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Attitude of Households towards Waste Management Practices in Urban Slum Area of Ibadan Metropolis Oyo State, Nigeria

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ABSTRACT

Poor waste management strategies have resulted in indiscriminate waste dumping in urban slums, creating health and environmental issue. This study therefore examined the attitude of households towards waste management practices in the urban slum area of Ibadan metropolis. Oyo State, Nigeria. A multistage sampling technique was used to select one hundred and five (105) respondents from three (3) Local Government Areas in Ibadan metropolis. Data were collected with the aid of a well structured questionnaire and analyzed using both descriptive and inferential analyses. The results showed that the majority of respondents (61.0%) were female, 76.2% were married, and 42.9% were age ranged between 31-40 years. A significant number of respondents (94.3%) generated a high level of sewage waste, while 89.5% generated nylon waste. In addition, it was revealed that the attitude of the respondents towards toward waste management was unfavorable. Gender (P=0.602, x^2=0.273), marital status (P=0.959, x^2=0.084), were found to have no significant relationship, while positive relationships existed between education (P=0.024, x^2= 9.466), access to waste collection services (P=0.005, x^2= 8.033), and the attitude of the respondents towards waste in the study area. In conclusion, the attitudes of the households were unfavorable for waste management practices based on responses from the majorities of the respondents, which resulted in indiscriminate dumping of waste by urban slums dwellers in the study area. Therefore, addressing waste collection and disposal systems in urban slums should begin with upgrading the slums through provision of infrastructural facilities.

Keywords: Eco-Label, Waste, Environment, Slum, Management

Introduction

Waste management is a topical issue globally and in many cities in sub-Saharan Africa. It is not surprising that there is a tremendous increase in the volume of waste generated as a result of urbanization development in most cities in the developing countries of Africa. According to Minghua *et al.*, (2009) increasing population levels, a booming economy, rapid urbanization, and a rise in community living standards have greatly accelerated the waste generation rate in developing countries. In Nigeria, waste generation and management has become an intractable environmental problem facing urban centers. Despite the surge in the volume of waste generated in these cities, regrettably, municipal authorities in developing countries are unable to manage the menace effectively and efficiently.

There are many reasons for poor waste management in cities in developing countries. A typical example pointed to the surge in urbanization against available economic and human resources and poor land use planning, resulting in the development of slums, squalor settlements, and poor street networks, thus making collection, transportation, and disposal of waste difficult. Currently, more than one-third of the global urban population

lives in informal settlements and is poorly connected to basic services (UN-Habitat 2010).

It has been observed that the practice of indiscriminate dumping of waste is increasing in Ibadan metropolis, particularly in urban slums. Urban slums are highly urban residential areas consisting of densely packed housing units of weak build quality, and are often associated with poverty. According to (Rice and Rice 2009), a slum constitutes, in general terms, a densely populated area exhibiting sub-standard housing and standards of living. It is assumed that infrastructure in slums is often deteriorated or incomplete, and they are primarily inhabited by impoverished people. In Ibadan, the improper dumping of waste over the years in such areas was compounded by a cycle of poverty, population explosion, decreasing standard of living, poor governance, and low level of environmental awareness, and its end product is the dumping of wastes in any available open space (Rachel *et al.*, 2009).

The poor attitude towards maintaining hygienic environments also stems from the inadequate knowledge of the inhabitants on safe and hygienic waste handling and management (Akpala, 2006). Attitude of the people towards waste management has become a major challenge in recent times, therefore this deserves not only the attention of the waste management institutions but also the dwellers as well as corporate organizations with the aim to find a lasting solution to the waste management menace

It is believed that vital human resources could be lost through poor waste management, which might affect productivity if the attitude of the households toward waste management practices dose change in the study area. It is against this background that this research is designed to assess the attitude of the respondents to waste management practice around selected urban slums in Ibadan metropolis with a goal to avert the possibility of environmental and health issues arising from improper management of waste generated in the study area. This study answers the following research questions.

