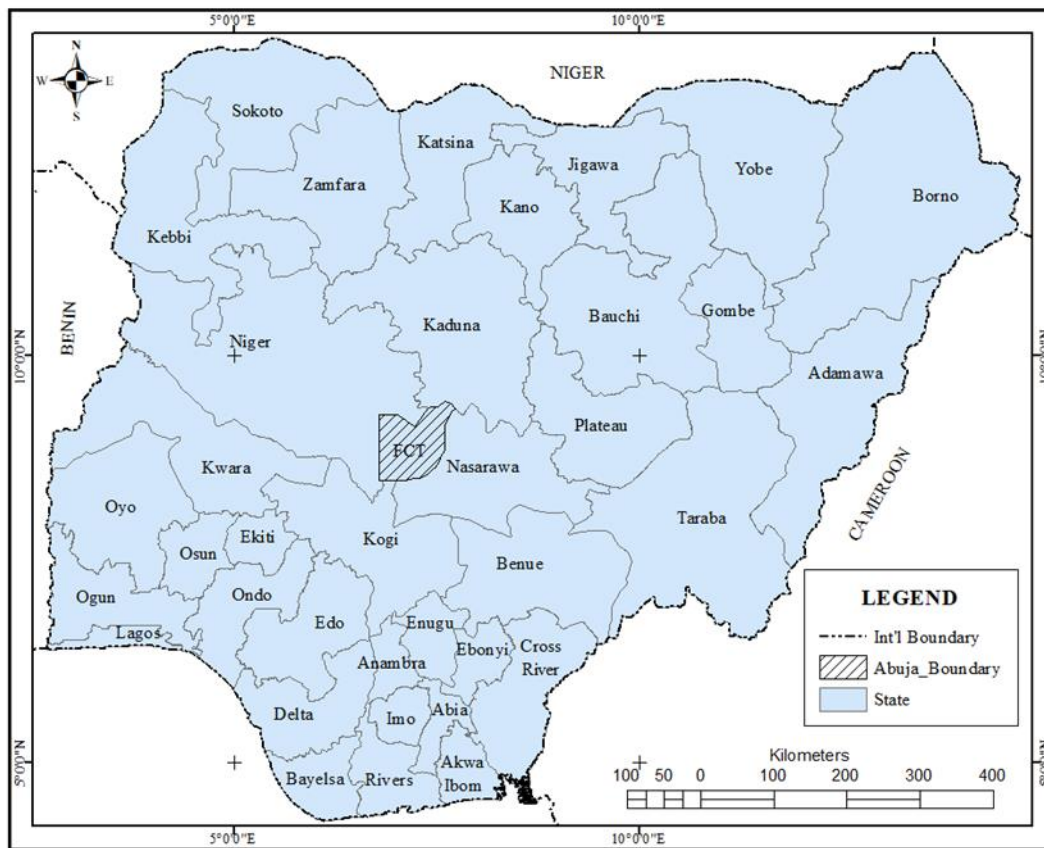


Figure 1: Nigeria Showing FCT
Source: Adapted from administrative map of FCT (2018).

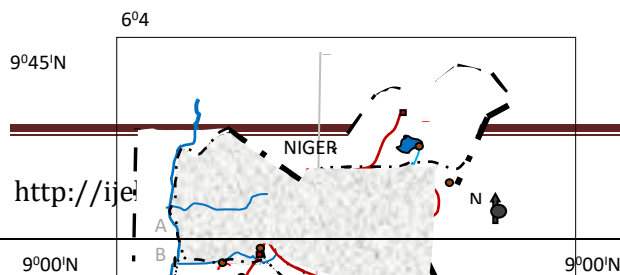


Figure 3: AMAC and Gwagwalada area council
Source: Adapted from administrative map of FCT (2018).

Derivation of Sample Size

To get the population of the study area i.e AMAC Gwagwalada, STEPWISE FORMULA FOR DEMOGRAPHY is adopted in other to get the projected population of the two area councils.

Thus: $P_t = P_o (1+r)^t$.

100

P_t = present population

r = growth rate (4.0%)

100

t = time (13yrs)

AMAC = $776,298(1+4.0)^{13}$

100

$776,298(1+0.0400)^{13}$

$776,298(1.0400)^{13}$

$776,298(1.6651)$

1,292,593.233

GWAGWALADA = $158,618(1+4.0)^{13}$

100

$158,618(1+0.0400)^{13}$

$158,618(1.0400)^{13}$

$158,618(1.6651) = 264,114.83$

Using the Yamane formula which is used when working with a finite population if the population size is known is given below:

N

$n =$

$(1 + Ne^2)$ where $n =$ Corrected sample size, $N =$ population size, $e =$ margin of error (MoE) = 0.05 based on the research condition.

