ASSESSMENT OF THE EFFECTS OF SOLID WASTE MANAGEMENT IN IJANO-KPAJA, LAGOS STATE

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A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY, FACULTY OF LIFE SCIENCES, UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FUFILLMENT OF THE REQUIREMENT FOR THE AWARD OF DEGREE OF B.Sc. (HONS) IN SCIENCE LABORATORY TECHNOLOGY.

AUGUST, 2023

CERTIFICATION

This certifies that this project on the topic of **EFFECTS OF SOLID WASTE MANAGEMENT** was carried out by **Jennifer Onosomi OKHIFO** Matriculation number LSC1706108 in the Department of Science Laboratory Technology, Faculty of Life Sciences, University of Benin, Benin city.

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DEDICATION

This project work is dedicated to God Almighty for unending mercies and support towards the completion of this research.

ACKNOWLEDGEMENT

Firstly my profound gratitude goes to God almighty for his strength and wisdom in making this work a success. I honestly want to thank my dad Mr Vincent Okhifo for his love, care and financial support all through my stay in the university, most especially for his unrelenting prayers without which I wouldn't have gone this far and to my lovely siblings.

I am sincerely grateful to my supervisor Mrs Janet Ailegbo Obayuwana who painstakingly went through my work at each stage making corrections. Her patience and guidance saved me a lot of errors and enhanced the exposition of my work.

Lastly to close friends and colleagues, Rita, France, Maphil, Michael and Austin who in one way or another contributed to the writing of this dossier, you guys are incomparably the best.

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ABSTRACT

The issue of managing solid waste in cities across Nigeria is becoming increasingly concerning. There has been a significant rise in the amount and variety of solid waste produced on a daily basis in the country, mainly due to population growth, urbanization, industrialization, and overall economic development. In order to evaluate the impact of solid waste management, a study was conducted using a cross-sectional design, focusing on the Lagos Municipal area.The study found that households primarily disposed of their solid waste in communal skip containers followed by dumpsites and private waste management firms. Additionally, it was discovered that residents expressed a desire to dispose of their waste properly but faced obstacles in doing so. The study's results suggest that it is crucial to address the solid waste management issue in Nigerian cities. This can be done by implementing measures such as educating residents, providing skip containers and dustbins, and enhancing the local authority's policies to ensure effective solid waste management.

CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Solid waste management as defined by Robinson (1986) is the application of techniques that will ensure the orderly execution of the functions of collection, transport, processing, treatment and disposal of solid waste. Waste in terms of definition can be understood as any product or substance that has no further use or value for the person or organization that owns it, and which is, or will be, discarded (www.wikipedia.com). It thus excludes products or substances that are reused or sold by its owner. The entire understanding of waste is based on the primary owner's or potential consumer's value judgment. Solid waste is classified into domestic, commercial, agricultural, institutional and miscellaneous ways (Hargety *et al*. 1973).

Similarly to other countries, the Nigerian government has taken steps to address solid waste management for the sake of public health and improving the overall environment. Even without government intervention, households and businesses tend to resort to suboptimal disposal methods, leading to health risks, as well as issues with dumping and littering. In an attempt to address these challenges, the collection and disposal of waste in a centralized facility seemed like a viable solution. However, this approach has also presented new challenges. The predominant method of waste disposal in Nigeria has been, and continues to be, landfilling, with little consideration for the environmental risks associated with such actions.

The amount of solid waste generated in Nigeria has been increasing with the rise in the country's population. It was estimated, based on the population of 22 million that the country generates 3.0million tones of solid waste annually and an average

per capita daily generation of 0.45kilograms (Mensah and Larbi 2005). It is projected that the amount of waste generated is expected to increase as population rises (Ibid).

The worsening solid waste problem in Nigerian cities has given rise to waste management companies that are making significant contributions to society and the environment. These organizations aim to keep the environment clean, beautify it, promote health benefits, and also profit from their activities. In doing so, they also provide employment opportunities for the local population, particularly in the Lagos Municipal area.

1.2 PROBLEM STATEMENT

Solid waste disposal in Lagos Municipal is being an unmanageable burden to the authorities. From the ethical point of view, proper waste management is the most important task of the Lagos Municipal sub-metro authorities for keeping the town clean and healthy. The Lagos Municipal Metropolitan Assembly (2006) claims that poor infrastructural conditions, particularly with regard to road networks and waste collection points, inadequate funding for capital investments necessary for the effective delivery of waste management services, inadequate byelaws and a lack of enforcement of those that are in place, a lack of adequate revenue mobilization to cover the costs of waste management services, and the fact that Lagos Municipal City has a solid waste management problem are all related.Although study on waste management-related topics has been done, the consequences of solid waste management on the residents of a particular municipality have not received the attention they deserve and should no longer be ignored. Effective solid waste management, as stated in a publication by the Lagos Municipal Metropolitan Assembly in 2006, is crucial to the growth of Lagos Municipal metropolis. Due to the poor methods it is being used, it also stands in the way of its progress.

The phenomena of solid waste management has both positive and negative effects on people, which has led to the current predicament. The former results from extremely effective means of carrying out this process, whereas the later is a result of an inadequate way of handling the identical situation.

The residents of the Lagos Municipal Industrial Area, which is the case study for this research methodology, have experienced both positive and bad effects as a result of this same solid waste management problem. Examples include providing jobs for its residents, maintaining a clean and lovely environment, and not forgetting the advantages to their health that the residents of the Lagos Municipality's clean neighborhoods enjoy. Additionally, the unclean and hazardous surroundings have a severe impact on residents' health and can even make it difficult for them to find work because of the town's poorly maintained slum areas. In Lagos Municipal, waste management policies have lately shifted to include larger concerns about sustainability and conservation. Avoidance, reuse, and other non-traditional approaches should also be considered.Understanding the importance of this research starts with figuring out how solid waste management affects things. This is due to the fact that this project's impacts extend much beyond amenity, health, and employment to the entire country's economy. The ability to reuse and recycle usable byproducts and/or used final items is determined by solid waste management, which lends validity to this notion. When solid waste is properly managed, it can also be avoided, saving the nation a ton of money that can be invested in other areas of its economy. Despite the reality that it will have an entirely opposite impact on the country and its economy if it is poorly managed. management of solid waste

1.3 OBJECTIVES OF THE STUDY

The study's primary goal is to shed light on the impacts of solid waste management in Lagos Municipal. In addition to the main goal described above, there are several particular goals that will be taken into account. These include:

- To examine the present situation of solid waste management in Lagos Municipal.
- To examine the hindrances to household solid waste disposal.
- To identify the challenge of an effective solid waste management system in Lagos Municipal.
- To find out the effect of the challenge identified above.

