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Socioeconomic Characteristics and Waste Management in Ugep Community, Yakurr Local Government, Cross River State, Nigeria

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Abstract

The research focused on examining the relationship between socioeconomic characteristics and waste management in Ugep Community. Research deployed the administration of questionnaire to targeted 450 households in the community with emphasis on household size and their waste disposal options or methods as well as engaged focus group and conducted interviews to generate data. 420 responses were retrieved and results indicate larger households are disposed to generating more waste and face challenges in managing their waste properly leading to increased likelihood of open dumping and burning, while smaller households tend to adopt better waste management practices. The study therefore recommended sustainable waste management strategies which take into account household size and composition. The study emphasizes the need for awareness creation and education of the inhabitants on waste management as well as encourage relevant bodies like government at various levels to make concerted efforts at investing in waste management equipment and infrastructure all with the aim of engendering informed policy decisions at improving waste management practices that would in the end mitigate environmental and public health challenges in Ugep Community.

Keywords: *Household size, Waste Management, Ugep Community, Environmental concerns, public health*

INTRODUCTION

A key area of concern, as an outcome of man's interaction with and exploitation of the environment, is the challenge of environmental sanitation and its implication for health and human well-being, especially in the developing countries of the world like Nigeria. With the transition from an agrarian economy all through the emergence of industrialization and general improvement in living standard, production patterns have indeed improved as well as impacting on the changes in consumption patterns, an innovation which has through globalization become acceptable to the less developed countries of the world like Nigeria. More people mean more garbage, especially in fast-growing cities where the bulk of waste is generated. World Bank estimates that cities currently generate roughly 1.3 billion tons of solid waste per year; with current urbanization trends, this figure is estimated to grow to 2.2 billion tons per year by 2025 – an increase of 70 percent. This means that, managing waste will become more expensive and the cost implication will be most severe in low-income countries already struggling to meet basic social and infrastructure needs, particularly for their poorest residents. Conventionally, solid waste (in most cases referred to as garbage) is usually collected as a bundle of trash by local authorities or by private firms to be taken to a transfer station and then to a landfill (sometimes collected and taken straight to the landfill). Solid waste is the unwanted or useless solid materials generated from combined residential, industrial and commercial activities in a given area. This

is accentuated by the increasing consumption of varied goods and services as well as the congestion in (population density, clustered living, household sizes, slums and traffic congestion) in most urban centers.

In developing countries, about 60% of the generated waste is presumed to be effectively collected but eventually ending up in open dumps, without the associated risks but merely displacing them. A major proportion of waste resides either unattended or dumped within or around the community, causing visual aesthetic discomfort, devaluing quality of human health and degradation of water, air and soil. In contemporary times, issues of rapid population growth increase in urban density, poor urban planning and development, and above all changes in consumption patterns and lifestyle will result in increased waste generation and variations in composition within countries and cities. The municipalities in developing countries are deficient in financial resources and skills required to effectively manage waste. Dumpsites usually do not meet the environmental standards (Eteng, Offiong, & Offiong, 2013) and are a source of air pollutants that can potentially contaminate air, surface and ground water and soil, consequently damaging human health (Eteng, et al 2021) pointed out the impact of poor waste disposal methods on water quality in Ugep Community a growing urban settlement in Nigeria. On the other hand, roughly 20% of the waste is being recycled by the informal sector but the lack of concern towards precautionary measures exposes waste collectors to high health risks**.** Quite a number of notable authors and researchers from various fields have contributed to the issue and literature of waste disposal and management. The reason why the topic is filled with research findings from various writers ranging from the social sciences, physical sciences the medical science as well as contributions from technology and engineering fields.