I. What are the types of waste generated in the study area?

II. What waste management strategies are employed by households in the study area?

III. What are the relationships between the selected personal characteristics and their attitude toward waste management in the study area?

Methodology

Study Area

The study area is Ibadan city. The city is located between longitude 2° 50 and 3° 20’ E and latitude 7° 20’ and 7° 50’ N. It is the third-largest city by population in Nigeria after Lagos and Kano, with a total population of over 6 million people within its metropolitan area. (Jelili, *et al.*, 2022) Ibadan is ranked the second fastest growing city on the African continent according to the UN Human settlements research program (Jelili *et al.*, 2022). Ibadan is presumed to be an urbanized city in Nigeria, after Lagos. The city is however characterized by sprawling areas with unplanned development patterns (Fabiyi 2006).

Target Population

The target population of the study was household head or representative from selected urban slums in the Ibadan Metropolis.

Sampling Procedure

A multi-stage sampling procedure was used in this study. The slums in Ibadan are situated in 5 LGA namely, Ibadan North, Ibadan North-East, Ibadan North-West, Ibadan South-West, and Ibadan South East in Ibadan metropolis (Obembe *et al.*, 2018). Therefore at first stage, purposive sampling techniques were used to select three (3) LGA out of five (5) LGA slums identified in the literatures in Ibadan metropolis. The three (3) LGA were chosen because of the presence of wards accommodating major slums settlements in the selected LGA. The selected LGAs were Ibadan Northeast, Ibadan Southeast, and Ibadan Southwest LGA of Oyo State. Two wards from the selected LGA were purposively selected because of the large amounts of improper waste coming out in the selected wards. Beere and Oje in Ibadan North-East, Bode and Eleta in Ibadan South East while Oja Oba and Orita Merin were selected from Ibadan South west LGA. Also at the second stage, household counting was carried out to obtain a population in each neighborhood using the participatory counting appraisal (PCA) technique.

Based on different population in the study area as shown in Table 1, a 20% proportionate to the size of the individual neighborhood was used to select household heads in the list that ensued. A total of 105 respondents were selected for the study.

Table 1: Sampling Procedure and Sample Size

Community	Households	20% proportionate
Beere	80	16
Oje	75	15
Bode	70	14
Eleta	120	24
Oja -Oba	88	17
OritaMerin	95	19
Total	528	105

Source: Field Survey, 2022

Data Analysis

Data were analyzed with both descriptive (tables and frequencies) and inferential analysis (chi square)

Results and Discussion

Result in Table 2 shows that 42.9% of the respondents were within the age range of 31-40 years and 25.7% were below the age of 31 years, 24.8% were between the age of 41-50 years while 6.7% were between the age of 51-60 and above. This is an implication that the household heads or representatives in urban slums are middle-aged and were seemingly aware of the value of waste management in the urban slum area. Sex plays an important role in waste management. It not surprising that majority of the interviewed respondents (61.0%) were females while 39.0% were male in the study area. The dominance of females might necessarily be their availability at the time of research and their concerns for household sanitation. This could help waste management as submitted by GWA and WASTE, (2010), which stated that many communities, in the absence of adequate waste management services, women are often involved in voluntary community clean-ups, street sweeping, and even primary collection of waste. Furthermore, the marital status of

respondent's reveals that the majority (76.2%) of the respondents were married. In terms of educational level, 34.3% of the respondents had secondary education while another 31.4% had tertiary education, implying that the majority of urban slum dwellers in the study area had formal education at particular stages of their lives.

