HOUSEHOLD ENVIRONMENTAL SANITATION PRACTICES IN KETU, KOSOFE LOCAL GOVERNMENT AREA, LAGOS, NIGERIA

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ABSTRACT

This study investigated environmental sanitation practices amongst residents of Ketu in Lagos Nigeria. Cross sectional research design was adopted, while multistage sampling was used to select 380 out of 21,569 respondents. Systematic sampling was adopted to administer the questionnaire. The study revealed that majority 52.4% of the households across the zones have lavatories located outside their houses, 87.4% and 90.8% sourced drinking and water for sanitation purposes from hand-dug wells respectively, while only 30.3% had ventilated improved pit latrine, majority 72.4% had open drainage systems around their houses. For sanitation practices, more than half 50.5% of the respondents across the zones do not wash their hands after visiting the toilets, and that open defecation was rife around 76.3% of the respondents' houses. Majority 81.1% dump refuse indiscriminately on communal dump-ground, while 73.5% engaged in monthly indoor general cleaning. It was suggested that the local government through community development associations should not only pursue environmental sanitation reorientation until it becomes a way of life among the residents, but also, embark on environmental sanitation assessment, and subsequently, reward the cleanest street, district, residential premises within the local government.

Key words: *household, environmental sanitation, Ketu*

INTRODUCTION

Globally, access to household sanitation facilities is considered a fundamental need and a human right; it is vital for the dignity and health of all people (WHO, 2000). The importance of environmental sanitation to human life has made it a global concern (Abiko and Almeida, 2003). However, WHO (2000) asserts that significant portion of the world population remains without access to improved sanitation, especially the voiceless. Cities in developing countries are already confronted with inadequate environmental sanitation facilities (Khatri and Vairavamoorthy, 2007) and this presents the most serious environment-related health risks (Cities Alliance, 2007). Musleh and Sudhir (2005) observed that the provision of environmental sanitation facilities and services are inadequate in developing countries, most especially at the household level.

Roland *et al* (2004) added that a significant number of households in developing countries lack access to adequate water supply, efficient solid waste management, adequate toilets among other environmental sanitation services. Environmental sanitation has remained an intractable problem in Nigeria with serious public health consequences. This is due to poor sanitation practice as a result of improper refuse disposal, inadequate water supply and gross inadequacy of sanitary facilities especially at household level (Federal Ministry of Environment, 2005). Daramola (2012) affirmed that in Nigeria, rapid population growth has not been accompanied by a corresponding increase in the delivery of essential urban services such as water supply and sewerage and solid waste facilities capable of enhancing environmental sanitation behaviour in Nigerian cities. The immediate problems result in a string of further consequences, which adversely affect the quality of life of the people. Despite huge amount of money being spent on

health care delivery by various level of governments in the country, studies have shown that the knowledge, behaviour and practices still remain as major challenges facing our cities at large (Adewunmi, 2004; Olupohunda, 2011). A major environmental sanitation policy in Nigeria that cross across all the states in Nigeria was the War against indiscipline (WAI) during the Buhari/Idiagbon (1983-1985) regime. Since the demise of the Second Republic in 1983, environmental sanitation has become a prominent issue in Nigeria. Several countless edits have been promulgated by state governments (Stock, 2010). Many of these edits have at least temporarily had considerably impacted on the lives of citizens in the major cities (Olowoporuku, 2014).

There is an increasing national consciousness on the need for judicious management of the Nigeria environment in a sustainable manner (Daramola, 2012). This prompted many researchers to carry out studies on environmental sanitation (Afon and Faniran, 2013, Muhammed, 2011, Felix, 2010, Dwivedi and Sharma, 2007, Usman, 2011, Acheampong, 2010). Muhammed (2011) considered the environmental sanitation of a residential neighbourhood of a city in Ethiopia. He identified various factors as causes of unhealthy environment. Among these are poor infrastructural, disposal facilities and services. There was however less consideration on the knowledge and practices of the households in relation to environmental sanitation and hygiene conditions and only a neighbourhood was considered and not the different residential zones in Ethiopia. Therefore, residents' environmental attitudes and behavior, and their consequences are necessary for investigations in a developing country like Nigeria. This study assessed the household environmental sanitation practices in Kosofe Local Government Area (LGA), Lagos, Nigeria.

