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Influence of Livelihood Assets on Attitude Towards Solid Waste Sanitation: A Case of Okobaba, Lagos, Nigeria

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INFLUENCE OF LIVELIHOOD ASSETS ON ATTITUDE TOWARDS SOLID WASTE SANITATION: A CASE OF OKOBABA, LAGOS, NIGERIA

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ABSTRACT

Land form, management policy and socio-economic characteristics have been identified as factors responsible for poor solid waste management. This study examined the influence of livelihood assets on waste sanitation/disposal behaviour in Lagos Metropolis: a case study of Okobaba. A multi-stage sampling procedure was used to obtain data for analysis. From the data collected and analyzed descriptively, efforts were made to identify and examine the respondents' socio-economic characteristics, waste sanitation characteristic, livelihood assets and the connection between livelihood assets and waste sanitation behaviour of people in the area under study. The research result established the existence of variations in the waste disposal characteristics of respondents in the area under study. Therefore, it is recommended that a deliberate policy to provide livelihood assets or conditions that will improve access to better livelihood capacity, adequate for low-income households to meet their basic psychological livelihood needs. This is imperative in ensuring attitudinal change towards waste management and advancement to a second-order need like environmental sanitation.

Keywords: Disposal Characteristics, Livelihood Assets, Socio-Economic Characteristics, Solid Waste Disposal, Waste Management Policy.

1. Introduction

The deteriorating quality of the urban environment in the developing countries is closely linked to the issue of poor management of solid waste management. To address this situation, global initiatives like Agenda 21-the Rio Declaration on Environment and Development and United Nations Millennium Development Goals (MDGs) etc. entrenched solid waste management as an important facet of sustainable development for any nation. Unfortunately, the solid waste management efforts have been quite inefficient and unproductive in a majority of fast-growing cities [1]. This has been collaborated by World Health Organization (WHO) report, revealing that as at 2010, billions of people in developing countries lacked safe sanitation and also, predicted that, within 2 decades, an additional two billion people (at the minimum) would demand safe sanitation in towns and cities of developing countries



[2,3]. The millennium development goal target ten (10) was therefore proposed, to meet the need of at least, half the proportion of people with suitable access to basic sanitation and safe drinking water by 2015 [3]. The Nigerian national stakeholders/ investor's forum on Municipal Solid Waste Management cited ineffective Municipal Solid Waste Management as a probable deterrent to attaining Millennium Development Goals [4,5].

Livelihood asset refers to the income/resource base of a household by which daily living is sustained and maintained [6]. It encompasses the daily activities engaged to provide for a household. Although there are diverse aspects of livelihood assets (like social, financial, cultural, natural, human), this work would be limited to human and financial assets, by which we refer to the person about the activities he engages in to keep his household.

In Lagos Nigeria, the quantity of waste generated is expected to rise in linear proportion with an increase in the population [7]. Therefore, this solid waste generation may increase beyond the extent of the ability of the agencies to improve on the financial and technical resources that would parallel this growth [5]. Also, besides population growth and increasing waste generation, there are other socio-economic dynamics like the scale of development, urbanization, poverty, over-crowding that are compounding the problem of waste management and compromising the quality of urban life in Lagos despite calculated efforts by the state government to reduce, reuse, recover and recycle wastes generated within the Lagos [8,9] and Uyo [10]. These dynamics are more pronounced in the low-income communities of Lagos metropolis, making it a threat to city dwellers, planners and other stakeholders.

Previous work of Agwu (2012) [11] revealed that the level of awareness, knowledge and practices of solid waste management is closely related to the background (sex, age and social class) of Port-Harcourt city residents. To enhance waste management practices, an awareness program to address problems associated with solid waste management has to be introduced at all levels.

The aim of this study, therefore, is to examine how livelihood strategies of residents correlate with the choice of waste disposal in low-income communities in Lagos metropolis using Okobaba as a case study.

Literature Review

Waste generation rate may at best, be assumed a figure, in developing countries where data is scarce and the few available data are incomplete based on the unscientific method in which the data were obtained and presented. This data is handy in the effective management of waste in any urban area. It is reported that the daily waste generation rate in Ghana is about 12,710 tons and geographical locations, the forest and coastal zones generating higher wastes [12]. Conversely, Xu (2016) [13] reported that family size and dining at home directly impacted the waste generation rate while employment rate and age, among other factors indirectly impacted the rate generation of municipal waste.

Municipal waste are residential and commercial wastes, generated within a specific municipal area. They are characterized into bio-degradable waste, non bio-degradable waste, recyclable waste, inert and miscellaneous waste [14].