1.4 RESEARCH QUESTION

Questions to be addressed under this research project are:

- What is the present state of solid waste management in Lagos Municipal?
- What are the hindrances to household solid waste disposal?
- What are the challenges of an effective solid waste management system in Lagos Municipal?
- What are the effects of the challenges identified above?

1.5 LIMITATIONS

The time given for this project could make it more difficult to do the research. Due to the size of the study's scope, a short amount of time is needed to complete the project. This is because obtaining the pertinent information would require accessing the internet, books, journals, newspapers, media reports, and published

documents, as well as collecting data from respondents through questionnaires and interviews.

Similar to this, it is to be expected that some respondents won't offer the necessary information. Most people, especially Nigerians, would refuse to provide any information or would withhold some unless they were comfortable with the questionnaire for their own personal reasons.

These restrictions would not affect the quality of the study in any way. Because of these flaws, the study should not be disregarded because its competency surpasses its limitations. Despite the limited amount of time allotted for the study, timetables will be created to meet its requirements, ensuring that the study has enough time to be carried out and is finished in the allotted amount of time.
To meet the project's financial needs, money will be raised from the researcher's personal savings and checking accounts. But more crucially, funds will be raised from benefactors and friends and family

1.6PURPOSE OF THE STUDY

Solid waste management has recently been a pressing issue for environmental development. As a result, it is important that the Nigerian government, waste management groups, non-governmental organizations, corporate entities, and ordinary people work together to find a long-term solution to the issue. Waste is produced when resources are fundamentally mismanaged, and this cannot be fixed by simple responses or plans because they will only shuffle the problem around. Solid waste management is a force that pulls or pushes the human or financial resources of the town as well as the entire country, therefore it always has an

impact on the residents of Lagos Municipal. This claim establishes the applicability of this study.

1.7 SIGNIFICANCE OF THE STUDY

If this research project is carried out, it will help the town of Lagos Municipal, among other things, by determining the amount to which solid waste management consequences affect the populace. This study can provide a significant contribution to the environment, society, and, in particular, the residents and/or employees of Lagos Municipal. By highlighting the poor methods in which it is being carried out and is having detrimental effects on the lives of the townspeople and the environment of Lagos Municipal as a whole, this study will shed light on the significance of solid waste management. Once more, this recommends improved techniques for managing solid waste in the study area, which will have a favorable impact on its human inhabitants and the environment.

The people of Lagos Municipal will also gain an understanding of how to avoid or reduce the production of solid waste, what types of solid waste can be recycled, how to manage solid waste to improve both their quality of life and the environment, and why it is necessary to use the best methods available.

On a larger scale, the study that will be conducted will make it possible to formulate policies that are factually accurate and to put into practice efficient techniques for managing solid waste in the town of Lagos Municipal, the city of Lagos Municipal, and Nigeria as a whole. This is so that Lagos Municipal stakeholders involved in solid waste management will have a better understanding of the subject once the study is complete, which will enhance both human and environmental well-being.

1.8 DEFINITION OF TERMS

- Waste is defined as any product or substance that has been or will be wasted and has no future use or value for the person or organization that owns it. Thus, it does not include items or substances that are utilized again or sold by the company that owns them.
- Management:The act or process of selecting how to use something is referred to as management.
- Solid waste: Any undesirable or abandoned substance is referred to as solid waste. It may consist of cloth, glass, metal, paper, and organic waste.
- Industrial area: An industrial area is one where industry makes up the majority of the land.
- Environment: the physical surroundings in which a human, an animal, or a plant exists or functions. This describes the circumstances and factors in which a specific activity—such as growth, health, advancement, etc.—of someone or something takes place.

1.9 ORGANIZATION OF THE STUDY

There are five chapters in this study endeavor. The context of the study, the problem statement, the study's objectives, the research question or hypothesis, the study's importance, its scope, its organization, and its purpose are all covered in chapter one. The literature study on the topic of the impact of solid waste management on the environment is included in Chapter 2. The third chapter covers the research technique, including the research design, population to be studied, sampling strategy, data collecting, analysis, and presentation. In chapter four, processed data from the study's field are discussed and their analysis is presented.

CHAPTER TWO

2.0 LITERATURE REVIEW

As its definition suggests, waste is a necessary component of human activity. It either results from human activity in the production process or is a byproduct of the resources that man uses. The unanticipated and detrimental impact on the generation of garbage in the urban environment has been caused by the rise in quality of life and high rates of resource consumption sequences, which is far beyond the handling capabilities of municipal governments and waste management organizations. Cities are currently battling issues related to increasing waste quantities, associated costs, disposal technologies and processes, and garbage's effects on the local and global environment(Srinivas, 2006).

The literature on solid waste management is therefore examined in this chapter. For a better grasp of what is going on in this discipline, key concepts and terminologies related to the subject will also be addressed. The conceptual framework that unifies the various ideas covered in this review will be presented at the chapter's conclusion. The definition of waste is discussed in the section that follows.

2.1 WASTE

It is simpler to define waste than to identify it. As noted by Palmer (2005, referenced by Baabereyir, 2009), "the term is frequently left as an undefined primitive in spite of its critical importance" and "frequently, a list of types of waste is substituted for the underlying definition"

Waste is defined as "unwanted or unusable materials... that originate from numerous sources from industry and agriculture as well as businesses and households... and can be liquid, solid, or gaseous in nature, and hazardous or non-

hazardous depending on its location and concentration," according to Davies (2008:4, cited by Baabereyir, 2009). Davies also pointed out that what some individuals might consider garbage, others may find valuable. Waste classification is a given according to Davies' definition. The types of garbage are displayed in the table below.