Sanitation and huma well-being

Sanitation is a basic necessity having a direct impact on health and requires safe disposal of human faeces and urine (WHO and UNICEF, 2012). Despite this globally, 2 billion people lack adequate sanitation, and 673 million still practice open defecation (WHO, 2017). Thus, from the estimates, it is clear that worldwide, the situation with regard to water and sanitation practices is poor. Globally, a total of 297,000 WASH-attributable diarrhoea deaths occurs per year among children under 5 years. Nearly 90% of these cases occur in South Asia and Sub-Saharan Africa (Waage *et al*., 2010; Mshida *et al*., 2018). Furthermore, two billion people worldwide are infected with intestinal parasites, with the highest burden of this disease among children in resource-poor settings (WHO, 2002) due to inadequate access to safe drinking water, insufficient quantity of water for personal hygiene, lack of removal and treatment of excreta, lack of removal of solid waste (particularly the organic fraction, which attracts vermin) and poor access and use of sanitation facilities (Babalobi, 2013). Thereby, encouraging open defecation, open defecation results in a faecal load of 2,00,000 metric tons per day (Rajgire, 2013). This, in turn, gets mixed with soil and water bodies, contaminating these with pathogens (Rajgire, 2013; Dzwairo et al., 2006). Apart from open defecation, septic tanks are another important source of water contamination, specifically when the distance between the septic tank and drinking water source is not properly maintained (Dzwairo *et al*., 2006).

Studies have shown that infections with intestinal parasites among children are associated with stunting, and physical weakness (Gelaw et al., 2013; Freeman et al., 2015). These parasites interfere with the digestive process by competing with the host for nutrients and inhibiting the absorption of nutrients, leading to compromised immunity (Berkman, Lescano, Gilman, Lopez,

and Black, 2002; Black, Morris, and Bryce, 2003). It is estimated that up to 45% of global malnutrition-related child deaths could be prevented by improving environmental sanitation practices (Mshida, Kassim, Mpolya, and Kimanya, 2018; Curtis and Cairncross, 2003).

Dube (2006) afirmed that poor environmental sanitation practices remains a high-risk behaviour increasingly responsible for elevated water- and sanitation-related disease levels in Zimbabwe, including Nigeria (Babalobi, 2013). In response, Nigeria has developed various policies at the federal level to address sanitation practices, largely driven by the international discourses (Amakom, 2009). Inadequate understanding of the context, poor coordination among various sectors and inadequate financial strategies have meant that there has been no significant increase in proper sanitation practices. Any effort to develop adequate measures requires understanding existing sanitation practices (Babalobi, 2013). There are a number of projects funded by international agencies and implemented by the Federal Ministry of Agriculture and Water Resources. Between 2005 and 2007 alone, about €45 million (USD 58.95 million) was invested by the European Commission and, through WaterAid, about €2.2 million (USD 2.88 million) directly for WASH projects in donor-specified areas, but this has not made a significant impact. In spite of these investments, the country's maternal mortality rate is estimated to be the highest in the world, with an estimated 800 deaths per 100,000 live births in 2007. The infant mortality rate and the under-five mortality rate are about double in rural areas compared to urban settings (Babalobi, 2013).

Provision of affordable and conveniently sanitation facilities at the household level have been acknowledged to be critical to public health and to be a driver of socio-economic development (Weitz and Franceys, 2002). Improved water supplies, management of human and domestic wastes have impacts in various areas of life, from health to time saving to social status. This is because providing adequate sanitation facilities and adopting better hygienic practices interrupt the transmission of most faecal-oral diseases (Vaz and Jha, 2001). Environmental sanitation practice has become a major development challenge in towns and this trend has not excluded any residential zone in a city, affecting the core, transition and sub urban area.

Household-Centered Environmental Sanitation (HCES) Model

The Water Supply and Sanitation Collaborative Council (WSSCC) created an Environmental Sanitation Working Group (ESWG) in 1999. The ESWG developed a model to address environmental sanitation services called the Household Centered Environmental Sanitation (HCES) model. The model proposed that:

- People and their quality of life should be at the center of any environmental sanitation system
- All environmental sanitation systems must be designed in such a way as to balance economic and environmental goods.
- Solutions of environmental sanitation problems should take place as close as possible to the place where they occur.
- Environmental sanitation systems should be 'circular' – designed in such a way as to minimize inputs and reduce outputs.