Factors such as family type (nuclear, mono-parental or nuclear) has a huge impact on the volume of waste generated [15]; geographical location, collection frequency and season [16] Khan et al (2016) reported that different socioeconomic groups produced different kinds/quantity of waste – the middle socioeconomic group generating the most waste. Plastic waste and food waste are mostly generated in the high socioeconomic group than the low socioeconomic group.

In a construction site, the level of education and experience of the contractors has been found to be a major influence in the amount of waste generated at the construction site [17] while the public-private nature of a demolition project was identified as a major player in the volume generation of demolition waste [18].

In this work, an attempt is made to establish the existence of a relationship between waste sanitary methods and the livelihood assets in the study area which is classified as a low-income community in Lagos, Nigeria.

2. Research methodology

Types and Sources of Data

The data type that was considered for this study was socio-economic, neighbourhood characteristics and livelihood. The data were obtained basically from the primary sources only. Personal observations and questionnaire administration were used to obtain primary data. The questionnaire was designed and administered to elucidate relevant information on socio-economic, the livelihood of the households and neighbourhood characteristics. Direct observation was used to examine the physical, environmental and housing conditions of the study area.

Study Area

The study area is characterized by shanties built with make shift materials on the water, as well as wood preservation and sawmill marketing being the major activities of the place. Okobaba is interspaced by uninhabited swampy mangrove vegetation. Another notable feature of the study area is the famous Third Mainland bridge of Lagos which traverses the Lagos lagoon.

Geographical Location and General Characteristics of Okobaba

Okobaba is framed by longitudes $2^{\circ} 42'E$ and $3^{\circ} 22'E$ of the Greenwich Meridian and latitudes $6^{\circ} 22'N$ and $6^{\circ} 42'N$ of the equator Okobaba is located along the edge of the Lagos lagoon, Ebute Metta East Area of Lagos. It is bordered to the North, East and South by the Lagos

Lagoon and to the West by Ebute Metta East residential neighbourhood. The map of Lagos, showing the location of Okobaba is shown in figure 1.

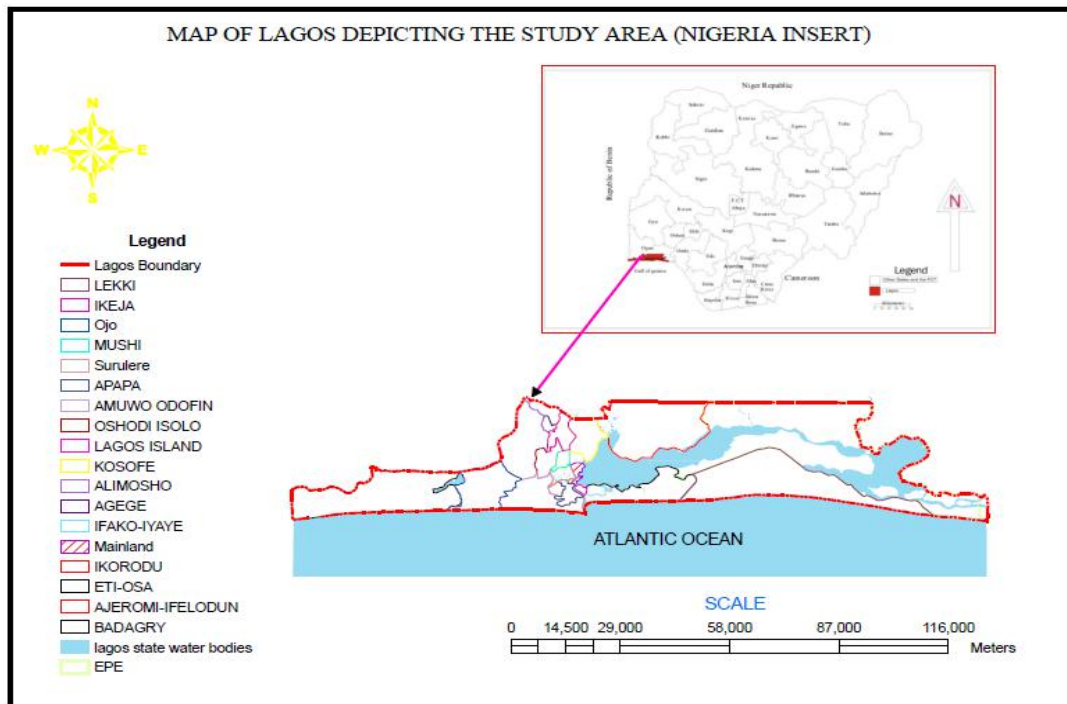


Figure 1: Map of Lagos Depicting Location of Study Area (Mainland L.G.A) with Nigeria Insert. Source: Lagos State Geographic Information System and Mapping Archives