Table 2.1- Classification of wastes

Criteria for classification	**Examples of wastes**
Sources or premises of generation	Residential, commercial, industrial, municipal services, building and construction, agricultural
Physical state of waste materials	Liquid, solid, gaseous, radioactive
Material composition of waste	Organic food waste, paper and card, plastic, inert, metal, glass, Textile
Level of risk	Hazardous, non-hazardous

Source: Baabereyir, 2009

2.2 SOLID WASTE

According to Tchobanoglous et al. (1993), solid waste is any product of human or animal activity that is typically thrown away as undesirable or worthless. Solid waste is also described as "material that no longer has any value to the person who is responsible for it and is not intended to be discharged through a pipe" by The Sanitation Connection (2002). Typically, it excludes human excrement. It builds up in streets and public spaces as a result of home, commercial, industrial, healthcare, agricultural, and mineral extraction operations. To describe some types of solid

waste, the words "garbage," "trash," "refuse," and "rubbish" are frequently used. Solid waste is defined by Zerbock (2003) as non-hazardous industrial, commercial, and home waste, including household organic waste and street sweepings garbage and construction wastes.

2.2.1 Sources Of Solid Waste

Multiple sources produce solid waste. These resources speak to a community's many land uses. Solid waste sources in a community were characterized by Tchobanoglous et al. (1993) according to:

i. Residential, which comprises of solid wastes from residential areas that are both combustible and noncombustible. Materials including food waste (trash), paper, corrugated cardboard, textiles, plastics, rubber, wood, and yard wastes are among the combustibles. Items like glass, crockery, tins, cans, aluminum, ferrous metals, and dirt make up the non-combustible (inorganic) portion. The majority of household wastes are putrescible, or quickly decomposing, especially in warm conditions. These putrescible wastes result from the handling, preparation, cooking, and consumption of food.

ii. Commercial wastes are those that come from sources other than cooking and eating that are comparable to those from domestic sources.

Institutional waste is produced by government facilities like courts, schools, hospitals, and prisons. Additionally, they believed that the majority of hospitals treated medical wastes separately from the rest of the solid waste stream.

iv. They also noted the waste generated during construction and demolition projects as another source of waste. This is the consequence of remodeling individual homes, businesses, and other structures. It might once more comprise debris from demolished structures, damaged sidewalks, roadways, and bridges.

Other garbage from municipal services includes dead animals, landscaping and tree trimmings, street sweepings, municipal litter containers, abandoned automobiles, and catch basin debris.

vi.They mentioned various waste sources once more, including waste from treatment plants, industrial solid wastes, and agricultural wastes.

2.2.2 Types of Solid Waste

Tchobanoglous et al. (1993) mentioned the types of solid waste, including food waste, trash, ashes and residues, and special garbage, which has been described below.

Food loss: All animal, plant, and/or vegetable wastes—commonly referred to as garbage—that result from handling, preparing, cooking, and eating food are considered to be food wastes. The most important characteristic of this waste is that it is quite likely to decompose, especially during warm weather. Unpleasant odors frequently arise as a result of decomposition. The putrescible character of these wastes will have a big impact on how solid waste collection is designed and run in many places.

Combustible and non-combustible solid wastes from businesses, institutions, and families make up trash, according to Puopiel (2010). Food scraps and other highly putrescible items are not included in this though. Paper, cardboard, plastics, textiles, rubber, leather, wood, furniture, and yard trimmings are among the elements that make up combustible trash. In addition to glass, tins, cans, ferrous and other non-ferrous metals, and dirt, trash that is non-combustible also consists of these items.

Ashes and Residues: These are materials left over after burning wood, coal, and other combustible waste in residences, businesses, educational institutions, and industrial settings for warmth, manufacturing, and disposal.

Special waste: Special waste includes consumer electronics, roadside litter, debris, dead animals and abandoned vehicles.

2.2.3 Components of Solid Waste

The solid waste stream also includes other elements that are used to divide it into different categories, including organic and inorganic, biodegradable and non-biodegradable. For instance, inert wastes, plastic, paper, glass, ceramics, textiles, and metal (Baabereyir, 2009). According to a study conducted by Surrey County, United Kingdom, in 2002/2003 and cited by Baabereyir (2009), the County's solid waste stream was found to contain the following materials: paper/card, plastic film, dense plastic, textiles, miscellaneous combustibles, glass, ferrous metal, garden waste, and food waste.

Organic matter such as paper, wood, food waste etc. is that category of the waste stream that can decay. On the other hand, inorganic matter which is non-compostable comprises glass, rubber, plastic, leather, metal, battery and fabric among others.

The other categories of solid waste components are biodegradable and non-biodegradable. When it comes to biodegradable trash, it usually comes from plant or animal sources that can be broken down by other living things. Food waste, green waste, biodegradable plastics, paper waste, human waste, and sewage are a few examples. However, garbage that won't decompose for a very long time or at all is regarded as non-biodegradable. Metal, polymers, and glass are a few examples. Additionally non-biodegradable are toxins, hazardous compounds, plastic shopping bags, and other items of a similar nature.

next the identification of the numerous ideas related to solid waste, the full topic of solid waste management will be covered in the next part.

2.3 SOLID WASTE MANAGEMENT

In the majority of cities in developing nations, managing solid waste has grown to be a significant concern (WaterAid, 2008). If managed appropriately, solid waste may be a useful resource for both people and the environment. However, if not properly controlled, it might become a source of risks to both people and the environment. The non-governmental organization WaterAid thinks that one of the most important aspects of urban sanitation is solid waste management. The definition of solid waste management is thus called into doubt.

Solid waste management as a term has been variously defined by different scholars and authorities. As an example, the Sanitation Connection (2002,) defines solid waste management as all activities that seek to minimize the health, environmental and aesthetic impacts of solid wastes.

According to Tchobanoglous et al. (1993), a much more thorough definition of solid waste management is that discipline is related to the control of generation, storage, collection, transfer and transport, processing and disposal of solid wastes in a manner that is in accordance with the best principles of public health, economics, engineering, conservation, aesthetics and other environmental considerations and that is also responsive to public attitudes. The management of solid waste, which includes waste generation, storage, collection, transportation, processing, and disposal, is inherent to this concept. The process by which the wastes produced are handled up until they are put in storage containers is also covered here.

2.4 PROBLEMS OF SOLID WASTE MANAGEMENT

A typical solid waste management system in a developing nation, according to Ogawa (2005), exhibits a number of issues, including limited collection coverage and irregular collection services, crude open dumping, and burning without air and water pollution prevention. He divided these issues into four categories: institutional, social, technical, and financial limits. He also discussed how these limitations relate to the sustainability of solid waste in developing nations.

Technical Constraints

With the technical know-how required for solid waste management planning and operations, most developing countries lack enough human resources at both the national and local levels. Many of the individuals in charge of solid waste management, especially at the local level, have little to no technical experience or management or engineering expertise.