Quite an enormous literature exists on the issue of waste disposal management as it is a key target area of the sustainable development goals 2030 and certain aspects of the discuss has not been researched, especially from the dimension of regions and the varied nature of economies of the developing world. Among which include limited understanding of waste generation patterns, formulation of effective waste management strategies as it concerns the peculiarities of the Ugep environment. There is need for quantification, a huge challenge in terms of volume of waste generation to enable diverse health practitioners and decision makers ascertain the health implications and ancillary concerns of inadequate waste disposal. For the purpose of this research, attention would be on the impact of household size on waste disposal methods or practices with a view to examining how household size influences waste disposal methods including open dumping, burning, disposal in drainage and other practices. The Household is a very key variable in the socioeconomic life of a community and occupies a very relevant position in both qualitative and quantitative research as it aids the determination of gender profiling of respondents, income levels, education, occupation and the quality of residence among other parameters.

STUDY AREA

Ugep, a rapidly transforming community serves as the administrative headquarters of Yakurr Local Government Area in Cross River State, Nigeria. Situated in the western part of the state, it lies between longitudes 08°03’40’’E and 08°05’44’’E, and latitudes 05°47’30’’N and 05°48’33’’N. Geographically, Ugep community is located within the lowland and scarp lands of Cross River State, with a generally gentle relief, except for areas where granite extrusions rise above the surface. The town sits at an elevation of 200 to 300 meters above sea level, which minimizes the incidence of flooding. The local economy is driven primarily by subsistence agriculture, along with artisan trades, commercial activities, and civil service employment. Most residents own their homes, while rental housing is limited, primarily catering to non-indigence working in government and private enterprises within the community. Increasing population of Ugep presently estimated at 280,000 people.

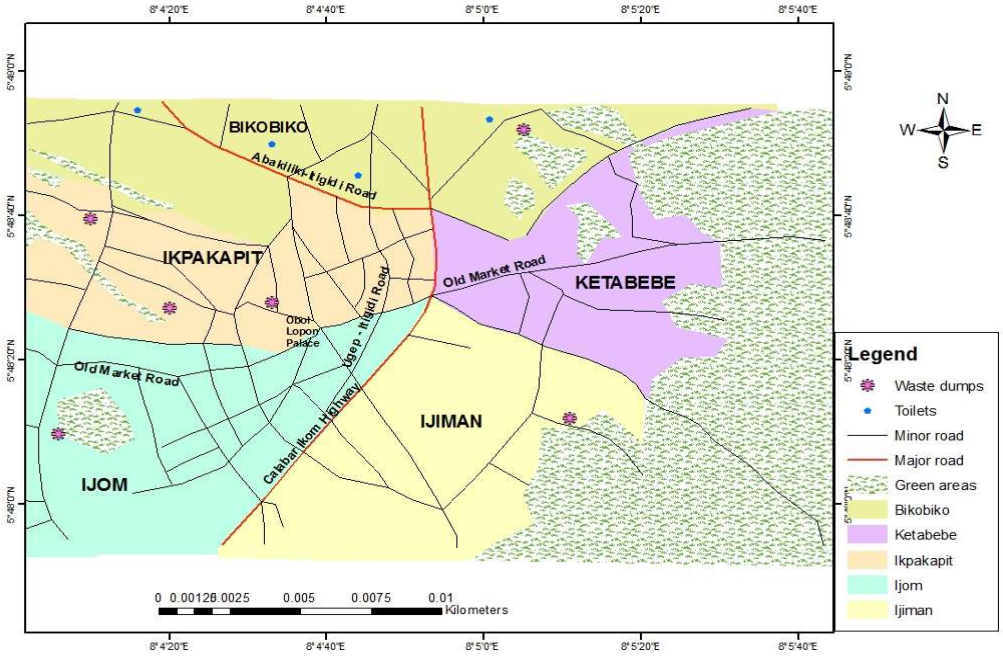


Figure 1: Potential Waste disposal and pollution sources

Source: Department of Geography and Environmental Sciences GIS Laboratory, University of Calabar