$1,678,265.072 + 264,114.83$ Total = 1,942,379.902

1,942,379.902

$(1 + 1,942,379.902 \times 0.0252) =$

1,942,379,902

4,856.9498

= 399.9176. Therefore, the population of the study is = 399 A total of 390 questionnaires (sample size) were distributed in the study area.

Sampling for questionnaire Survey

To obtain accurate sample size for the households, there is no official documents were list of houses is available and due to lack of cadastral map of the study area, the researchers adopt clustered sampling technique. Cluster sampling is a technique used in survey research where the population is divided into clusters or groups, and the sample is selected randomly from the clusters. Cluster sampling is often used when it is more practical or cost-effective to sample groups of elements rather than individuals (Lohr, 2019). The researcher deliberately selects the sample from the population on the basis of clusters for the research purpose. It ensures that all the houses in the cluster were all selected for sampling that is to say all the households in the selected wards in Gwagwalada and AMAC were selected. The researcher administered three hundred and ninety (390) copies of questionnaire were distributed to the respondents, three hundred and eleven (311) copies of questionnaire were administered to the eleven (11) wards, each ward with twenty-eight

questionnaire administered. Six wards were selected from AMAC these include Garki, Wuse, Gwarinpa, Karshi, Karu and Nyanya. While the remaining five wards were selected from Gwagwalada Area Council which include Gwagwalada centre, Kutunku, Dobi, Tungan-maje and Gwako. Twenty one (21) copies of questionnaire were administered to the officials of AEPB, while fifty eight (58) copies were administered to the cleaning contractors who have registered with AEPB making the total of (390) respondents.

Content Validation and Reliability

The instrument was validated by experts in the Department of Geography and Planning, University of Jos, Nigeria. This is because of the conviction of the researcher that academics from the rank of a senior lecturer and above have large wealth of experience that could be useful in streamlining the research instrument, in order to provide feedback on the effectiveness of each question in measuring construct. The validators look at the instrument in order to ascertain whether it met the requirement for internal validity. Their inputs were incorporated into the final draft of the document. The instrument was therefore, considered as valid for carrying out the study since it satisfies the criteria for internal validity.

To determine the reliability of the instrument in measuring consistently what it is supposed to measure, the instrument was trial- tested in Jos North LGA of Plateau state. Fifty (50) copies of questionnaire were administered to households in the area. Cronbach alpha was used to determine the measure of internal consistency. The choice of Jos –North LGA became necessary because of the cosmopolitan nature of the Local government which is similar to the study area and it is outside the study area. Cronbach Alpha for internal consistency of items in the questionnaire was conducted using the reliability procedure in statistical package for social sciences (SPSS).

The value of a Cronbach's alpha ranges from 0-1 to 0.90 hence the closer to one the more acceptable and reliability of the data. The result indicated that the instrument had a good internal consistency based on Cronbach Alpha coefficient value reported at 0.835 for households. This implies that the questionnaire was reliable. This was in line with the conclusion of Benard (2011) that for reliability coefficient to be accepted, it should be close to +1 or as high as 0.70-0.80. In the same vein, Flick (2011) reported that an instrument that has reliability coefficient of 0.70 or above is reliable for research purposes.

Administration of Questionnaire

The data for the study was obtained through the administration of structured questionnaire. A reconnaissance survey of the study area was used to select two area councils (LGA's) for the study. The selection was based on the following criteria. One area council was chosen from the two Federal constituencies. (Federal constituency 1 includes Abuja Municipal Area Council (AMAC) and Bwari. The second comprises of Abaji, Gwagwalada, Kuje and Kwali area Councils). The area council that has the highest population in each of the federal constituencies in FCT was chosen because of the heterogeneity of the population so as to enable sample of the population without bias. Therefore, the following area councils were selected; AMAC, Gwagwalada. The questionnaire was designed in such a way that only short answers were required from the respondents or rather, to underline the appropriate options.

Research Questions

1. What is the socio-economic characteristics of respondents in the FCT?
2. What are the existing practices of environmental sanitation in the FCT Abuja?
3. Why is the level of awareness of the impacts of poor environmental sanitation by residents of FCT Abuja lacking?

Objectives of the study

1. To determine the socio-economic characteristics of respondents in the FCT
2. To examine the existing environmental sanitation practices in the FCT, Abuja.
3. To determine the level of awareness of respondents on the impacts of poor environmental sanitation hygiene.

Hypothesis

H0₁: There is no significant difference in the views of male and female respondents regarding the existing environmental sanitation practices in FCT-Abuja.

H0₂: There is no significant difference in the level of resident's awareness on the impact of poor environmental sanitation hygiene in FCT.