Sampling Technique and Procedure

For this study, a total number of 400 households were sampled using a multi-stage sampling method. This method involved a combination of disproportional stratification and simple random sampling method. Having chosen the number of houses to be sampled in each ward, the next step is sampling procedure. The sampling procedure first encompassed identification and classification of streets in each ward based on their street length. Using the mean of the longest and shortest street in the study area, three classes of streets were identified (Example the length of the longest street is 314m + length of shortest street 98m = 412m \div 2=206m) To get three class category this figure is divided into three to give 68.9 approximately 69. Thus, streets with length 1-69 meters were classified as short streets, while streets with length 70-138 meters and street of length 139 meters and above were classified as medium and long streets respectively. Therefore, in each ward, street was selected disproportionately from each length class.

Data collection instruments

Data collection during this research was through the use of questionnaire administered to respondents living within the sample area. This is a composed set of structured questions that

were used to compile information during the survey. All respondent filled out the questionnaire independently.

Data Analysis and Presentation

Data analysis is an effort to categorize, summarize and seek pattern and relationship with information collected. The method of data analysis could be either descriptive or inferential statistical analysis. For the purpose of this study, the data collected from the survey relating to each objective was analyzed descriptively and presented in figures.

3. Results and discussion

From Figure 2, these clearly identified sources of livelihood make up about 62.5% which confirms the classification of the study area as low income.

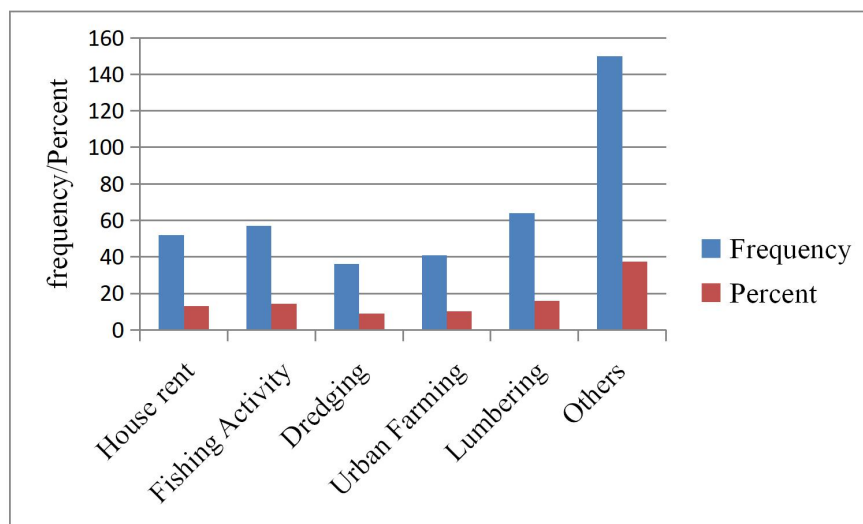


Figure 2: Respondents' Predominant Source of Livelihood

Knowledge of Waste Management

The result shown in Figure 3 revealed that most (308) respondent representing 77.0% indicated that they have knowledge of waste management while 77 respondents representing 23.0% don't have knowledge of waste management. This result suggests that over half of the respondents in the study area are aware of the appropriate waste management practice that will prevent health risk associated with improper waste management.

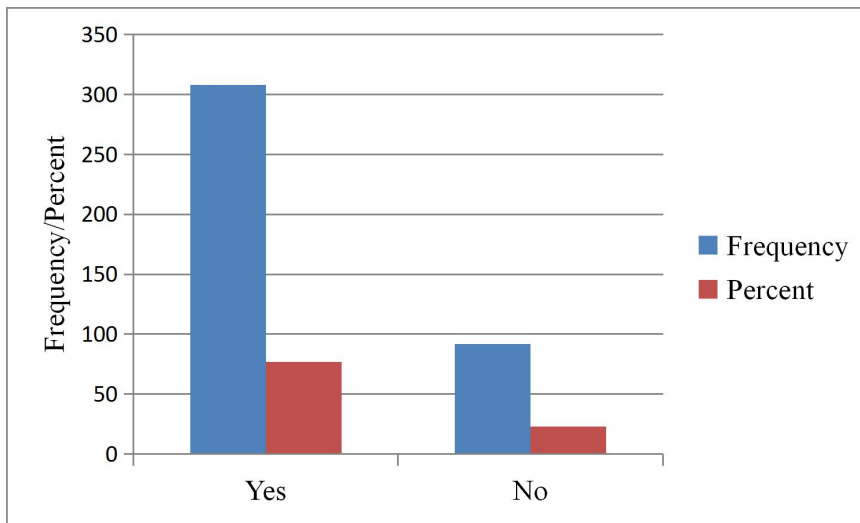


Figure 3: Respondents' knowledge of waste management and its negative health impact

Waste Sanitation Characteristics of Respondents

The solid waste sanitation characteristics variables considered in this study include; type of dustbin, location of the dustbin, a distance of dumpsite, methods of disposal, duration of refuse before collection and respondents' means of solid waste storage. Figure 4 reveals a poor attitude of the respondents to a sanitary environment with over 50% using uncovered means of waste collection/dust bin.