This is an implication that education can create a positive change in people's attitude towards waste management and improve the waste management in the urban slum, as they are educated and can easily persuaded for a change . Result in Table 2 also reveals that more than half (64.3%) of the respondents in the study area had a household size of 5-8, 23.8% had a size between1-4 between 11.4% had a household size above 8 dwellers. Result in Table 2 shows that the majority (73.5%) of the respondents did not have access to waste collection services, while 30% claimed to have access to them. Also it was revealed that more than half (55.2%) of the respondents stayed in Brazilian style apartments, 7 % stayed in two bedroom apartments, and 20% stayed in a room and parlour as well as a single room, respectively. This implies that the majority of the respondents saying in Brazilian style apartments shared toilets, which could lead dwellers to engage in the indiscriminate disposal of waste products in the study area. Furthermore, it was revealed from the findings that 43.8% of the respondents were traders. About15.2% were artisans, 4.8% were skilled personnel, and 1.9% were engaged in farming. The higher percentage of traders in the study area could be attributed to the fact that slums fall around the markets in the study area.

The Table shows that the majority (89.5%) of respondents earned between ₦20000 and ₦40000 monthly, 8.6% earned above ₦40000, and 1.9% earned less than ₦20000. This implies that the majority of respondents in the slum areas are low-income earners. It can be assumed that low-income earners do not want a premium for waste collection and disposal. Thus, would likely not patronize government waste collection agencies, but may resort to other illegal means or easily available methods of collection and disposal, whether legal or illegal. Lastly it was revealed that majority (61%) of the respondents in the study do not have access to the toilet facilities in the study area. This is an implication that sewage in slum area is a major problem due to poor infrastructure and lack of waste collection

Table 2: Socio-Economic Characteristics of the Respondents

Variable	Frequency	Percentage
Age		
<31 years	27	25.7
31-40 years	45	42.9
41-50 years	26	24.8
51-60 years	6	5.7
>60 years	1	1.0
Gender		
Male	41	39.0
Female	64	61.0
Marital Status		
Single	23	21.9

Married	80	76.2
Divorced	2	1.9
Educational Qualification		
No formal	30	28.6
Primary	6	5.7
Secondary	36	34.3
Tertiary	33	31.4
Household Size		
1-4	25	23.8
5-8	68	64.8
>8	12	11.4
Access To Government Waste Collection Services		
No	70	73.5
Yes	35	26.5
Type of Building		
Face me I slap you(Brazilian style)	58	55.2
A room and parlour	20	19.0
Two-bed room flat	7	6.7
A room	20	19.0
Occupation		
Artisans	16	15.2
Civil servant	24	22.9
Teacher	5	4.8
Farmer	2	1.9
Driver	12	11.4
Petty trader	46	43.8
Income		
<20000	2	1.9
10000-40000	94	89.5
40001 and above	9	8.6
Toilet Facilities		
No	64	61
Yes	41	39
Total	**105**	**100**

Result in Table 3 revealed that majority (94.1%) of the respondents generated sewage waste in the study area. This implies that sewage waste is inappropriately disposed of because of the limited toilets in the study area. It was further revealed that nylons were always generated based on 89.5% of the respondents' responses to the question. This implies that most of the commodities purchased by the household are always packaged and packed with nylons, which later turned to waste most especially pure water nylon, because the respondents regularly consumed pure water. In addition, the table shows that 83.8% of the urban slum dwellers always generate paper waste. Food waste was generated by the majority (74.3%) of the respondents in the study area. The result reveals that urban slum dwellers sometimes

makes used of certain waste materials such as animal waste with a proportion of 81.9% and metals (73.3%). Furthermore, the result also reveals that respondents (88.6%) respondents always generated plastic waste in the slum area. This implies that almost all the respondents made use of plastic materials such as plastic water bottles, plates, cups, and bowls. This result is in line with Harrison *et al.*, (2011) who reported that plastics are inexpensive, making them adaptable for different uses and later translating to a lot of waste.

