

**SOLID WASTE SEGREGATION AMONG RESIDENTS OF EKOSODIN
COMMUNITY, OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO
STATE**

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FACULTY OF EDUCATION
UNIVERSITY OF BENIN, BENIN CITY**

FEBRUARY, 2025

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF HEALTH,
SAFETY AND ENVIRONMENTAL EDUCATION, FACULTY OF EDUCATION,
UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILMENT OF THE
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CERTIFICATION

We, the undersign certified that this project work was carried out by **OBORO, Precious Onimisi** with matriculation number EDU2001848 as partial fulfilment of the requirement of the award of Bachelor of Science BSc Ed Environmental Education University of Benin.

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DEDICATION

I dedicate this project work to Almighty God and to my parents Mr. Fatai Umoru and Mrs. Umoru Ozofu and also to my self for choosing this path.

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First and foremost, I offer my profound gratitude to Almighty God for His infinite mercy, grace, and divine protection throughout this research journey. His guidance and strength made this project possible.

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ABSTRACT

This study seeks to investigate solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State.. Four research questions were raised to guide this study. The descriptive research design was adopted for this study and random sampling technique was used to select 250 (two hundred and fifty) residents in Ekosodin Community. Data was collected from the 250 respondents using an open ended questionnaire with twenty (20) items. The data collected was analyzed and interpreted using simple frequencies, percentage, mean and standard deviation.

Based on the data collected and analyzed, it was discovered that respondents have a high level of awareness regarding solid waste segregation, respondents have adequate practices of solid waste segregation, availability of waste bins enables respondents to participate in solid waste segregation, financial incentives (e.g., rewards for recycling) motivates respondents participation in solid waste segregation, delay from waste collectors often discourage respondents in segregating solid waste, lack of enforcement of waste segregation makes respondents feel relaxed about segregating waste, and unavailability of waste collection services in their area affects respondents participation. It was recommended that the local government should provide adequate waste bins for different waste categories (organic, recyclable, and non-recyclable) at strategic locations

within the community to facilitate proper waste disposal, authorities should enforce existing waste management laws and introduce stricter regulations to ensure compliance with proper waste segregation practices. Fines and incentives can be used to encourage adherence, residents should be actively involved in waste management decision-making processes, establishing community waste management committees can help in monitoring and promoting segregation efforts, the government should collaborate with private waste management firms to enhance waste collection, recycling, and disposal efficiency within the community and recycling initiatives should be encouraged within the community, and collection centers should be established where residents can drop off recyclable materials in exchange for incentives.

CHAPTER ONE

INTRODUCTION

Background of the Study

Globally, solid waste management is still a major environmental concern, especially in developing countries where waste generation has increased due to fast urbanization and population growth. Segregation at the source, or the division of waste into categories like recyclable, non-recyclable, and biodegradable materials, is the first step towards the effective management of solid waste. According to Ogunrinola and Adewole (2021), this procedure is essential for reducing environmental contamination, preserving resources, and advancing sustainable development.

Ineffective waste segregation is a contributing factor to the inefficiency of waste management systems in many developing nations, including Nigeria. The adoption of efficient waste segregation practices is hampered by a lack of knowledge, poor infrastructure, and lax enforcement of regulations (Agunwamba, 2018; Eze & Onyekachi, 2020). For example, households frequently combine recyclables and organic waste, which increases the amount of waste that ends up in landfills and makes it more difficult to recover valuable materials. In addition to depleting land resources, this practice contributes to climate change by producing greenhouse gases like methane (Adewumi et

al., 2022). The construction of suitable waste management infrastructure does not keep pace with the sharp rise in waste generation in urban areas such as Lagos and Benin City. The absence of structured waste segregation systems has resulted in careless dumping, clogged drainage systems, and increased risks of waterborne illnesses, Uwadiogwu and Chukwu (2020). Furthermore, because there is no initial segregation, the informal waste sector which frequently depends on scavenging mixed waste is unable to effectively recover valuable materials (Ogunbuyi et al., 2019).