2. RESULTS

Socio-economic characteristics of Households

Education is deemed as one of the major factor affecting the knowledge awareness of environmental sanitation in anywhere around the world. Table 1 show that 32% of the respondents had primary Education, 195 of the respondents in the study had secondary education representing 50%, while the lowest are those with tertiary education which represent 18% responses gotten from the questionnaire administration. The result shows the in-depth of the respondents' awareness about environmental sanitation in their various areas. From the result 45% of the respondent were Christians, while 37% practice the Islamic faith, 17% practice the traditional religion while 1% practiced the other faith. It could be established that Christianity and Islam constitutes about well over 3 three fifth of the respondent faith, while the traditional religion constitute slightly one fifth of the respondent faith. This shows that Christianity and Islam are the dominant religion of respondents in the study.

In analyzing the occupation of respondent certain correlation were discovered in the course of the study. The occupation of respondents goes a long way to determine the kind of environment they live in while their environments determine the kind of house sanitation pattern they carry out in their environment. 32% occupations are civil servant, while 13% are contractors, 40% of the respondents are traders, while 15% are unemployed. This shows that one fifth of the respondent had one thing or the other to do as civil servant, while two-fifth of the respondents was traders, representing the largest group on the occupation of the respondents. Average monthly income of respondent or even an individual can go a long way to determine the type and pattern of house that an individual could live in, therefore determining sanitation practice of such an individual. From the data analyzed in table 3 show that 51% earns less than N20,000, while 33% earns between N 21,000- N 30,000, 12% of the respondent earns between N 31,000-N 40,000 3% earns between N 41,000- N 50,000 while a minute 1% earns above N 50,000 plus. This income statistics could spell out the living conditions which show the living standard of the respondent in the study by default their housing condition which could tell a lot about the level of environmental sanitation in their environment.

Respondent knowledge on the number of years they have lived in the area was also analyzed from the study the number were structure from less than 5years upward. From the result displayed on table 3 almost two fifth of the respondent had been living in the area for the less than five years, while over two fifth of the respondent have been living in their areas between 5- 10 years representing 45% of the respondents. Those living in their areas between 10-15 years represent less than one fifth of the respondent representing 11% while those who have been living in their area between 15-20 years were about 7%. Duration of time an individual lived in their respective area could play a large role in the knowledge of their awareness on the existing pattern of Environmental sanitation in their respective areas.

Table 1 Educational Attainment, Religion, Occupation Distribution, Average monthly income, and Knowledge of living in an area of the Respondents

Educational Attainment	Frequency	Percentage (%)
Primary	125	32%
Secondary	195	50%
Tertiary	70	18%
Total	390	100
Religion Distribution		
Christianity	176	45%
Islam	144	37%
Traditional	66	17%
Others	4	1%
Total	390	100
Occupation		
Civil Servant	125	32%
Contractors	50	13%
Traders	156	40%
Unemployed	59	15%
Total	390	100
Average Monthly Income		
₦20,000	199	51%
₦ 21, 000 - 30,000	129	33%
₦ 31,000 – 40,000	47	12%
₦ 41,000 – 50,000	12	3%
>₦ 50,000	3	1%
Total	390	100
Knowledge of Living in an Area		
	Frequency	Percentage
Less than 5 years	145	37%
5-10years	175	45%
10-15 years	43	11%
15-20years	27	7%
Total	390	100

Environmental Sanitation Practices in FCT

Figure 4 show the respondent opinion on whether there is in- house water source they currently make used. Availability of in-house water source is one of the essential ingredients to effective sanitation practice especially as it relates to liquid waste management. 44% of the respondent says they have no in-house water source in their respective residence while 66% say they have in-house

source of water in their residence. The role that water plays in the domestic day to day running of the house cannot be over emphasize which could range from cleaning to washing, drinking etc. The result in Figure 4 is in consonance with Dongo (2010) which stated that, access to qualitative good drinking water, adequate sanitation facilities services, satisfactory hygiene practices significantly contribute to reducing the rate of morbidity mortality among populations”.

Table 2 show types of Waste Storage in Household and Method of Waste Disposal Container without Lid 21% Container with lid 34% Polythene bag 25% others 20% while method of waste disposal show House to House Collection 21%, burning Incineration 23%, Uncompleted building 6%, In open space 29%, In a pit for compost 6% and Communal waste disposal 15%.