MATERIALS AND METHODS

A preliminary survey was conducted, on the perceived impressions, as well as expectations of the inhabitants on the issue of socioeconomic characteristics and waste management in the designated geo-political wards that make up Ugep community. Related questions were asked, and answers provided, on household size waste disposal methods. The data sourced for the research ranged from Data on the waste disposal facilities in the study area. Field observations collaborated by respondents' answers, identified open dumping of refuse, open pit, disposal into water bodies – stream and ponds, in the bush on the way to farms, drainage or gutter, through burning and through dug pit and buried methods. Data on demographic characteristics: age, sex, occupation, educational qualifications, income levels, household size, ways of waste disposal. These constitute primary data sources. Secondary sources of data were also obtained from the National Population Census, Cross River Independent Electoral Commission, and the Ministry of Lands and Surveys. Other notable secondary sources included conference proceedings, journals on waste management, magazines, unpublished dissertations and theses, textbooks, maps, photographs, and gazettes available from libraries and through the internet. Focus Group Discussions were also held in the course of the surveillance survey: civil servants, and artisans, as well as farmers, were interviewed and relevant data also collected accordingly.

PROCEDURE FOR DATA COLLECTION

The major source of data collection for this research was conducted through the administration of structured questionnaire, drawn up by the researcher, and reviewed for correctness, in line with

the objectives of the research. The questions covered aspects of waste disposal methods and demographic information from respondents, such as: age, sex, marital status, educational qualifications, and occupation, household size as well as income levels. The population set of this study was made up of all adults, 18 years and above, in Ugep Community. According to the National Population Census 2006, the population figures stand at 116,092. The Cross River State Independent Electoral Commission was therefore, approached, and the figures captured in the Voters Register were used for the research, bearing in mind that only persons of 18 years and above, i.e., the youth and adult populations who are naturally expected to be aware of events around them, were used as respondents. In order to select the sample of the study, the Taro Yamane (1967) formula of sample size determination was employed, to deter mine the sample size for the study.

The formula is given as

$$n = \frac{N}{1+N(e)^2}$$

Where n= sample size, N=total number of populations, e= level of significance at 0.05.
Given, the population of 116,092 our sample size becomes?
Then,

$$n = \frac{116,092}{1+ (116,092 \times 0.05^2)}$$

$$= \frac{116,092}{1+ (116,092 \times 0.0025)} = 400$$

This approximately gives a sample size of 400. The researcher decided to add 100 respondents giving a total of 500 respondents selected and used for the study.

Table 1: Population and sample distribution in the study area

S/N	Wards	Population	Sample
1	Bikobiko	20782	90
2	Ketabebe	24926	107
3	Ijiman	18672	80
4	Ijom	27893	120
	Ikpakapit	23819	103
	Total	116092	500

Author's Field Work, 2024

Data Analysis

Table 2: Solid waste disposal method across the five wards in Ugep urban

S/N	Method of Waste Disposal	Bikobiko No of Respts	%	Ketabebe No of Respts	%	Ijiman No of Respts	%	Ijom No of Respts	%	Ikpakapit No of Respts	%	Total Responses	%
A	Open dump	53	77.94	13	12.4	49	77.8	21	19.63	37	48.1	173	41.2
B	Open pit	3	4.41	8	7.62	2	3.17	27	25.23	2	2.6	42	10
C	water bodies	1	1.47	7	6.67	7	11.1	38	35.51	0	0	53	12.6
D	BUSH	6	8.82	32	30.5	4	6.35	9	8.41	2	2.6	53	12.6
E	Gutter	1	1.47	5	4.76	0	0	0	0	3	3.9	9	2.14
F	Burning	0	0	14	13.3	1	1.59	9	8.41	13	16.9	37	8.81
G	Dug pit	4	5.88	26	24.8	0	0	3	2.80	20	25.9	53	12.6
	Total	68	100	105	100	63	100	107	100	77	100	**420**	**100**