Financial Constraints

According to Ogawa (2005), solid waste management is only accorded a very low priority in developing nations' capitals and major cities. As a result, the governments only provide the solid waste management industry with a relatively small amount of funding, which prevents them from providing the necessary levels of services to safeguard the environment and public health. The issue is serious at the local government level where there has been insufficient growth in the local taxation system. This has, however, resulted in a deficit in the financial foundation for public services, including solid waste management. The collection of user service fees could help local governments make up for their precarious financial foundation.

Institutional Constraints

Usually, a number of organizations are at least somewhat involved in solid waste management at the federal level. Ogawa, however, noted that there are frequently no distinct tasks or responsibilities assigned to the many national agencies with regard to solid waste management, and no one committee or agency appointed to coordinate their projects and activities.

".....Due to a lack of coordination among the pertinent agencies, various agencies frequently end up serving as the national counterparts to various external support organizations for various joint solid waste management initiatives without being aware of what other national agencies are doing. As a result, efforts are duplicated, resources are wasted, and overall solid waste management programs become unsustainable.

2.5 EFFECT OF SOLID WASTE MANAGEMENT IN NIGERIA

The World Health Organization (WHO) estimates that illnesses and other problems brought on by their environments where they live, play, and learn result in the deaths of almost 5 million children aged 14 and under every year. Elliot et al. (2001) gave quantitative estimates of the higher risk of congenital abnormalities, very low birth weights, and stillbirths in the population living within 2 km of a landfill. In a draft on landfill guidelines published in 2000, the Nigerian government underlined the need of health and safety standards for avoiding unwarranted public attention on concerns related to solid waste management.

According to Hill (1997), several heavy metal by-products found in municipal solid waste incinerators have clear health impacts that have been seen in multiple studies of populations of people who have been exposed to them. While some of them are carcinogenic (cancer-causing), others can have negative impacts on people, plants, animals, and aquatic life. According to Adzoba (1989), the

Ashiaman Residential area has a high prevalence of sanitation-related diseases like cholera, typhoid, and malaria as a result of improper disposal of human waste.

There were roughly 160 municipal solid waste incinerators running in the United States by the end of 1992, with a daily capacity to burn 110,000 tons of garbage (Kreith, 1995). Although it is frequently referred to be a trash disposal technique, incineration is more appropriately regarded as a waste processing technology. Although it has the significant benefit of reducing the amount of garbage that has to be disposed of, it raises a number of issues with regard to air pollution and leaves behind a sizable weight of toxic ash residues that need to be managed and disposed of properly. Due to open landfills or unattended incinerators, a variety of pollutants may leak into the air at quantities that pose serious dangers to human health when inhaled directly. Almost all US citizens already have detectable quantities of these pollutants in their bodies, according to Kreith (1995), and in some groups, exposure levels and body loads are already in the range that is linked to deleterious effects. According to Barrow (1995), soil is destroyed when waste is burned in unmanageable disposal sites. This demonstrates the serious risks that inadequate solid waste management and other human activities pose to the ecosystem.

Concerns regarding the possible health consequences of persons living nearby certain garbage disposal sites have been focused on them. Numerous in-depth studies have been carried out both at these particular locations and across the country to determine whether waste management operations do, in fact, have any negative health effects. Both landfills and incinerators have been looked into as potential contributors to birth defects, cancer, and respiratory conditions like asthma. Dioxin missions have received a lot of attention in other studies. Composting and materials recycling facilities have been investigated for possible exposures to micro-organisms and odors, and lung diseases like bronchitis. There

is also concern about the environmental effects of facilities which deal with municipal solid waste.

CHAPTER THREE

3.0 METHODOLOGY

3.1 RESEARCH DESIGN

The study will employ a cross-sectional or social survey design to avoid interfering with respondents' daily activities. With the help of this design, data can be gathered from respondents in their natural environment without interfering with their daily activities. Additionally, it aids in the identification of differences in how the responses of the various respondents to the research problem are taken into consideration. This approach will once more allow the researcher to quantify the data that has to be collected, which will improve the effectiveness of the analysis of the problem.

3.2 TARGET GROUP

The population of the Lagos Municipal industrial area has been the focus of this investigation. There will be both adult males and females in this group. This is because each of these persons is impacted by the effects of solid waste management, making them the most reliable sources of study data.

3.3 SAMPLE SIZE

According to the Nigeria Statistical Service's 2010 population and housing census, Lagos Municipal has 1,590,675 residents. As a result, a sample of 700 respondents from the study area will be chosen, 350 of them will be adult males and 350 adult females.

3.4 SAMPLING TECHNIQUE

The simple random sample technique will be used to choose the respondents. To eliminate or significantly lessen any personal bias for the study and to ensure that every member of the community being studied has an equal chance of being chosen, the sample will be chosen at random. But this will only happen if you grant your agreement. This will guarantee that the sample being drawn accurately represents the target population

3.5 METHOD OF DATA COLLECTION

Both primary and secondary sources will be used in the data collection process. Data will be gathered from respondents in the field for the primary source using interviews and self-administered questionnaires. To augment the data gathered on the ground, journals, books, newspapers, media stories, published documents, and the internet will also be studied. These informational sources, which serve as secondary sources for this study, will be carefully examined in order to examine the opinions of other researchers and authors regarding the impact of solid waste management on the environment.

3.6 DATA ANALYSIS

THROUGH THE USE OF DESCRIPTIVE STATISTICAL METHODS, THE ACQUIRED DATA WILL BE STATISTICALLY EXAMINED. THIS WILL GIVE THE DATA ANALYSIS A MORE GRAPHICAL DEPICTION. TABLES, BAR CHARTS, AND PIE CHARTS WILL BE UTILIZED TO

VISUALLY SHOW THE DATA THAT HAS BEEN GATHERED. INFERENCES FROM THE DATA WILL BE DERIVED FROM RELATED LITERATURE. THE STATISTICAL PACKAGE FOR SOCIAL SCIENCE (SPSS) PROGRAM WILL BE USED BY THE RESEARCHER TO PROCESS THE DATA THAT HAS BEEN GATHERED.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 HOUSEHOLD SOLID WASTE DISPOSAL

Solid waste disposal is a crucial step in the management of solid waste. Positive externalities occur in proper garbage disposal because doing so helps the community as a whole in terms of health and safety. Knowing where families dispose of their domestic solid waste allows for a clear indicator of the type of management system in place for solid waste management. Figure 4.1 below depicts where households dispose of their waste.