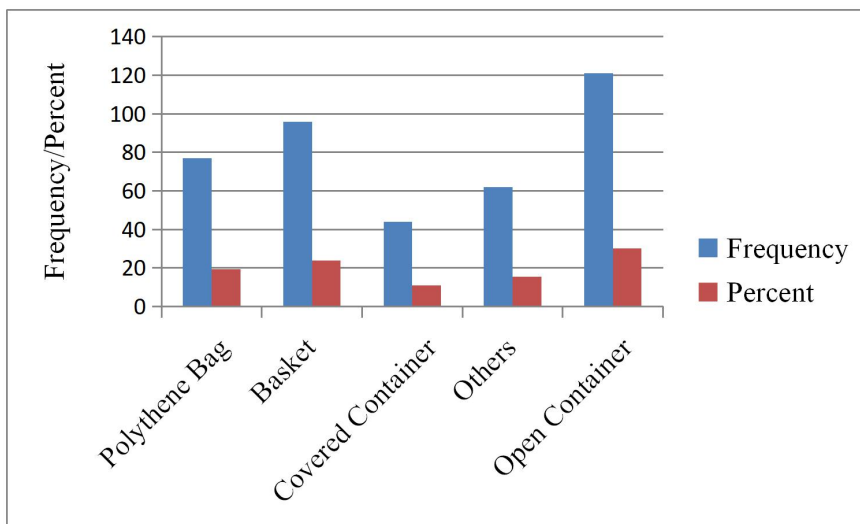


Figure 4: Respondents type of Dustbin

Respondents' Location of Dustbin

Result in Figure 5 revealed that, most respondents (106) representing 26.5% indicate that the location of their dustbin is others (outside the listed options), 103 respondents representing 25.8% indicate that their dustbin is inside the house, 100 respondents representing 25.0% indicate that their dustbin is outside the gate, while 59 and 32 respondents representing 14.8% and 8.0% keep dustbin inside the kitchen and at the door respectively. This study revealed that on the whole more than half of the total respondents keep their dustbin either at the door, inside the kitchen/house which is not hygienic to health.

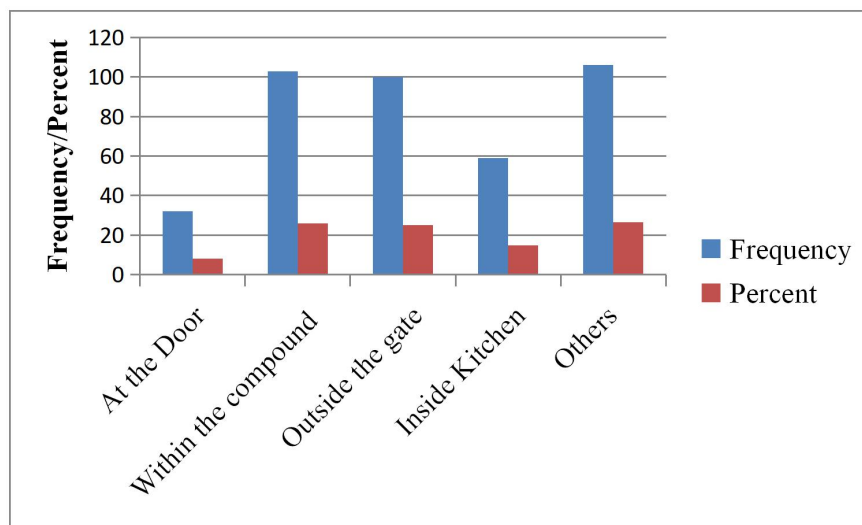


Figure 5: Respondents' Location of Dustbin

Respondents' access to waste collection Van

Result in Figure 6 shows that most respondents (265) representing 66.3% indicate that they have access for waste collection van while (135) respondents representing 33.8% don't have access to waste collection van. This means that almost 70% of the respondents in the study area cannot use lack of access to waste collection van as an excuse for the poor sanitary condition or use of the inappropriate method of waste disposal.