Authors' field report, 2024

Solid waste disposal method across the five wards of Ugep urban

Table 2 which shows how wastes generated across the various sampled areas depicted that the most preferred ways of disposing wastes was the open dump method as seen in Bikobiko with 77.9%, Ijiman with 77.8% and Ikpakapit with 48.1%. On the other hand, it was also noticed that in Ketabebe, the generated waste was thrown into the bush with the option ranking highest at 30.5%. However, the respondents in Ijom reported water bodies as the option had a value of 35.5%. This is noticeable around drainages on the hospital road. In summary it was observed that the wastes generated in the area were openly dumped with a value of 41.2%. On the other hand, it was also seen that the inhabitants of the area also indulged in dumping waste into water bodies, in the bush and also buried in dug pits as all of these options had values of 12.6% respectively. From this study one could observe that a lot need to be done as regards waste disposal as the open dumping method which is predominant in the area does not meet the aspiration of the SDGs concerning basic and hygienic sanitation. According to WHO there is need to be a sequential process of waste disposal which start with putting waste in a waste basket, then carried to a designated waste dump and movement to a recycling facility that could be of benefit for agricultural use as practiced in countries like China and United Kingdom. The environmental effects of this kind of disposal method usually affect the health and general wellbeing of the inhabitants with the radius of this dumping site.

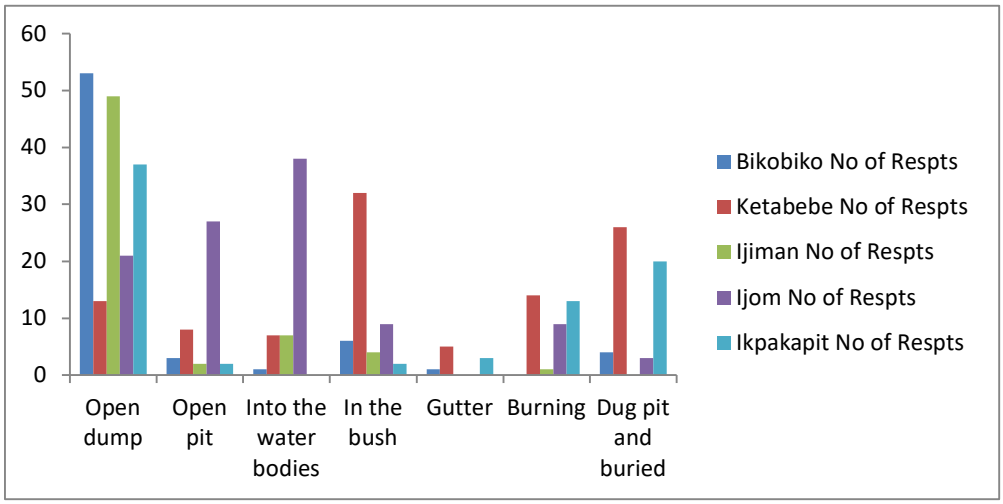
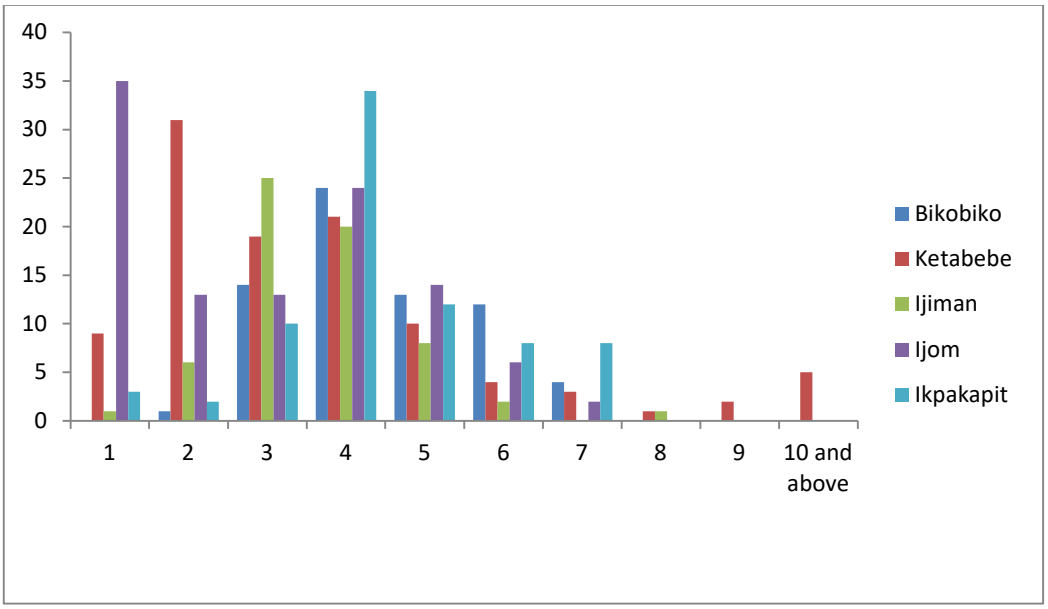