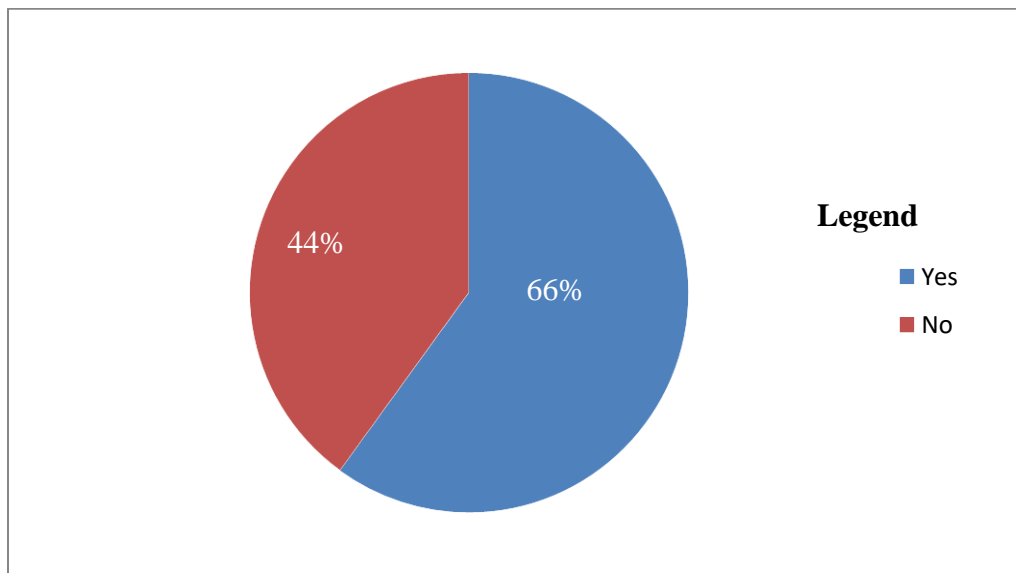


Figure 4: Sources of water in the house

Table 2. Type of Waste Storage in Household and Method of Waste Disposal

Type of Storage in Household	Frequency	Percentage (%)
Container without Lid	66	21%
Container with lid	106	34%
Polythene bag	76	25%
Others	63	20%
Total	311	100
Method of Waste Disposal		
House to House Collection	67	21%
Burning Incineration	71	23%
Uncompleted building	19	6%
In open space	88	29%
In a pit for compost	19	6%
Communal waste disposal	47	15%
Total	311	100

Awareness of Residents on the Impact of Poor Environmental Sanitation Hygiene

Figure 5 reveals that most of the respondents are aware of environmental sanitation with 67% of the respondent ticking Yes which constitutes almost four fifth of the respondent. While on the other hand well over one fifth of the respondent ticked No representing 33%. One of the major discoveries made in the course of the study was that most of the people who ticked yes are within most developed part of the Municipal Area Council while those who ticked No are within the other areas such as Gwagwalada in the FCT.

Table 3 reveals the respondent opinion of the source of awareness. From the table above over two fifth of the respondent got their awareness from community based participations this particular result is in consonance with Daramola (2011) report which states that ‘the issues related to environmental sanitation is not only technical but more socio-economic. Therefore, the community participates in environmental sanitation by encouraging local participation. Community participation means call for people to participate in planning, implementing managing their local environment. Those who got their awareness through monthly sanitation were 23% representing over one fifth of the total respondent those from Environmental Education were 27% while other were 12%

The purpose of sanitation could range from healthy environment but not limited provision of portable water. Respondent opinion were sampled on the purpose of environmental sanitation over one fifth of the respondent believed it purpose is to protect the human body from illness while over one fifth believed that it is to ensure healthy environment. 29% of the respondent believed

that it is to promote Healthy sanitation behavior; less than one fifth of the respondents believe that its purpose is for the proper disposal of waste. 11% of the respondent believes that the purpose is to promote healthy environmental behaviour.

Table 4 reveals the respondent opinion on the environmental condition of their Neighborhood. Two fifth of the respondent are of the opinion that the condition of their neighborhood is fair with 32% while less than two fifth rated their neighborhood condition as bad. Over one fifth rated their neighborhood as good while 22% of the respondent rated their conditions very bad. Figure 6 reveals respondents awareness on environmental sanitation in FCT. 67% of the respondents say yes they are aware while 33% of the respondents say they are not aware of the environmental sanitation practice in the FCT.

Table 5 indicates the chi-square calculated value of 294.1 is greater than the critical value of 0.13 with 390 as the degree of freedom, at 0.05 level of significance. The null hypothesis is rejected and the alternative hypothesis accepted. It can be deduced that, the opinion on the level of awareness on environmental sanitation practices and the knowledge of living in the area by respondents were retained. Therefore, there is no significant difference between the level of awareness on environmental sanitation practices and knowledge of living in an area by respondents on the impact of poor environmental sanitation hygiene in FCT. Table 6 show chi-square calculated value of 841.13 is greater than the critical value of 0.46 with 390 as the degree of freedom, at 0.05 level of significance. The null hypothesis is therefore rejected and alternative hypothesis accepted. This means that, the opinion of the public and private sector by respondents is retained. Therefore, there is no significant difference between respondents who are employed in the public and private sector on the level of compliance with the existing environmental sanitation legislation in the FCT. Opinion on suggestions were given by the cleaning contractors on suggested practices that will improve environmental sanitation in the FCT