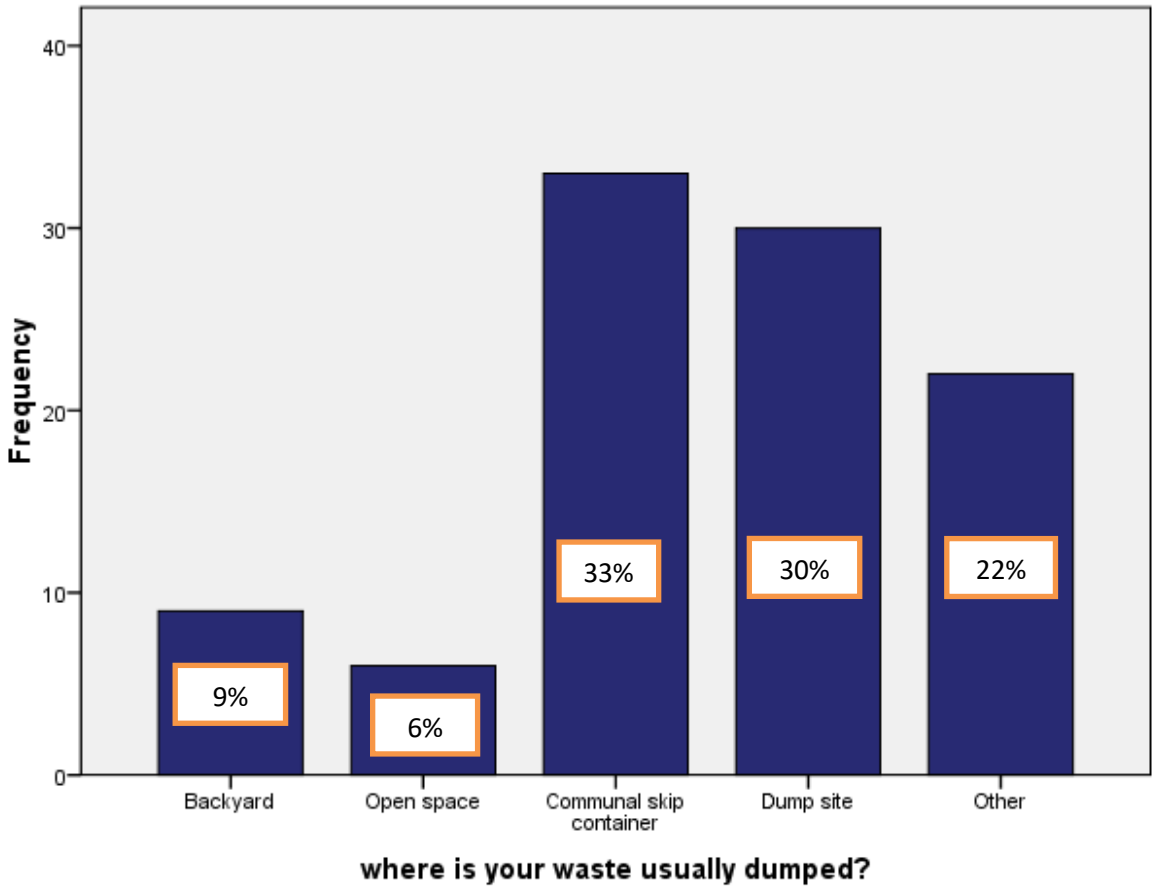

Figure 4.1 – where waste is usually dumped by households.

The graph above demonstrates unequivocally that 33% of those surveyed dispose of rubbish in a community skip container, 30% at a dumpsite, 9% in the backyard, and 6% in an open area. Additionally, 22% of respondents selected the fifth option, which was designated "other." Such respondents said that private waste management companies collect their trash.

Figure 4.2 – household solid waste disposal at dumpsite

Figure 4.3 – communal skip containers at Lagos Municipal

Figure 4.4 – waste collection bin in front of a house.

When asked if respondents dumped wastes themselves, the following data was collected:

Do you dump waste yourself?

Do you dump waste yourself?	**Frequency**	**Percentage (%)**
Always	38	38
Sometimes	30	30
Never	32	32
Total	100	100

Figure 4.5 - do you dump waste yourself?

The data shows that 32 respondents never dump waste themselves, while 30 occasionally do so. This leaves 38 respondents who always dump waste themselves. Thus, the topic of whether respondents paid for the disposal of their garbage arose. As shown in figure 4.5, 87% of respondents said "yes," which is represented by the blue color in the pie chart, while 12% said "no," which is represented by the green color. The pie chart's grey area denotes a responder who declined to choose one of the options. And that made up 1%.

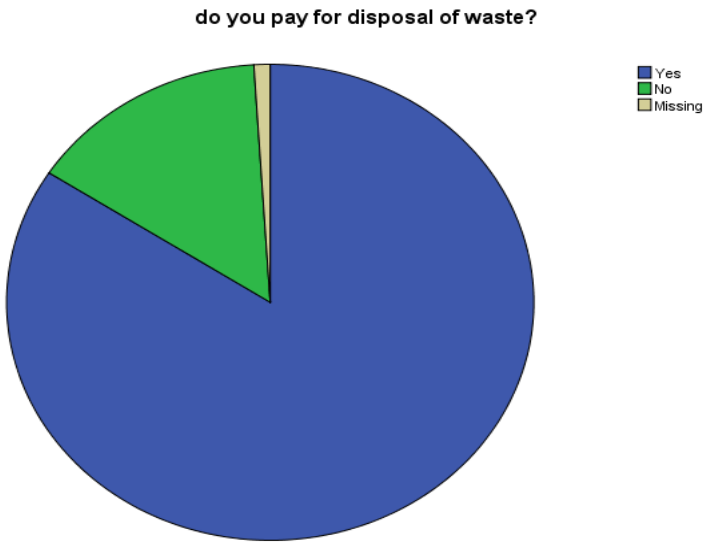

Figure 4.6 – do you pay for disposal of waste?

4.2 PRESENT SITUATION OF SOLID WASTE MANAGEMENT

Informal discussions with locals revealed that the majority of them would prefer to dispose of their waste appropriately since they deplore the annoyance the polythene threat causes. This clearly illustrates the difficulties in the local solid waste disposal process. Are there any annoyances with waste disposal in your area? was the question posed to respondents. Inconveniences in the disposal of solid waste were supported by 74% of the sample size, whereas 26% perceived nothing wrong.