Table 3: Frequency and Types of Waste Generated

Types of waste	Always	Sometimes	Never
sewage waste	99(94.3%)	5(4.8%)	1(1.0%)
Nylons	94(89.5%)	11(10.5%)	0(0%)
Paper	88(83.8%)	16(15.2%)	1(1.0%)
Food waste	78(74.3%)	26(24.8%)	1(1.0%)
Animal waste	11(10.5%)	86(81.9%)	8(7.6%)
Fruit waste	29(27.6%)	74(70.5%)	2(1.9%)
Agricultural waste	29(27.6%)	58(55.2%)	18(17.1%)
Plastics	93(88.6%)	9(8.6%)	3(2.9%)
Metals	11(10.5%)	77(73.3%)	17(16.2)
Batteries	11(10.5%)	69(65.7%)	25(23.8%)
Textiles	21(20.0%)	76(72.4%)	8(7.6%)

Source: Field Survey, 2022

Result in Table 4 shows the mean distribution of respondents' attitudes towards waste management practices in the study area. Analysis the mean distribution on Table 4 shows that the larger proportion (mean = 3.21) of the respondents disagreed with the opinion that they would be glad if individual who default in proper waste management were fined by government or environmental agencies. This agrees with the work of Kristanto and Koven (2019), who reported in a similar study in Indonesia that the local government and community's lack of discipline and commitment causes many waste management strategies become ineffective.

In addition, the majority (mean= 3.18) were of the opinion that a proper waste policy by local government or state would be a good idea. This implies that if waste management is properly handled by communities or local governments, it will enhance waste management practices in the study area. Furthermore , most of the respondents (mean=3.10) reported that they usually got worried anytime they saw an individual disposing waste indiscriminately in the environments .It implies that not all the respondents engaged in the act of defacing the environments with waste products. Additionally, majority (Mean= 3.01) disagree to the statement that participating in cleaning of the surrounding is not necessary. This is an indication that most of the respondents know that merit of cleaning and sanitation in their environments. Also, majority (mean=2.78) of the respondents strongly disagreed that open burning of refuse has no negative effect on health of human being. It was reported from Table that more than half of the respondents

disagreed, that the respondents see nothing bad whenever they dispose plastic bottles in drainage (mean=2.51). Disposing plastic bottles in drainage caused plastic pollution and can have negative effects on human health. This is line with the work of Thushari 2020 who stated that the emerging contaminant of plastic pollution affects the socio-economic aspects through negative impacts on human health. In summary it was obvious that urban slum dwellers ranked government or environmental agencies disciplining defaulters of waste management as the highest in the area of attitudinal disposition of the dwellers study area

Table 4: Attitude towards Waste Management Practices

Statement	SD	D	A	SA	Mean	Rank
Participating in cleaning of the surrounding is not necessary	28.6	50.5	14.3	6.7	3.01	4
Open burning of refuse has no negative effect on health of human being	22.9	41.0	27.6	8.6	2.78	6
Defecation in waste dumpsite/bush is not a bad idea	25.7	56.2	11.4	6.7	3.01	4
Engaging the services of waste collector is a waste of money	20.0	39.0	33.3	7.6	2.71	7
I get worried anytime I see heap of waste within my environment	4.8	20.0	38.1	37.1	3.08	3
I see nothing bad whenever I or my children dispose plastic bottles in drainage	12.4	41.0	32.4	14.3	2.51	8
I usually get worried anytime I see an individual disposing waste indiscriminately in my environment	3.8	34.3	41.0	21.0	2.79	5
A proper waste management policy by the local government or statement will be a good idea	1.0	13.3	60.0	25.7	3.10	2
I would be glad if individuals who default in proper waste management are fined by the government or environmental agencies	0.0	6.7	65.7	25.7	3.18	1

Result in Table 5 shows that the level of attitude towards waste management practices was unfavorable which was indicated by more than half (50.5%) of the respondents in the study area.