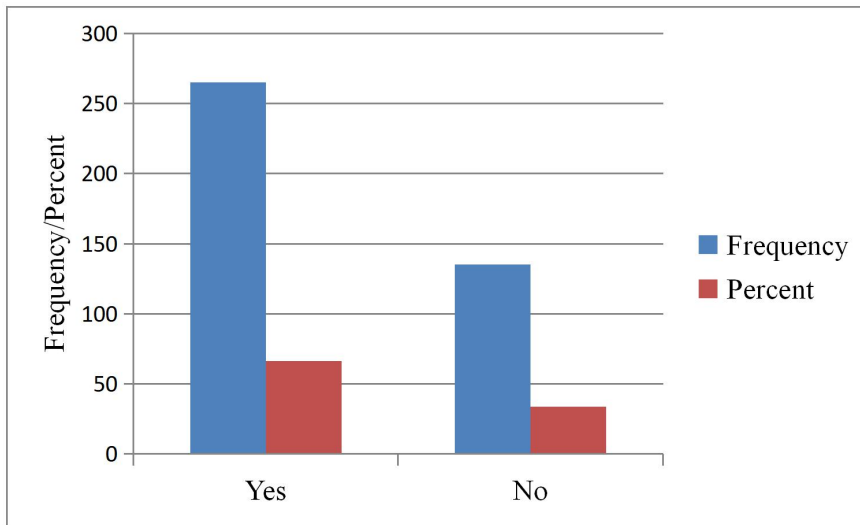


Figure 6: Respondents' access to waste collection Van

Respondents' Waste Duration before Collection

As shown in Figure 7, most respondents (189) representing 47.3% indicate that their waste are collected every week, 99 respondents representing 24.8% indicate that their waste are collected few times a week while 78 and 34 respondents representing 19.5% and 8.5% indicate those that don't have an idea of how long it takes to collect their waste for disposal and those that indicate that their waste are collected monthly respectively.

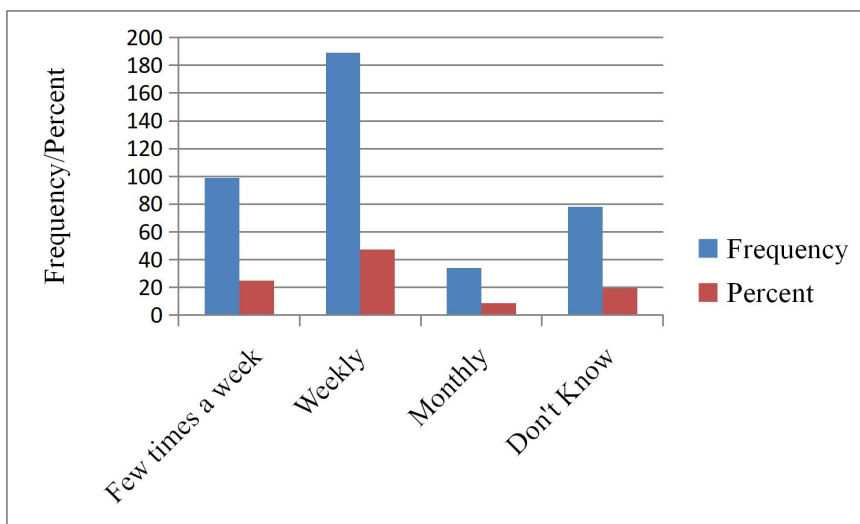


Figure 7: Respondents' Waste Duration before Collection

Results obtained suggest that low-income households generate solid waste with a poor sanitary environment which is similar to findings of [19, 20, 21]. In like vain, Kahn (2016) [14] demonstrated that the social aspects of the poor groups in connection with the process of informal waste recovery are paramount for achieving the sustainable outcome of Municipal Solids Waste Management (MSWM)

4. Conclusion

This study shows that livelihood (human and financial) assets do influence respondents' attitude towards waste sanitation behaviour in Okobaba, a low income coastal informal community. More awareness of the benefits of a sanitary environment is recommended for the low-income areas. This would likely impact on the attitude towards solid waste disposal methods. Improper waste disposal methods are unsightly and detrimental to the environment and health of plants and animals.

The findings of this study are relevant to urban planning and development with special reference to waste management and poverty reduction strategy. It is important for planners and policymakers to focus on waste management and poverty reduction more especially in and around low income coastal informal communities. In planning waste management in low-income communities, planners and other practitioners should further identify livelihood assets that will boost household economic strength, reduce travel cost, improve health condition, revive their energy usage and create more productive time to engage in income-generating activities necessary for a balanced socio-economic life and improved sanitary behaviour.

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Competing interest

None is declared by members of the Team.

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