The following data was gathered regarding the indiscriminate dumping of solid trash at Lagos Municipal from the 74% of respondents who believed that there were problems with solid waste disposal.

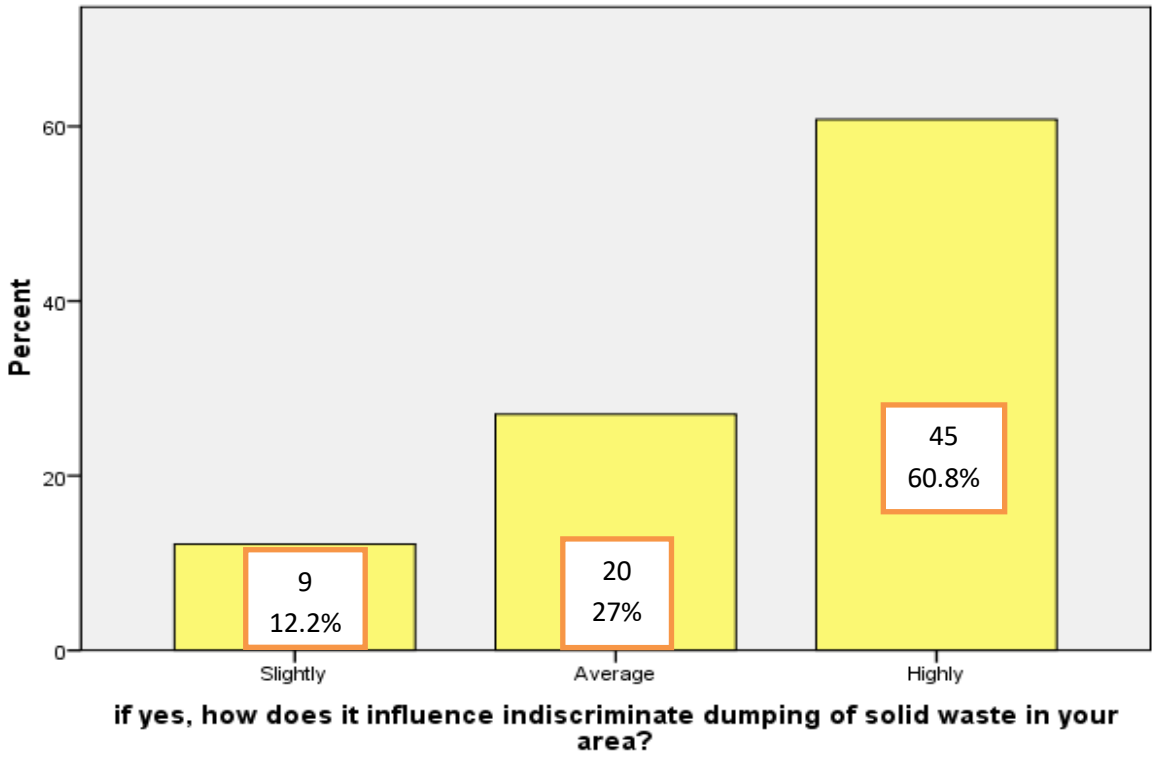

Figure 4.7 – how inconveniences affect indiscriminate dumping.

From the diagram, it can be realized that 45 respondents constituting 60.8% were of the view that inconveniences highly affect indiscriminate dumping of solid waste. 20 respondents, making up 27% were of the average view while the remaining 12.2% which are the 9 respondents were of the view that inconveniences slightly affect indiscriminate disposal of solid waste. The untidy condition of the dumpsites, the distance between the dumpsites and the respondents' homes, the availability of waste management facilities, and safety concerns, primarily as a result of the close proximity of the roads by the dumpsites, are just a few of the inconveniences that were noted in the questionnaires.

However, Lagos Municipal's annoyances cannot entirely be attributed to the careless disposal of trash. The citizens' lack of education is the other offender.

Good solid waste management, according to HamdiNabeel (2003), has a lot to do with altering habits and behavior. The only way to modify a person's ingrained mentality is through education.

Level of education	**Frequency**	**Percentage (%)**
Primary	24	24
J.H.S	25	25
S.H.S/Technical	31	31
Tertiary	11	11
None	9	9
Total	100	100

Figure 4.8 – level of education of respondents.

9% of respondents, as seen above, have never had any kind of formal schooling. Even among individuals with formal education, the percentages for primary and J.H.S. levels are 24% and 25%, respectively. These percentages are larger than those who have received further education, which results in the Lagos Municipality's indiscriminate disposal of solid garbage.

Unfortunately, 23% of the respondents in the research area said that they had received no solid waste management instruction. 20% of the respondents agreed that they receive education very frequently, while 57% of them claimed they occasionally obtain some type of education. This also relates to the indiscriminate dumping of trash in Lagos Municipal. where the communal skip containers are at acceptable walking distance from houses, some people still dispose of their waste indiscriminately.

4.3 CHALLENGES OF EFFECTIVE SOLID WASTE MANAGEMENT

The local government is crucial to the management of solid waste. The existence or absence of such an entity can influence how successfully solid waste management is carried out. Therefore, respondents were asked if they were aware of any local government policies intended to regulate the area's solid waste management.

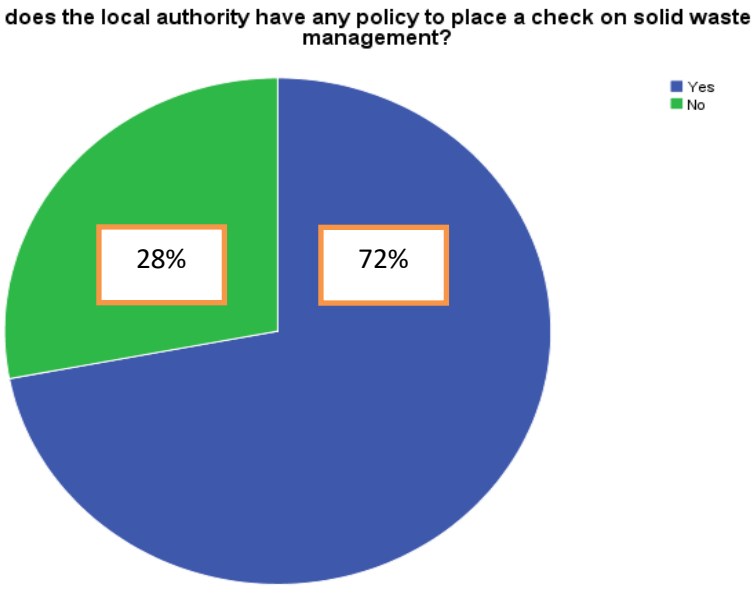

Figure 4.9 – Local authority's policy to place a check on solid waste management.