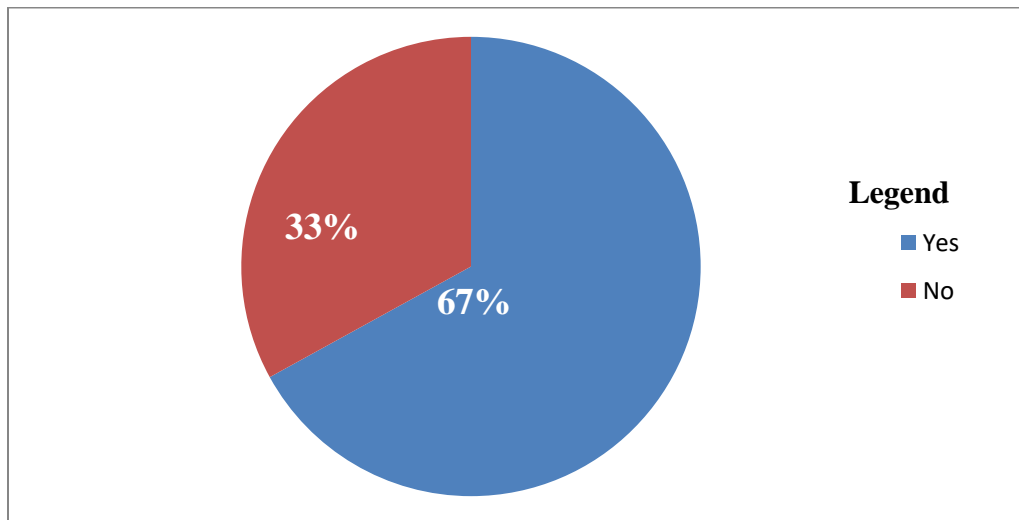


Figure 5: Awareness on Environmental Sanitation by respondents

Table 3 Respondents Opinion on Source of Awareness and Purpose of Environmental Sanitation

Source of Awareness	Frequency	Percentage (%)
Monthly Sanitation	70	23%
Environmental Education	84	27%
Community Participation	118	38%
Others	39	12%
Total	311	100
Purpose of Environmental Sanitation		
Ensure healthy environment	90	29%
To protect human bodies from illness	93	30%
To promote healthy environmental sanitation behavior.	35	11%
Proper disposal of solid waste	67	22%
Provision of portable water for domestic purpose	23	7%
Others	3	1%
Total	311	100

Table 4. Environmental Condition of their Neighborhood

Environmental Condition of their Neighborhood	Frequency	Percentage (%)
Very Good	27	8%
Good	60	19%
Fair	99	32%
Bad	59	19%
Very Bad	66	22%
Total	311	100

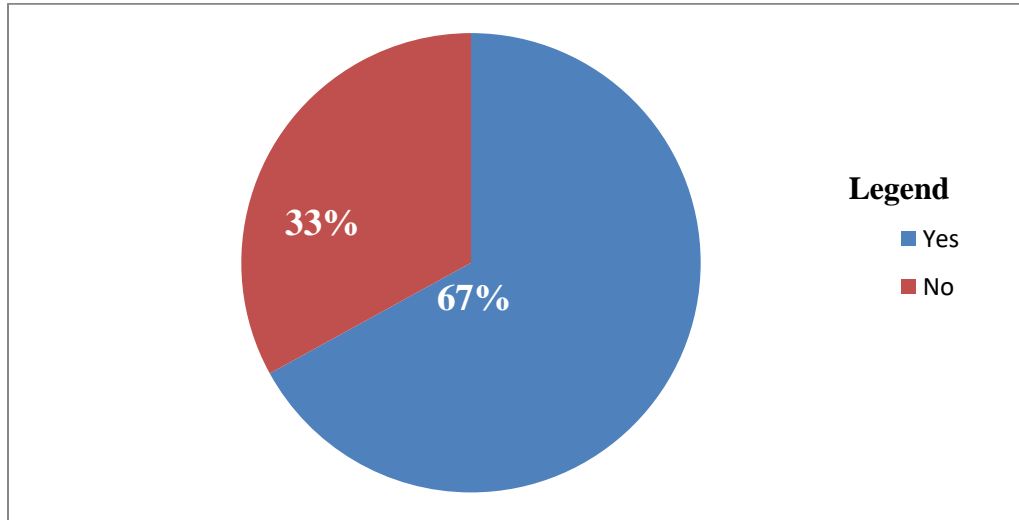


Figure 6: Awareness on Environmental Sanitation by respondents

Table 5 Chi-square Test of Environmental Sanitation Awareness (ESA) and Knowledge of living in the area by Respondents on the Impact of Poor Environmental Sanitation Hygiene in FCT-Abuja.