Table 5: Level of Attitude

Level	**Frequency**	**Percentage (%)**	**Mean**
Unfavorable	53	50.5	29.39
Favorable	52	49.5	
Total	105	100.0	

Based on the findings in Table 6, the majority (mean =3.27) of the respondents claimed that households used to manage waste products by offering food waste to domestic animals. This implies that respondents feed the animals with left over to reduce the amount of waste being disposed of by the households. Furthermore, the majority (mean=3.06) of the

respondents were of the opinion of selling damaged electronics to buyers to reduce the indiscriminate dumping of the material. Most respondents (mean=2.70) claimed that they did not dispose of their household waste inside the drainage. This could be attributed to the fact that waste disposal inside drainage can increase flood damage. In addition, the majority (mean=2.61) were engaged in the reuse of plastic bottles. This could be attributed to the fact that the reused plastic bottles are primarily used by petty traders in the study area for some purposes.

Furthermore, the Table also reveals that respondents (mean=2.29) recycled the waste product to manage waste products in the study (mean=2.29). This is in line with the Government of Montana (2012), which states that recycling is the process of diversion of waste to extract or recover materials and resources, or convert it into energy. In addition, the majority (mean=2.14) of respondents opined that they carried out open burning. Finally, the majority (mean=2.69) of the respondents claimed that they made use of decorative rugs/mats from textiles. This implies that the respondents have slight knowledge of how their waste should be reused or recycled to make a new product or material that can be useful for them.

Table 6: Waste Management Strategies Employed By Households

Waste Management Strategy	SD	D	A	SA	Mean
1. offer food waste to domestic animal		0.0	3.8	65.7	30.5	3.27
2. sell damaged electronics to buyers		1.0	12.4	66.7	20.0	3.06
3. I reuse plastic bottles		2.9	45.7	39.0	12.4	2.61
4. I carry out compost to manage my waste		7.6	72.4	13.3	6.7	2.19
5. I carry out open burning		18.1	16.2	27.6	38.1	2.14
6. I dispose our household waste inside the drainage		22.9	34.3	33.3	9.5	2.70
7. I do recycle our household waste		4.8	70.5	16.2	8.6	2.29
8. I engage the services of environmental waste collector		1.9	67.6	21.0	9.5	2.38
9. I use organic waste generated from my house on the farm		1.9	81.0	13.3	3.8	2.19
10. I make decorative rugs/mats from clothes/ textiles		2.9	32.4	58.1	6.7	2.69

The chi-square analysis in Table 7 shows that there is no significant relationship between the selected socioeconomic characteristics of the respondents' gender (χ^2= 0.273, p=0.602), marital status (χ^2=0.084, p=0.959) and type of building (χ^2=6.898, p=0.075). This implies that each respondent's gender, marital status, type of building, and membership of association do not influence their attitudes towards waste management. However, there was a significant relationship between respondents' educational levels and access to government waste collection services. This suggests that educational level (χ^2=9.466, p=0.024) and access to government waste collection services (χ^2=8.033, p=0.005) contributed significantly to the respondents' attitudes towards waste. (0.05 significant level)

Table 7: Relationships between the Selected Personal Characteristics and their Altitude towards Waste Management

Variable	Chi-Square Value	P-value	Decision
Gender	0.273	0.602	NS
Marital Status	0.084	0.959	NS
Educational level	9.466	0.024	S
Access to waste collection service	8.033	0.005	S

Significant at less than 0.05

Conclusion and Recommendation

The study showed that the majority of the households were females, petty traders, and middle-aged people. The attitude of households is unfavorable, which starts from the gradual deterioration of cities due to rapid growth. The finding shows that sewage waste, plastic and nylon waste are the most frequent waste products in the urban slums area of Ibadan. Despite large value of waste coming from the households in the urban slums, it was observed that different waste management ranging from feeding animals waste products to burning of waste materials were used to control dumping of waste in the study area. Therefore, addressing waste collection and disposal systems in urban slums should begin with upgrading these slums and settlements through adequate provision of infrastructural facilities, education, and awareness of residents about the health risks of poor waste management and disposal, as well as effective control through local planning officials and environmental health officers.

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