- Problems relating to environmental sanitation should be handled within an integrated framework and this framework should itself be part of a wider system of integrated water resources, waste management and food production.

The model uses 'zones' to remedy environmental sanitation problems in a particular area. The zones include the household, the neighbourhood, the community, a political subdivision such as a city ward (if appropriate), the city itself, and ultimately the wider environment (such as a river basin catchment or some other larger regional area) (Figure 2.1).

Problems relating to the management of environmental sanitation services; for example, sewage, solid waste or storm runoff, can then be addressed at the smallest appropriate zone (initially the household). Only if a problem cannot be solved in this smaller zone (or if it is more cost-effective to deal with it on a larger scale), and the larger zone agrees, is the problem 'exported' to the next largest zone. Even when it is agreed that the problems can be exported, the smaller zone has to negotiate with the larger zone and reach agreement on key parameters. Such parameters include; volume and strength of sewage, peak flow and flow duration of storm discharges, and the nature and number of solid wastes. Appropriate financial arrangements (such as discharge fees) may then have to be agreed between the zones. A significant benefit of adopting a zoned approach is the householders' opportunity to have a voice in the decision-making (and therefore complaint) processes of the practices of larger organisations (Eawag, 2005).

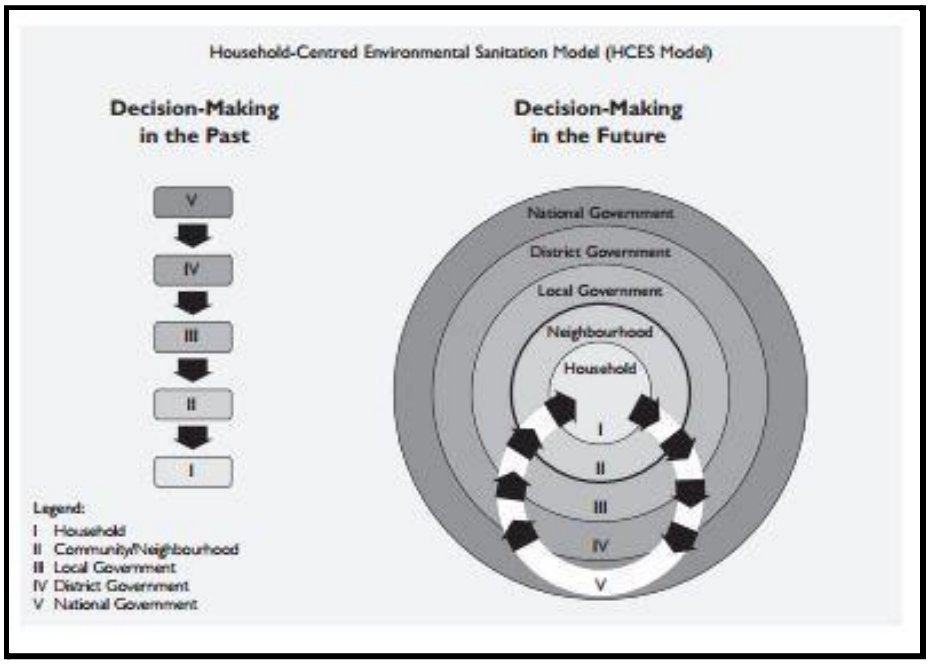

Figure 2.1: Household-Centered Environmental Sanitation (HCES) Model

Source: Eawag, 2005

The goal of applying the HCES model to urban environmental sanitation services (UESS) is to provide stakeholders at every level, but particularly at the household and neighbourhood level, with the opportunity to participate in the planning, implementation and operation of UESS. By doing so, it aims to create sustainable systems of UESS delivery that will help support healthy living (Eawag, 2005). However, a special challenge of this model is that it requires collaboration and coordination between multiple agencies which may have different capabilities and little commitment to working together.