Responses	N	Df	χ^2_{cal}	$\chi^2_{t-crit.}$	Sig.	Remark
ESA	881	390	2941.6	0.13	0.05	H ₁
Knowledge of living the Area	522					Accepted

Table 6 Chi-square Test of Employed in the Public and Private Sector by Respondents on the Impact Poor Environmental Sanitation Hygiene in FCT-Abuja

Responses	N	Df	χ^2_{cal}	$\chi^2_{t-crit.}$	Sig.	Remark
Employee in Public Sector	282	390	841.13	0.46	0.05	H ₁
Employee in Private Sector	108					Accepted

3. DISCUSSION

Socio-economic characteristics

Education is regarded as one of the major contributing factor affecting knowledge and awareness of environmental sanitation in anywhere around the world. 68% of the respondents had formal education. The result show the in-depth knowledge of respondent’s awareness about environmental sanitation practices in the study area. This study is in agreement with Audu (2013) who found out that NCE/B.Ed holders possessed correct level of knowledge of the impact of improper waste management than TCII/SSCE holders. This finding is not surprising because it is expected that level of education should have influence on knowledge of the impact of improper

waste management. This finding corroborates that of Samuel (2021) who found that primary six school pupils possessed higher knowledge of refuse and sewage disposal than the pupils in the lower classes.

Most of the respondents in the higher primary school level according to the study of Samuel demonstrated higher level of knowledge that pests and vectors can breed diseases when there is stagnant water in the environment; drainage blockage, inappropriate refuse disposal and lack of personal hygiene than the pupils at the lower class levels. Furthermore, the study revealed that most of the pupils in primary six knew the pests and vectors which affect health than the pupils in the lower classes. It is established that Christianity and Islam constitute about well over three fifth of the respondents faith. This show that Christianity and Islam are the predominant religion of respondents in the study. In analyzing the occupation of respondent certain correlation were discovered in the course of the study.

The occupation of respondents goes a long way to determine the kind of environment they live in while their environments determine the kind of house sanitation pattern they carry out in their environment. 32% occupations are civil servant, while 13% are contractors, 40% of the respondents are traders, while 15% are unemployed. This shows that one fifth of the respondent had one thing or the other to do as civil servant, while two-fifth of the respondents was traders, representing the largest group on the occupation of the respondents.

Average monthly income of respondent or even an individual can go a long way to determine the type and pattern of house that an individual could live in, therefore determining sanitation practice of such an individual. From the data analyzed in table 3 it show that 51% earns less than N20,000, while 33% earns between N 21,000- N 30,000, 12% of the respondent earns between N 31,000-N 40,000 3% earns between N 41,000- N 50,000 while a minute 1% earns above N 50,000 plus. This income statistics could spell out the living conditions which show the living standard of the respondent in the study by default their housing condition which could tell a lot about the level of environmental sanitation in their environment.

Knowledge of living in a particular area can indeed influence an individual's level of awareness regarding environmental sanitation needs. The familiarity and experiences of residents in an area can shape their understanding and concerns about environmental cleanliness and practices. Daramola (2012) stated that people who have lived in an area for a long time are likely to be more aware of the specific environmental challenges faced by that community. For example, they might understand the impact of industrial pollution, inadequate waste management, or lack of clean water sources on their health and well-being. Similarly the study found that respondents who have been living in the study areas between 5-10 years represent 45% which means large number of people in the study area lack adequate knowledge of awareness of the existing pattern of environmental sanitation in their respective areas.

The large percentage of female respondents is typical of cleaning population in the study area as in many parts of Africa. This findings is consistent with that of several studies including Chukwumba, Anthony and Ugochukwu (2017) and Samuel (2022) who found that environmental sanitation activities especially home care cleaning is more dominated by women. Although men participatete more in waste collection and disposal. The reasons why women participate more in environmental sanitation practices is probably due cultural beliefs and norms in Africa were women are regarded as home keeps while men participate more in farming activities. The findings is also supported by the fact that majority of respondents (38%) with age range between 21-30 years is a relatively youthful population. Though Mwiinga (2014) discussed that formal education

is essential in reducing the transmission of diseases as it aids in enhancing sanitation and hygiene and combating the indiscriminate disposal of waste.

The number of persons in each household can determine the level of environmental sanitation practices in an area or the household waste and other material could be easily managed with small household but this cannot be said to be same for household with large population as there is much waste generated and little could be done to manage the waste generated and the level of compliance with sanitation practices. Household with 1 – 2 person had 8% while household with 3 – 4 persons had 35% which shows that most of the respondents within these household are likely married. Which also reveal this household numbers possess over one fifth of the number of respondents. Same could be said for household with 5 – 6 persons had 24% while household with 7 – 8 persons had 27% this kind of household may likely have relatives and acquaintances who are either on visit or have come to stay permanently with the respondents, meanwhile household with 9 – 10 persons had 6%.