Figure 4.9 shows that while 28% of respondents were unaware of the local authority's policy to regulate solid waste management, 72% of respondents were aware of it. The color blue indicates people who hold the "yes" position, whereas the color green stands for those who hold the "no" position. Some responded that the policy was highly effective, some said it was average, and the remainder said it was only marginally effective.

Respondents were questioned about their desire for changes to the current policy in light of this. A change in the sense that the current policy should be modified,

expanded upon, or replaced altogether. In the illustration below, the views of respondents are made in the form of a chart.

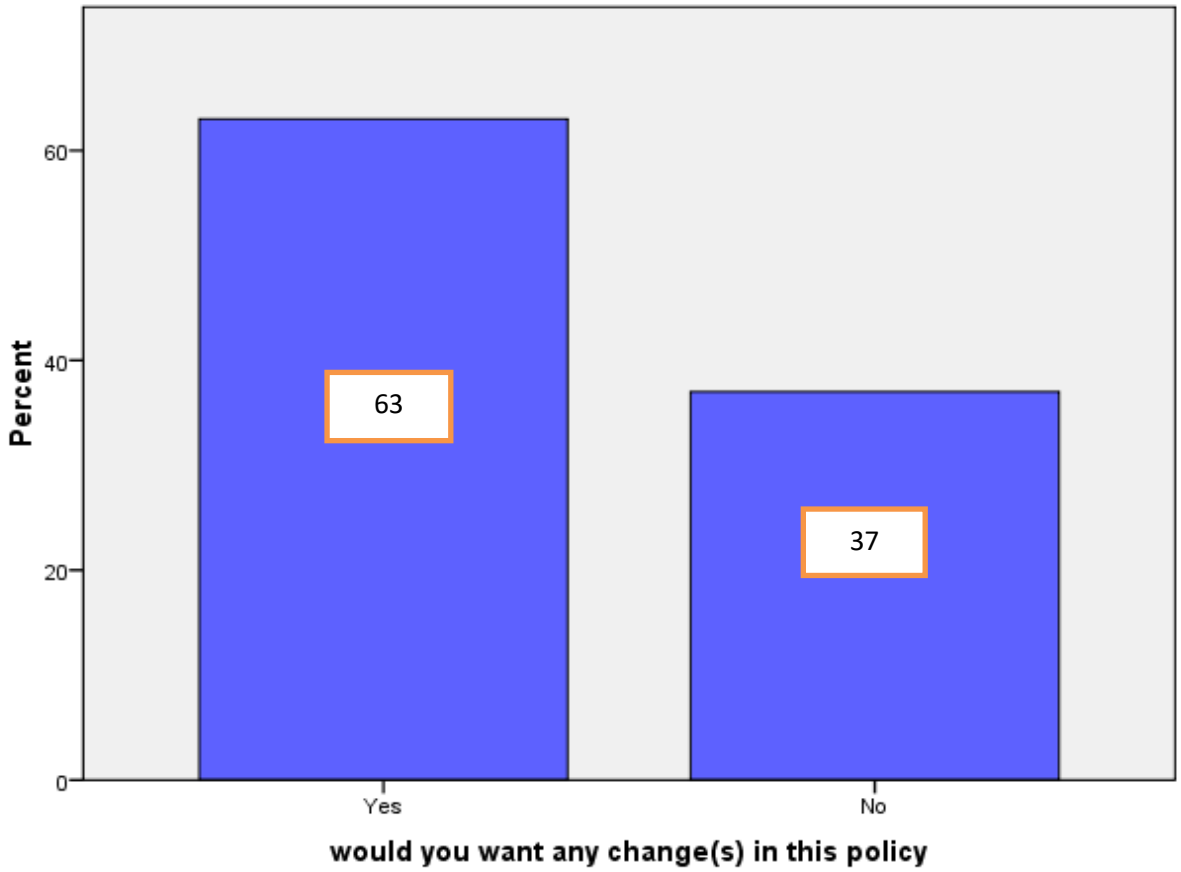

Figure 4.10 – would you want any change(s) in this policy?

As can be seen, 63% of respondents would want to see changes made to the current policy, while the remaining 37% would prefer to see no changes made to the Local Authority of Lagos Municipal's solid waste management policy.

4.4 EFFECTS OF SOLID WASTE MANAGEMENT

Solid waste management is no different from other environmental activities in that it has an impact on the local population. According to respondents, solid waste

management has a significant impact on the way of life for residents of Lagos Municipal. In the daily lives of those who live in the study region, solid waste management is quite important. The information below was gathered from respondents after they were questioned if solid waste management has any impact(s) on the residents of Lagos Municipal.