MATERIALS AND METHODS

The study was carried out at Ketu community located in Kosofe LGA of Lagos State (Figure 1). Kosofe Local Government is situated in the northern region of Lagos State and share common boundaries with Ikorodu local government in the north-east, to Shomolu local government south and to Ikeja local government in the west. It extends approximately from Latitude 6^0 20' to 6^0 40'N and from Longitude 2^0 45' to 4^0 20'E. It has a total land mass of about 3,317square kilometers, about 787 km^2 or about 22% is water-creeks, lagoons and estuaries. Multi stage sampling technique was used in this study. Stage one involved the classification of communities within Ketu into core (31), transition (38), and periphery (42); out of which 10 per cent was randomly selected; three from core, four from transition, and four from periphery zones. A sample size of 1.76% of the sample frame of the estimated 21,569 residential buildings identified were selected, using a combination of Google Earth and ground-truthing techniques. A total of 380 questionnaires were systematically administered on household heads in the 11 selected communities (Table 1). Data collected were analyzed using chi-square at $p<0.05$.

Table 1: Selected communities, Sample Frame and Sample Size

Residential Zone	No of Communities	No of Selected Communities (10%)	Names of Selected Communities (10%)	No. of building in Selected communities	Sample size (1.76%)	Questionnaire Administered
Core	31	3	Adebare, Abudu, Irawo,	5,392	95	95
Transition	38	4	Ikosi-Ketu, Aiyedere-Ketu, Agility, Ajelogo	9,277	163	163
Periphery	43	4	Alapere, Maidan Mile 12, Agboyi, Ogudu	6,900	122	122
Total	**112**	**11**		**21,569**	**380**	**380**

Source: Researcher's construct (2022)