Environmental Sanitation Practices in FCT

In-house water is integral to maintaining environmental sanitation practices and ensuring the well-being of communities. Adequate access to clean and safe water within households contributes to personal hygiene, waste management, disease prevention, and overall environmental cleanliness. This is in consonance with Dongo (2010) which stated that, access to qualitative good drinking water, adequate sanitation facilities services, satisfactory hygiene practices significantly contribute to reducing the rate of morbidity and mortality among population.

In the study area 18% of the respondents lack toilets provision in households these can have significant negative effects on environmental sanitation practices. World Health Organisation report (2019) ranked Nigeria 2nd in open defecation while ranking India first. This implies that most people in country do not have good sanitary and toilet facilities system at home therefore result to open defecation. The study found that over three fifth of the respondents have toilet facilities in their houses in FCT.39% of the respondents have the ventilated improve pit (VIP) this kind of toilet require only minimal amount of water to flush, it is always sighted away from the main building. 32% claim to have flush toilet which is otherwise known as the water closet. This particular kind of toilet would always demand water for it smooth operations. This findings is in agreement with a study that was conducted by Sadiq etal (2018) on environmental sanitation practices in Kuchigworo and Garamajiji along airport road, Abuja. The study reveals that 74 (31.7%) respondent had access to flush toilets, 127 (54.6%) make use of pit latrine. 62.7% of the respondents claimed that they sometimes covered their toilets, while 25.7% never covered their toilets. In addition, 13.7% washed toilets daily while 55.8% washed their toilet on alternate days with the use of Izal (41.6%) and Dettol (37.8%).

Similarly a study that was conducted in.Doba and Nayagenia, Northeastern Ghana by Samuel etal (2022) showed that sanitation in both areas was nearly poor as 83% of the households lacked toilet facilities. Though this was higher than the findings of Osumanu et al. (2019) in the Wa Municipality of Ghana where about 50% of the households lacked toilet facilities, it was similar to the claims of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2021) which indicates that 85% of Ghanaians lacked access to improved sanitation. From this, it was identified that amongst the 83% of households that lacked toilet families, 51% were male-headed whereas 32% were female-headed. These findings relate to the 2010 population and housing census which revealed that only 10.2% of the households in the KNMA had access to

improved toilet facilities (GSS, 2014). The rest practiced open defecation (83.7%) or used other unimproved toilet facilities (6.1%). The lack of toilet facilities in the area corroborates with UNICEF which states that as of 2015, only one rural household out of ten used improved household toilets while three in every ten of them practiced open defecation and not a single district in Ghana has achieved an open defecation-free status. This could be attributed largely to the lack of a clear urban basic sanitation strategy and plan in Ghana.

Awareness of residents on the Impact of Poor Environmental Sanitation Hygiene

The study found out that 67% of the respondents say they are aware of the impact of poor environmental sanitation hygiene in the study area. 33% of them say they are not aware of the impact of the poor sanitation hygiene. Most of the people who tick yes are within the developed part of Abuja while those who say no are within the satellite towns of the FCT such as Gwagwalada. This result further agreed with Daramola (2011) which states that However, the issues related to environmental sanitation is not only technical but more of awareness. The place of awareness is one thing but also the source of the awareness on how respondents got the information is also important. Similar to studies by Sridhar et al (2020) on Personal and Environmental Hygiene. Respondents used soap for washing clothes (77.5%), taking bath (85.4%), bathing children (49.4%), and washing hands after defecation (31.3%). In the study, adequate knowledge of personal hygiene led many to the good practices of using water and soap for cleaning hands after defecation, which is essential in preventing diseases.

Another studies on Sanitation and hygiene practices was conducted by Sesay et al (2019) reveal that majority of the households wash hands with water and soap and almost one-third wash their hands with water only. In addition, the majority of the households reported to wash hands after defecation and before eating. These findings are different from what were found in India where it was found that less than two-thirds of the household members of the study used water and soap and over 90% of them cleaned their hands only with water before and after meals (Reddy, 2019). This high prevalence of hand washing in their survey may be attributed to the interventions that are being implemented by countries to meet the SDGs targets. The finding of this study was higher than what was observed in a study in Ethiopia where 9% reported washing their hands after defecation (Belachew, 2018).