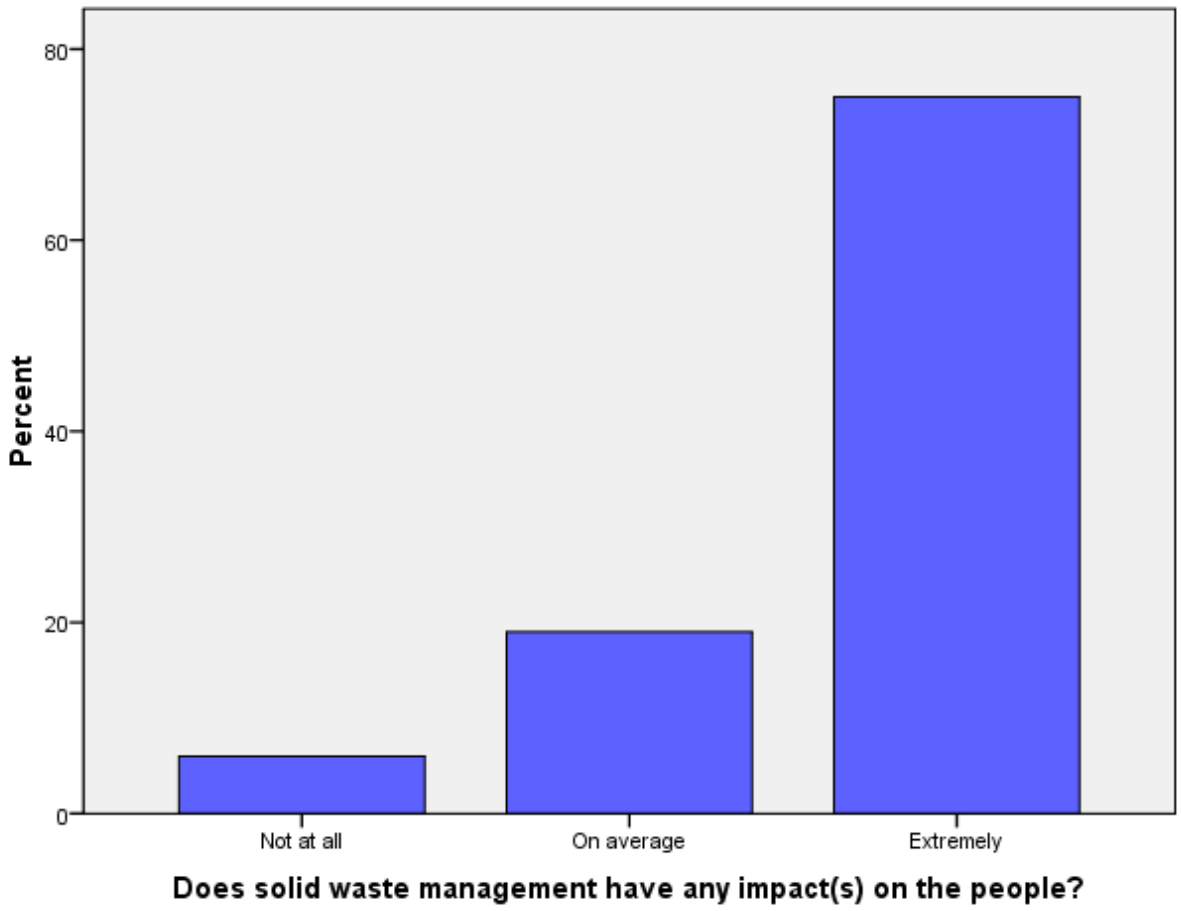

Figure 4.11 – Does solid waste management have any impact(s) on the people?

Solid waste management is no different from other environmental activities in that it has an impact on the local population. According to respondents, solid waste management has a significant impact on the way of life for residents of Lagos Municipal. In the daily lives of those who live in the study region, solid waste

management is quite important. The information below was gathered from respondents after they were questioned if solid waste management has any impact(s) on the residents of Lagos Municipal. Positive in the sense that solid waste management kept a lid on population health. It made it possible for locals to live healthy lives free from illness and early mortality brought on by diseases like diarrhea and malaria that are brought on by improper solid waste management. Additionally provides residents with paid employment options as solid waste management workers.

Others who responded believed that solid waste management had a detrimental impact on residents' quality of life. The explanation they presented was well stated but not particularly compelling. They claimed that because it is a source of income, individuals would simply discard trash carelessly because the flood of such situations would enhance job chances in this industry.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

After going through the many stages of this study, it's crucial to assess whether the goals of the study have been met at this last step. This study's primary goal was to demonstrate the impacts solid waste management has on the residents of Lagos Municipal. This study found that solid waste management is very important to how the people who live in the study area go about their daily lives. This report made specific mention of issues like job opportunities and local resident health. There are other specific goals that were taken into consideration in addition to the main goal. The second step was to look at the current solid waste management situation in Lagos Municipal, and it was discovered that difficulties with solid waste disposal led to indiscriminate dumping. Examining the barriers to the disposal of household solid waste was the study's third goal. This led to the realization that the waste collection facilities were insufficient, as were the educational levels of the locals. Finding the obstacles to a successful solid waste management system in Lagos Municipal was another goal of the study. This allowed for the discovery of the Lagos Municipal Local Authority's insufficient solid waste management strategy and the lack of solid waste management public education. The last goal that was accomplished was a result of the preceding obstacle that was noted. On this, it was discovered that Lagos Municipal inhabitants were disposing of their solid garbage carelessly.

Making suggestions for the benefits that efficient solid waste management has on Lagos Municipal residents included looking at things like improving the local government's solid waste management policy, educating residents, and providing skip bins and dustbins.

All the objectives which were set for the study have been achieved which therefore makes it key to determining the effects of solid waste management on the people of Lagos Municipal. The above recommendations are important and must be implemented to ensure effective and efficient solid waste management which will benefit the people of Lagos Municipal.

5.2 RECOMMENDATIONS

The following actions have been suggested as a way to guarantee that solid waste management is efficient and advantageous to Lagos Municipal residents. Undoubtedly, it won't be simple, but if we want to have a clear roadmap for the future and figure out how to best serve the residents of Lagos Municipal in terms of solid waste management, it's crucial that it succeeds

Education Of Residents

To improve solid waste management in Lagos Municipal, rigorous public education is essential. Some locals question the need for skip containers when they may simply put trash anywhere they like. The only way to address this issue is through education. Therefore, it is advised that the local authority work along with all stakeholders to inform Lagos Municipal inhabitants about the right methods of disposing of solid garbage. The folks might be thoroughly educated by using the neighborhood radio station, Light FM. The Information Services Department of the local authority is needed to ply their services in this respect. Unit committees and religious bodies should also make it a point to educate their members on this very important issue, as it affects their well-being. A person's habits cannot be altered in a snapshot but with persistence, there would be a breakthrough.

Provision Of Skip Containers and Dustbins.

It is suggested that more skip containers be made available to offer homeowners the chance to properly dispose of their waste after it was determined that a significant issue hindering household solid waste management in Lagos Municipal is a lack of skip containers. To provide trash management services in the settlement, an additional minimum of 10 skip containers would be required. This is an extremely conservative estimate, and it might even be more if the entire compensation is paid out. The majority of locals should be able to easily access the site if these skip containers are located within a 200-meter radius.

Given the lack of public trash cans for garbage disposal, it is advised that Lagos Municipal offer these waste facilities. This will enable people to dispose of waste in a good manner so as to rid the town of filth and associated diseases.

Improvement In the Local Authority's Policy For Effective Solid Waste Management

Although the local government has a policy in place to ensure proper solid waste management, the researcher agrees with the respondents that this policy may be improved. Although the implementation of a new policy might be beneficial, it is preferable to enhance the existing one. By eliminating the drawbacks of the current policy, better overall plans for the policy could be implemented. To combat the indiscriminate disposal of solid trash, there should be strong regulations, including penalties and fines for offenders. This would encourage individuals to properly dispose of waste, making this program effective.

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