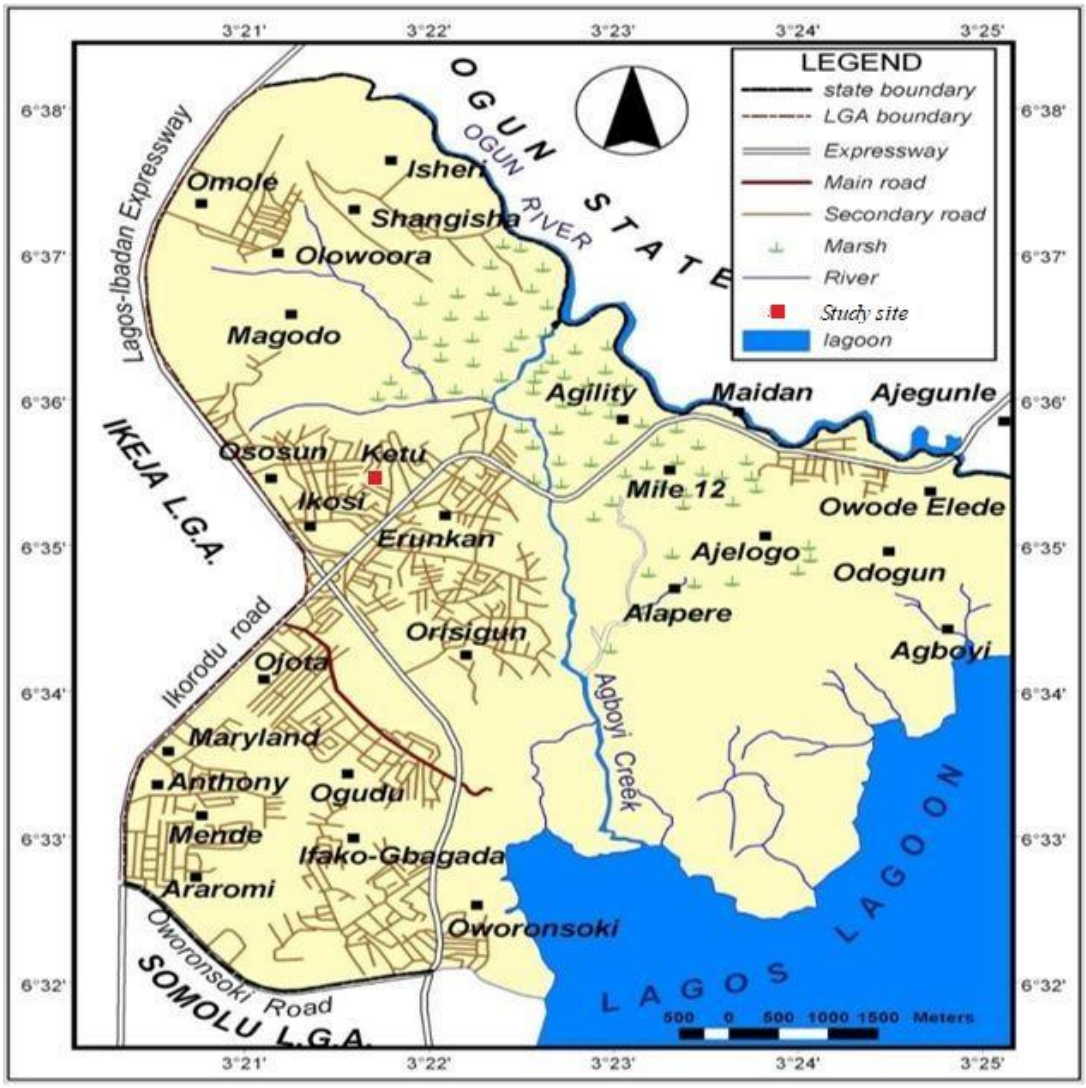

Figure 1: Ketu within the context of Kosofe LGA, Lagos Nigeria

FINDINGS AND DISCUSSIONS

Socio-economic characteristics of households

The analysis of the gender of households' heads revealed that the three residential zones were male dominated as presented in Table 2. Specifically, the results revealed that 90 (94.7%) of the household in the core area were male headed while 5 (5.3%) were female headed. While 149 (91.4%) of the household in the transition were male headed, 14 (8.6%) were female headed. In the periphery, 98 (80.3%) of the household were male headed while 24 (19.7%) where female headed. The distributions of the household heads in the study were similar to traditional patriarchal system in the Africa traditional settings. Respondents' age distribution is presented in Table 2. The results showed that 27.2% and 10.7% of the respondents from the transition and

core areas are in the age bracket 30 – 40 years. Among the respondents aged 41 – 50 years, 3.2 are from the core area, 39.5% are from the transition and 38.5% are the periphery. Also, 4.2%, 26.5% and 27.1% of the respondents from the core, transition and periphery areas are in the bracket 51 – 60 years. About 54.7% of the respondents in the age group 61 – 70 years are from the core area, 6.8% are from the transition and 22.1% are from the periphery area. The results further showed that 36.8% and 1.6% of the respondents from the core and periphery are in the bracket 71 – 80 years respectively. Among the respondents in the age group 81 years and above, 1.1% and 0.3% of them are from the core and periphery respectively. The overall mean age is 56 years.

The study revealed that households' size (Table 2) was slightly above one quarter in the core as 26.3% had between 1 – 5 household members, 68.4% had between 6 – 10 members and 5.3% had between 11 – 15 members. About 16% of the households in the transition had between 1 – 5 members, close to three quarter (74.8%) had between 6 – 10 members and just 9.2% had between 11 – 15 members. In the periphery, 39% of the households had between 1 – 5 members, more than half of the households had between 6 – 10 members and 4% had between 11 – 15 members. Different types of housing designs exist in the study area. The findings indicated that 95.8% of traditional compound buildings were located in the core while 2.1% of the housing designs were just Brazilian and Flat. In the Transition, 95.7% of the housing designs were Brazilian while the remaining 4.3% were Flat. About 0.8% of the housing designs in the periphery were traditional compound building, 34.4% were Brazilian and close to third (64.8%) were Flat. The distribution of building ownership is as presented in Table 2. Seven (72.6%) out of every ten buildings in the core area were inherited and 27.4% were tenement buildings. In the transition, 4.9% of the ownership were self-built, 85.9% tenement and 9.2% were inherited. More than two third (68%) of the building in the periphery area were owner occupier, 23% were tenement buildings and just 9% were inherited.