Waste segregation procedures are also significantly influenced by behavioral factors. It has been discovered that education and awareness initiatives have a positive impact on locals' attitudes regarding waste segregation. However, the degree to which people engage in segregation efforts is frequently determined by socioeconomic factors like income level and educational attainment. Higher-income households, for example, are more likely to practice waste segregation because they have greater access to resources and information, Akinwale and Abegunde (2021). Residents' segregation of solid waste is becoming more widely acknowledged as a fundamental component of sustainable waste management systems. Waste production has increased globally as a result of industrialization, urbanization, and shifting consumption habits, especially in developing nations' urban centers. The effectiveness of waste management procedures is severely weakened by the failure to separate waste at the source, which also leads to missed economic opportunities, health risks, and environmental degradation (Adewale &

Osinbajo, 2021). Segregation techniques can improve recycling, lessen the amount of waste dumped in landfills, and help build a circular economy one in which waste products are recycled into useful resources (Ogunleye & Fadeyi, 2020).

Nigeria's solid waste management system has many problems, such as inadequate infrastructure, lax waste policy enforcement, and low public involvement. According to a 2019 study by Olorunfemi and Idowu, Nigerian households do not frequently practice waste segregation, mainly because of a lack of easily accessible sorting facilities and low environmental awareness. As a result, the majority of waste produced in cities is either transported to poorly managed landfills or carelessly disposed of in open spaces, increasing the risks to public health and the environment. Inadequate segregation has serious negative effects on the environment and human health. Unsegregated waste contributes to the growth of dangerous pathogens by contaminating soil and water sources. In addition to endangering the quality of the air, open dumpsites, which are prevalent in many Nigerian cities, release harmful gases like methane that fuel global warming (Adedeji & Adeyemi, 2022). Furthermore, the risks are increased when hazardous waste such as batteries and electronic waste is mixed with regular waste, putting waste handlers and the community at large in danger.

Waste segregation initiatives are also hampered by financial constraints. Because of the immediate financial strains of daily life, many Nigerians consider waste segregation to be a non-essential activity (Adebayo and Alabi, 2020). Even people who might otherwise be

environmentally conscious are deterred from participating in recycling and waste sorting when there are no financial incentives. The informal waste industry, which functions in a largely unregulated environment, makes this even more difficult. The absence of pre-sorted waste makes informal waste collectors' operations inefficient, despite the fact that they are essential to resource recovery (Ezeani & Ugwuanyi, 2021). Waste segregation procedures are also impacted by behavioral inertia and cultural attitudes. According to studies, citizens frequently believe that waste management is the exclusive domain of local government officials rather than a shared duty among citizens, communities, and the government (Okoro & Nwankwo, 2020). Even in places where segregation efforts are made, inconsistent waste collection services and a lack of discernible improvements in waste management outcomes serve to further this perception.

The necessity of integrated solid waste management strategies that put source segregation first along with education, enforcement, and incentives is emphasized by international best practices. For example, nations like Germany and South Korea have effectively incorporated waste segregation systems by fusing robust legal frameworks with financial incentives and public awareness initiatives. According to Ogundipe et al. (2021), these models may offer useful insights for enhancing waste segregation among Nigerian citizens. Increased funding for waste management infrastructure, like centralized recycling facilities and bins with color coding, as well as the implementation of educational initiatives to increase public knowledge of the advantages of segregation. In

order to promote participation, government policies must also offer financial incentives and strong enforcement mechanisms. Segregation programs can be made even more effective by involving communities through grassroots organizations and collaborations with the private sector (Ajibade & Ezenwa, 2023). The potential advantages of solid waste segregation among Nigerians are enormous, despite the fact that there are significant obstacles. In the recycling and waste management industries, efficient segregation can reduce environmental risks, enhance public health, and open up business opportunities. It is possible to establish a sustainable waste management system that emphasizes segregation and supports Nigeria's larger environmental and socioeconomic development objectives by encouraging cooperation between the government, citizens, and other stakeholders.