Environmental sanitation law has been in FCT since inception. In order to examine these, respondents were asked on their awareness of environmental sanitation laws in figure 24 Almost three fifth of the respondent representing 53% are aware that there is an existing environmental sanitation laws while 47% representing above two fifth are not aware that there is an existing environmental sanitation laws in the study area. This close proximal result is reflected in Daramola (2011) report which state that “ In Nigeria, the use of legislation has been dominant in securing the participation of all citizens despite various provisions of the laws there is still low level of awareness of people concerning environmental sanitation practice. Like the monthly environmental sanitation practice in FCT were majority of citizens do not participate during the hours of the sanitation” but Mensah et al (2020) differ in their on opinion with this study that regulating sanitation behaviour entails the imposition of restrictions by an authority on the execution of an action in relation to sanitation management. This may include the provision of laws and by-laws to regulate sanitation behaviour, an inspection system for checking compliance, sanctioning mechanisms for failure to comply with the regulation and a system for conflict resolution.

Majority of the respondents (38%) in this study are of opinion that environmental sanitation hygiene can be improved upon with the provision of basic amenities such as pipe-borne water, toilet facilities. 28% are of the opinion that Environmental Education (EE) will bring the needed improvement. 19% say enforcement of environmental law will help in achieving improvement of environmental sanitation. As 15% believe that community-based approach will be better. Mensah et al (2022) corroborated with this findings in their study on Public compliance with environmental sanitation regulations in Ghana stated that, compliance with the regulations could be a tool for improved sanitation that would bring about improved public and environmental health. One respondent argued that: Ghana has all the policies and by-laws for ES management but they are not complied with because of the weak enforcement of the regulations. The surest way to ensure public compliance with the regulations is to strictly enforce the regulations.

One of the major factors aiding the proper sanitation practice is the residence awareness. Awareness creates the platform on which any model of sanitation can thrive. Hypothesis two states that there is no significant differences on the level of environmental sanitation awareness and knowledge of living in the area by respondents on the impact of poor environmental sanitation hygiene in FCT. The chi-square calculated value of 294.1 is greater than the critical value of 0.13 with 390 Df at 0.05 level of significance, the null hypothesis is rejected which connotes a very weak relationship between awareness on environmental sanitation practices and knowledge of living in the area. This also means that when citizens are aware of the dangers inherent in certain dangerous environmental practices then they would desist from such also there would be adequate planning modeling of cities on other areas to accommodate sound environmental sanitation practice.

This assertion is in consonance with other studies which state that there are also non-recursive direct relationships between access to environmental sanitation services, environmental sanitation awareness compliance with environmental sanitation laws. Thus, there is a combination of direct indirect relationships between socioeconomic demographic characteristics, residential characteristics, access to environmental sanitation services sanitation awareness compliance with environmental sanitation laws. Ultimately, then, the likelihood of engaging in environmental sanitation practices (the dependent variable) is determined by socioeconomic demographic characteristics, residential characteristics, access to environmental sanitation services, environmental sanitation awareness compliance with environmental sanitation laws (independent variables).

4. CONCLUSION/RECOMMENDATION

Adequate access to clean and safe water within households contributes to personal hygiene, waste management, disease prevention, and overall environmental cleanliness. This is proper in improving environmental sanitation practices in the FCT. Adequate knowledge of personal hygiene led many to the good practices of using water and soap for cleaning hands after defecation, which is essential in preventing diseases. Which mean proper awareness will go a long way to reduce or eradicate environmental sanitation related diseases in the FCT. Therefore, the paper recommend the following measures to ensure proper environmental sanitation practices in the FCT:

- a. Education is seen as a human right of fundamental significance to promoting decent work for humane living condition. This study recommends that policies that would promote sound environmental education should be put in place in order to educate the populace and enlighten them on the importance of environmental sanitation in the FCT.

- If environmental education is given a primordial importance from the beginning most of the sanitation problems would have been solved in the first place.
- b. There is a need for government to compel the Abuja Environmental Protection Board to integrate and formulate community based policies which are realistic and intadem with new methodologies used in environmental sanitation in order to facilitate community participation in environmental sanitation. This policy formulation would include ward, village, community leaders, youth group knowing an appreciable number of the target population are youths which will help in the process of implementation.
 - c. There is need to legislate some of the environmental laws on sanitation in the FCT. Nigeria as a whole are not in cognate realities with the new spatial realities on ground therefore the need for new legislation for environmental sanitation. These laws which are made must be enforced properly within the ambit of the law as stipulated to avoid unnecessary witch hunt using same laws.
 - d. Government must has matter of priorities provide certain basic amenities such as water as some residents within the FCT have inadequate portable water for domestic uses which including washing after toilet flushing other toilet related uses. This very necessary if the campaign against open defecation by the government would be effective. Added to this road network access route leading to dumpsite must be repaired or new one constructed to reduce the duress place upon cleaning contractors in waste collection disposal. Also waste collection point must be provided with large waste receptacles all across the FCT to ensure there isn't indiscriminate waste disposal by residents.

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