Furthermore, the educational status of respondents is presented in Table 2. In the core area, majority 94.7% of the respondents had no formal education, 4.2% attended primary school and just 1.1% had secondary school education. In the transitional area, 53.4% had no formal education, 4.9% had primary education, 23.9% had secondary education and 17.8% had tertiary education. However, just 3.3% of the respondents had no formal education, 6.6% had primary education, 45.9% had secondary education and 44.3% had tertiary education in the periphery. The distribution indicated that level of education increases as one move from core to periphery area. The analysis of the respondent's occupations revealed that 5.4% of those living in the core area were into trading, 92.5% work in the private firms, while 2.2% were into public sector. In the transitional area, 28.2% were into trading, 58.3% work in private firms, and 13.5% were in the employment of public sector. While 61.5% are into trading in the core area, 5.7% and 32.8% are in private and public sector respectively. Income wise, 79.6% of the respondents earned between N10,000 – N20,0000, 7.5% earned between N20,001 – N40,000 and 10.8% earned between N60,001 – N80,000 in the core area. In the transition zone, 56% of the respondents earned between N10,000 – N20,000, 37.1% earned between N20,001 – N40,000, 5.7% earned between N60,001 – N80,000. Meanwhile, in the periphery residential area, 6.7% earned between N10,000 – N20,000, 48.3% earned between N20,001 – N40,000, 35.8% earned

between N40,001 – N60,000, 8.3% earned between N60,001 – N80,000 and only 8.3% of the respondents earned above N80,001.

Table 2: Socio-economic characteristics of respondents

Gender	**Male headed**	**%**	**Female headed**	**%**	**Total**
Core	90	94.7	5	5.3	95
Transition	149	91.4	14	8.6	163
Periphery	98	80.3	24	19.7	122
N	337	88.7	43	11.3	380

Age	30-40		41-50		51-60		61-70		71-80		≥81		Total	
Core	-	-	3	3.2	4	4.2	52	54.7	35	36.8	1	1.1	95	26.1
Transition	40	27.2	58	39.5	39	26.5	10	6.8	-	-	-	-	147	40.4
Periphery	13	10.7	47	38.5	33	27.1	27	22.1	2	1.6	-	-	122	33.5

N	53	14.6	108	29.7	76	20.9	89	24.5	37	10.2	1	0.3	364	100
Min.	30	**Max**	95	Mean	56									

Household size	1-5	%	6-10	%	11-15	%	Total
Core	25	26.3	65	68.4	5	5.3	95
Transition	26	16.0	122	74.8	15	9.2	163
Periphery	48	39.0	69	57.0	5	4.0	122
N	99	26.1	256	67.4	25	6.5	380

Housing type	Traditional compound Building	%	Brazilian	%	Flat	%	Total
Core	91	95.8	2	2.1	2	2.1	96
Transition	-	-	156	95.7	7	4.3	163
Periphery	1	0.8	42	34.4	79	64.8	122
N	92	24.2	200	52.6	88	23.2	380

Educational qualification	No formal education	%	Primary education	%	Secondary	%	Tertiary education	%	Total
Core	90	94.7	4	4.2	1	1.1	-	-	95
Transition	87	53.4	8	4.9	39	23.9	29	17.8	163
Periphery	4	3.3	8	6.6	56	45.9	54	44.3	122
N	181	47.6	20	5.3	96	25.3	83	21.8	380

Occupation	Trading	%	Private sector employment	%	Public sector employment		Total
Core	5	5.4	86	92.5	2	2.2	93
Transition	46	28.2	95	58.3	22	13.5	163
Periphery	75	61.5	7	5.7	40	32.8	122
N	126	33.3	188	49.7	64	16.9	278

Income	10,000-20,000	%	20,001-40,000	%	40,001-60,000	%	60,001-80,000	%	Above 80,001	%	Total
Core	74	79.6	7	7.5	2	2.2	10	10.8	-	-	93
Transition	89	56.0	59	37.1	9	5.7	2	1.3	-	-	159
Periphery	8	6.7	58	48.3	43	35.8	10	8.3	1	0.8	120
Total	171	46.0	124	33.3	54	14.5	22	5.9	1	0.3	372

Sanitation facilities and practices

The study revealed the location of lavatory across the various residential zones as presented in Table 3. It showed that 2.1% of the lavatories were located within the building, 4.2% were located outside the building and lavatories were not available in majority of the buildings in the core. In the transitional area however, 3.7% of the building had lavatory within building, 96.3% had lavatory located outside the building. More than two third (67.2%) of the Lavatory in the periphery were located within the building, 31.1% were located outside the building and 1.6% had no lavatory in the building. Water is the core issue in sanitation; and the source determines whether it is suitable for drinking or otherwise, thus, the various sources of drinking water was captured, and presented in Table 2. In the core area, nine out of every ten respondents (94.7%) sourced their water from well while 5.3% of the respondents sourced their water from borehole. In the transition area, 91.4% of the respondents sourced their water from well while 8.6% get it from borehole. In the periphery, 76.2% sourced their water from well and 23.8% get their water from borehole. Similarly, the source of water for drinking is not different from that of sanitation practices.