Statement of Problem

Solid waste management is a critical issue in many developing countries, including residents of Ekosodin community, Ovia North East LGA, where urbanization, population growth, and changing consumption patterns have significantly increased waste generation. The practice of waste segregation at the source is still incredibly underutilized among Ekosodin residents, despite its acknowledged significance in lowering environmental and health risks. When recyclables are thrown in with organic and hazardous waste, waste

management procedures become inefficient and the amount of waste going to landfills or open dumpsites eventually rises (Olorunfemi & Idowu, 2019).

Inadequate waste segregation worsens environmental pollution in Ekosodin community by clogging drainage systems, contaminating water sources, and lowering soil quality. Ineffective waste segregation techniques also lead to the release of toxic gases, like methane, from poorly maintained landfills, exacerbating climate change and posing serious health hazards to the general public (Adedeji & Adeyemi, 2022). Because of the harmful effects of unsegregated waste, residents who live close to these dumpsites are especially susceptible to respiratory ailments, waterborne infections, and other health problems. Inadequate infrastructure, low public awareness, and lax enforcement of policies all contribute to the issue. The majority of locals are ignorant of the financial and environmental advantages of separating waste at the source, and many communities lack access to color-coded bins or waste collection services intended to promote segregation. Additionally, the challenge of sorting mixed waste hinders the informal waste management sector, which is essential to recycling, which lowers the overall recovery of valuable materials (Ezeani & Ugwuanyi, 2021).

Effective waste segregation is also significantly hampered by behavioral and socioeconomic factors. Many residents lack the incentive or motivation to practice segregation because they believe that waste management is the exclusive domain of municipal authorities. Low-income households are less likely to adopt waste segregation

practices because the immediate financial demands of daily life frequently take precedence over environmental concerns (Adebayo & Alabi, 2020). Despite the existence of policies and regulations aimed at facilitating efficient waste management, their implementation is still uneven and insufficient. The goal of attaining sustainable waste management through segregation will remain elusive in the absence of strong implementation strategies, such as community education, incentives for compliance, and improved infrastructure. Therefore, this study seeks to address the gap in waste segregation practices among Ekosodin residents, exploring the barriers to adoption and identifying strategies to improve segregation behaviors. By addressing this pressing issue, the study aims to contribute to sustainable waste management systems that mitigate environmental hazards, improve public health, and promote resource conservation.

Research Questions

The following research questions are raised to guide the study:

1. What is the level of awareness of solid waste segregation among residents of Ekosodin community, Ovia North East LGA?
2. What are the common practices of waste segregation among residents of Ekosodin community, Ovia North East LGA?
3. What factors influence residents' participation in solid waste segregation in Ekosodin community, Ovia North East LGA?

4. What are the challenges faced by residents in segregating solid waste in Ekosodin community, Ovia North East LGA?

Purpose of the Study

The purpose of the study is to investigate solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State. Specifically, this study seeks to;

1. Assess the level of awareness of solid waste segregation among residents of Ekosodin community, Ovia North East LGA.
2. Determine the common practices of waste segregation among residents of Ekosodin community, Ovia North East LGA.
3. Explore the factors that influence residents' participation in solid waste segregation in Ekosodin community, Ovia North East LGA.
4. Identify the challenges faced by residents in segregating solid waste in Ekosodin community, Ovia North East LGA.

Significance of the Study

This study undertaken to investigate solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State will be of immense value to policy makers, planners and all stakeholders in the environment. It will

establish the importance and effects of solid waste segregation among the residents and the factors that influences solid waste segregation among the residents.

The outcome of this study will enable policy makers and the State government to develop adequate measures towards addressing the problem of solid waste segregation in Ekosodin community and the state as well as other Nigerian cities. Also this study will provide a reference point to further studies in this area of solid waste segregation. The outcome of this study has the capability of improving measures aimed at eliminating improper waste segregation in Ekosodin community.

Scope and Delimitation of the Study

The scope of the study is focused on solid waste segregation among residents. The study is delimited to residents in Ekosodin community.

Definition of Terms

Solid Waste: This refers to discarded materials from residential, commercial, industrial, and institutional sources that are no longer useful or needed. Examples include food waste, plastics, paper, glass, metals, and hazardous waste (Adewumi et al., 2022).