Fig 2: Methods of waste disposal in study area.

Household size of respondents across the five wards in Ugep urban

S/N	Household size	Bikobiko	%	Ketabebe	%	Ijiman	%	Ijom	%	Ikpakapit	%	Total response	%
A	1	0	0	9	8.57	1	1.59	35	32.71	3	3.9	45	10.7
B	2	1	1.47	31	29.5	6	9.52	13	12.1	2	2.6	100	23.8
C	3	14	20.59	19	18.1	25	39.7	13	12.1	10	12.9	109	25.9
D	4	24	35.29	21	20	20	31.7	24	22.43	34	44.2	83	19.8
E	5	13	19.12	10	9.52	8	12.7	14	13.08	12	15.6	34	8.09
F	6	12	17.65	4	3.81	2	3.17	6	5.61	8	10.4	17	4.05
G	7	4	5.86	3	2.86	0	0	2	1.87	8	10.4	10	2.38
H	8	0	0	1	1.0	1	1.59	0	0	0	0	10	2.38
I	9	0	0	2	1.9	0	0	0	0	0	0	5	1.19
J	10 and above	0	0	5	4.76	0	0	0	0	0	0	7	1.67
	Total	**68**	**100**	**105**	**100**	**63**	**100**	**107**	**100**	**77**	**100**	**420**	**100**



Au**thors'** field report, 2024

Results and Discussions

In the Ugep, community the reason for the high incidence of open dump of refuse across the five wards has been attributed to distance to a waste dump site, attitude and lack of waste basket in homes. (personal interview). Although there is a central body (Ugep Urban Development Authority) that is responsible for refuse disposal, it still lacks the technical know-how to curtail the incidence. In other cases, especially farmers prefer carrying their waste on their farm basins and either dump on farmlands or by the road side leading to their farms. Most of the items are post-harvest food losses and waste. For some, is to add manure to the soil. This method has been in practice right from time and it has helped their crops to grow well irrespective of the level of soil degradation. There is need for awareness creation on the proper and best way to dispose refuse as well on how to recycle waste for proper farm management.

Conclusion

It can be deduced from the above that households with between 8 to 10 inhabitants generate more waste that lesser household sizes and are easily disposed to dumping their waste in open dump sites, The relationship between household size and method of waste disposal in Ugep community is very considerable implying that as it relates to increased waste generation: larger households generate more waste due to increased consumption and food preparation. Larger households may face challenges in managing waste, leading to increased likelihood of open dumping or burning as an option. Smaller households on the other hand may be more probable to adopt better waste management practices and methods such as waste isolation and possible recycling. Smaller households tend to generate less and fewer waste thus easier to manage and dispose of waste. The implications are bound to raise environmental concerns like open dumping with attendant impacts like air pollution, poor aesthetics as well raise public health risks since the community has limited access to healthcare services. An understanding of the relationship between household size and waste disposal methods in the community would guide policy makers, community members and practitioners of waste management in this regard, the Ugep Urban

Development Authority would be able to develop targeted strategies aimed at improving waste disposal and management and thus mitigate environmental and public health challenges.

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