Majority 96.8% of the respondents in the core areas obtained water for sanitation purposes from hand-dug well, while 3.2% got it from borehole. In the transition, 92.6% sourced their water from well and 7.4% from borehole. At the periphery, most 83.6% respondents have been using water obtained from hand-dug well, while 16.4% sourced sanitation water from borehole. The study revealed the types of toilets available in the residential zones. In the core area, 2.1% of the respondents had flush and pit latrine toilet each, and 95.8% and no toilet facility. About 4.3% of the respondents had flush toilet, 57.7% had ventilated improved toilet and 38% had pit latrine in the transition residential area. In the periphery, 71.3% had flush toilet, 17.2% had ventilated improved pit latrine, 9% had pit latrine and 2.5% had no toilet facility. For waste water management, 64.2% had no drainage channel, 4.2% had covered drainage and 31.6% had open drainage in the core area. In the transition zone, 1.2% had no drainage, 4.3% indicated covered drainage and 94.5% had open drainage. Similarly, 3.3% had no drainage, 22.1% and 74.6% indicated covered drainage and open drainage respectively in the periphery area.

Table 3: Sanitation facilities

Lavatory/Area	Within building	%	Outside building	%	Not available	%	Total
Core	2	2.1	4	4.2	89	93.7	95
Transition	6	3.7	157	96.3	-		163
Periphery	82	67.2	38	31.1	2	1.6	122
N	90	23.7	199	52.4	91	23.9	380

Source of drinking water	Well	%	Borehole	%	Total
Core	90	94.7	5	5.3	95
Transition	149	91.4	14	8.6	163
Periphery	93	76.2	29	23.8	122
Total	332	87.4	48	12.6	380

Source of sanitation water	Well	%	Borehole	%	Total
Core	92	96.8	3	3.2	95
Transition	151	92.6	12	7.4	163
Periphery	102	83.6	20	16.4	122
Total	345	90.8	35	9.2	380

Toilet types	Flush toilet	%	Ventilated improved pit latrine	%	Pit latrine	%	canal	%	Total
Core	2	2.1	-	-	2	2.1	91	95.8	95
Transition	7	4.3	94	57.7	62	38.0	-	-	163
Periphery	87	71.3	21	17.2	11	9.0	3	2.5	122
N	97	25.3	115	30.3	75	19.7	94	24.7	380

Drainage type	No drainage	%	Covered drainage	%	Open drainage	%	Total
Core	61	64.2	4	4.2	30	31.6	95
Transition	2	1.2	7	4.3	154	94.5	163
Periphery	4	3.3	27	22.1	91	74.6	122
N	67	17.6	38	10.0	275	72.4	380

Author's Field Survey, 2022

Sanitation practices of the respondents were also captured and presented in Table 4. The findings revealed that 96.8% of the respondents in the core area do not wash hands after using the toilet, 27.6% in the transitional area, and 45.1% at the periphery. Many of the respondents also practices open defecation. This was indicated by 92.6% of the respondents in the core

residential zone. Similarly, in the transitional area, 92.6% reported occurrence of open defecation, while 41.8% indicated that open defecation was a common occurrence in the periphery area. The reasons alluded to open defecation included: absence of toilet facility (98.9%) in the core, poor condition of toilet at the transition zone (97.4%), while 80.4% at the periphery also attributed it to lack of public toilets. Waste disposal Summary of waste disposal is as presented in Table 4.22. In the core area, 87.4% used communal dumps site, 1.1% used drainage channel/channel of stream, 2.1% used road side and 9.5% dump waste inside a dedicated pit. About 4.3% of the respondents from the transition zone use government agency, 92% of them used communal dump site, 1.2% used drainage channel, road side and pit respectively. In the periphery, 2.5% of the respondents used government agency, 10.7% used private collector, 81.1% used communal dump site, 0.8% dump in water drainage, 4.1% utilize road side and 0.8% used pit for waste disposal. The analysis of the regularity of indoor general cleaning at the core area revealed that 4.3% indicated weekly, 91.4% monthly, and 4.3% bi-monthly. In the transition, 93.9% of the respondents clean indoor monthly, only 4.9% clean on bi-monthly basis. In the periphery, 15.6% clean on weekly basis, 32.8% clean on monthly basis, 47.5% clean on bi-monthly and only 4.1% clean quarterly.