Waste Segregation: The process of separating waste at the point of generation into different categories such as biodegradable, recyclable, and hazardous materials to facilitate proper disposal, recycling, or treatment (Ogunrinola & Adewole, 2021).

Biodegradable Waste: Organic waste materials that can decompose naturally through biological processes, including food scraps, garden waste, and paper (Olorunfemi & Idowu, 2019).

Recyclable Waste: Materials that can be reprocessed and used to create new products, such as plastics, metals, glass, and paper (Ezeani & Ugwuanyi, 2021).

Hazardous Waste: Waste that poses a threat to human health or the environment due to its toxic, corrosive, or flammable properties, such as batteries, medical waste, and electronic waste (Adedeji & Adeyemi, 2022).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter will be discussed under the following subheadings:

- Concept of Solid Waste Segregation
- Awareness of Solid Waste Segregation in Nigeria
- Practice of Waste Segregation in Nigeria
- Factor's Influencing Resident's Participation in Solid Waste Segregation in Nigeria
- Challenges Faced by Residents in Segregating Solid Waste in Nigeria
- Solutions to Factors Militating Against Effective Segregation of Solid Waste in Nigeria
- Summary of Reviewed Literature

Concept of Solid Waste Segregation

Solid waste segregation is the process of systematically dividing waste materials into discrete groups according to their properties, makeup, and potential for reuse, recycling, or appropriate disposal. In order to prevent environmental damage, encourage resource recovery, and protect public health, it is an essential part of efficient waste management. This practice is especially important in developing countries like Nigeria, where environmental problems are made worse by population growth, urbanization, and insufficient waste management systems (Ogunrinola & Adepoju, 2017). Solid waste in

Nigeria is frequently divided into four categories: residual, recyclable, biodegradable, and hazardous (Nnaji, 2015). Plastics, metals, paper, and glass are recyclables, whereas biodegradable waste consists of organic materials like food scraps and plant residues. Medical, chemical, and electronic waste are examples of hazardous waste that needs to be handled carefully. By facilitating efficient recycling, lowering landfill loads, and minimizing environmental pollution, proper segregation supports efficient waste management procedures.

According to research by Abila and Kantola (2013), public awareness, infrastructure support, and the enforcement of environmental laws are crucial for the success of solid waste segregation in Nigeria. There are still issues, such as a lack of public compliance, poor infrastructure, and insufficient funding, even after policies and programs like the National Environmental Sanitation Policy and other state initiatives were introduced (Adewumi et al., 2019). In Nigeria, community-based methods of waste segregation have shown promise. One way to greatly increase recycling rates and lessen the burden on landfills is to incorporate waste segregation at the source, such as in homes and schools (Agunwamba, 1998). The efficiency of segregation initiatives can also be increased through collaborations between public and private entities as well as informal waste collectors (Ogwueleka, 2009). Furthermore, encouraging a culture of waste segregation is greatly aided by environmental education. In order to inculcate appropriate waste management practices from a young age, studies by Omoleke et al. (2020) highlight the

significance of incorporating environmental awareness into the school curriculum and community programs.

Types of Solid Waste

Solid waste refers to the unwanted or discarded materials that arise from human activities, and its classification depends on the source, composition, and characteristics. Understanding the types of solid waste is crucial for effective management and disposal. Solid waste is broadly categorized into the following types:

1. **Municipal Solid Waste (MSW):** Municipal solid waste is generated from residential, commercial, institutional, and public areas. It encompasses common waste materials like paper, plastics, glass, textiles, and food scraps. According to studies by Nnaji (2015), a sizable amount of Nigeria's solid waste is municipal waste, and poor management practices pollute the environment.

2. **Industrial Waste:** Industrial processes like mining, processing, and manufacturing generate this kind of waste. Materials like chemicals, metals, packaging materials, and sludge are examples of industrial waste, which can be either hazardous or non-hazardous. According to research by Ogwueleka (2009), industrial waste presents difficulties because, if improperly managed, it can have negative effects on the environment and human health.

3. **Agricultural Waste:** Plant residues, animal dung, and agrochemicals are all examples of agricultural waste, which comes from farming operations. According to Adewumi et al. (2019), inappropriate disposal of agricultural waste frequently results in soil and water contamination in rural areas, even though some of it is biodegradable and can be turned into compost.