Table 4: Sanitation practices

Hand washing	**No, do not wash hands after using the toilet**	**%**	**Yes, wash hands after using the toilet**	**%**	**Total**
Core	92	96.8	3	3.2	95
Transition	45	27.6	118	72.4	163
Periphery	55	45.1	67	54.9	122
N	192	50.5	188	49.5	380

Open defecation	No occurrences of open defecation by children around house	%	Yes, there is open defecation by children around house	%	Total
Core	7	7.4	88	92.6	95
Transition	12	7.4	151	92.6	163
Periphery	71	58.2	51	41.8	122
N	90	23.7	290	76.3	380

Waste disposal methods	Government agency	%	Private collector	%	Communal dumps	%	Dump in water drainage/channel of stream	%	Road side/ road median	%	Pit	%	Total
Core	-	-	-	-	83	87.4	1	1.1	2	2.1	9	9.5	95
Transition	7	4.3	-	-	150	92.0	2	1.2	2	1.2	2	1.2	163
Periphery	3	2.5	13	10.7	99	81.1	1	0.8	5	4.1	1	0.8	122

Cleaning	Weekly	%	Monthly	%	Bi-monthly	%	Quarterly	%	Total
Core	4	4.3	85	91.4	4	4.3	-	-	93
Transition	-	-	153	93.9	8	4.9	2	1.2	163

Periphery	19	15.6	40	32.8	58	47.5	5	4.1	122
N	23	6.1	278	73.5	70	18.5	7	1.9	378

Author's Field Survey, 2022

The statement of no significant difference in household sanitation practices across residential zones was subjected to Chi-square analysis and the results presented in Table 5. The analysis revealed that for occurrences of open defecation in the residential zones, the chi square value of 118.414 at 2 df and $p < 0.05$. This indicates that there is no significant difference in household sanitation practices across residential zones in the study area. Also, washing hands after using toilet also revealed a chi square value of 117.223, 2 df and $p < 0.05$. Thus, there is no significant difference between household sanitation practices across the residential zones.

Table 5: Test of no significant difference in sanitation practices among households across the residential zones

Sanitation practices variables	Value	Df	P value	Remarks
Occurrence of open defecation	118.414	2	.000	Sig.
Wash hands after using toilet	117.223	2	.000	Sig.

Author's analysis, 2020

CONCLUSION AND RECOMMENDATIONS

This study assessed the environmental sanitation practices across the residential zones in Ketu, Kosofe Local Government Area, Lagos State, and discovered that the conditions of sanitation facilities and approaches to sanitation practices across the zones were similar. Majority 52.4% of the households across the zones have lavatories outside their houses, 87.4% and 90.8% sourced drinking and water for sanitation purposes from hand-dug wells respectively, while only 30.3% had ventilated improved pit latrine, majority 72.4% had open drainage systems around their houses. Similarly, on the issues of sanitation practices, more than half 50.5% of the respondents across the zones failed to wash their hands after visiting the toilets, and that open defecation was a common phenomenon around their abodes. Majority 81.1% dump refuse indiscriminately on communal dump-ground, while 73.5% engaged in indoor general cleaning once a month. In fact, inferential statistics revealed no significance difference in sanitation practices among the three residential zones. The local government through community development associations should not only pursue environmental sanitation reorientation until it becomes a way of life among the residents, but also, embark on environmental sanitation assessment, and subsequently, reward the best environmentally clean street, district, residential premises within the local government. The conventional efforts put in place through advertisements on radio and television stations and through erection of billboards should be strengthen by the local government. There is a need to establish a system that will ensure joint decision and cooperation of both the government and the citizenry and capable of mobilizing support and improving community confidence for sustainable urban environmental sanitation. In doing this, the government should seek to bring community associations on board as a tool towards effective coordination and for information dissemination.

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