4. **Biomedical or Healthcare Waste:** This covers the waste produced by medical facilities like clinics, hospitals, and labs. It includes medications, bandages, syringes, and other medical supplies. Because biomedical waste is dangerous, it needs to be handled carefully to stop the spread of illnesses and infections (Ogunrinola & Adepoju, 2017).

5. **E-Waste (Electronic Waste):** Discarded electronic equipment, including computers, televisions, batteries, and cell phones, is referred to as e-waste. E-waste is growing in Nigeria as a result of the quick development of technology, which presents serious problems for waste management and recycling systems (Abila & Kantola, 2013).

6. **Construction and Demolition Waste:** The debris produced during renovation, demolition, and construction is referred to as construction and demolition waste (or CDW). Materials used in building and infrastructure projects, such as concrete, wood, metals, bricks, asphalt, gypsum, and others, are usually included in this waste. Because of its size and possible effects on the environment, such as resource depletion, land use, and greenhouse gas emissions, CDW management is essential. Strategies like waste prevention, reuse, recycling, and safe disposal are all part of effective CDW management,

which aims to reduce environmental impact and encourage environmentally friendly building methods.

7. Hazardous Waste: Hazardous waste contains toxic, flammable, or corrosive materials that can harm human health and the environment. Paint, solvents, pesticides, and some industrial byproducts are a few examples. To reduce the negative effects of hazardous waste, it is essential to manage and dispose of it effectively (Omoleke et al., 2020).

8. Biodegradable Waste: Food scraps, garden waste, and agricultural residues are examples of organic materials that make up biodegradable waste. Waste of this kind can naturally break down and be utilized to produce biogas or compost. However, incorrect handling can draw pests and produce unpleasant odors (Nnaji, 2015).

9. Non-Biodegradable Waste: Materials like plastics, metals, and glass that are difficult to break down are considered non-biodegradable waste. According to Adewumi et al. (2019), these materials frequently build up in the environment, causing pollution and necessitating recycling or appropriate disposal.

10. Household Hazardous Waste (HHW): Batteries, paints, cleaning supplies, and pesticides are examples of household hazardous waste. Ogwueleka (2009) points out that in order to guarantee proper disposal procedures for HHW in Nigeria, public awareness initiatives are necessary.

Awareness of Solid Waste Segregation in Nigeria

In Nigeria and many other developing nations, solid waste management has emerged as a major issue. The amount of solid waste produced keeps rising sharply due to population growth, urbanization, and changing consumption patterns (Abila & Kantola, 2019). The nature, scope, and shortcomings of current practices are the main topics of this review, which looks at Nigerian citizens' awareness of solid waste segregation. In order to support sustainable environmental management and lessen the strain on landfills, solid waste segregation is essential. It reduces pollution in the environment and improves resource recovery through recycling. According to studies, separating waste at the source lowers expenses related to waste processing and disposal while also increasing the effectiveness of waste management systems (Abila & Kantola, 2019). Additionally, it improves public health by lowering community exposure to pollutants and hazardous waste (Adewole, 2009).

Nature of Solid Waste Segregation in Nigeria

The process of separating waste materials at the source to enable appropriate recycling, reuse, or disposal is known as solid waste segregation. Waste in Nigeria is typically divided into three categories: hazardous, recyclable, and biodegradable. Nonetheless, segregation is frequently a casual and irregular practice (Okot-Okumu & Nyenje, 2011). In Nigeria, open dumping and burning are the most common methods of waste management. These practices not only thwart efforts at segregation but also exacerbate

environmental degradation and public health problems (Adewole, 2009). Waste segregation practices are greatly influenced by cultural and economic factors. Numerous households and communities lack the tools and expertise necessary for efficient waste sorting, according to studies. Additionally, the practice of waste segregation is hampered by the lack of infrastructure, such as accessible recycling facilities and bins with color coding (Ogunjuyigbe et al., 2017).

Nigerian regions and socioeconomic groups differ greatly in their awareness of solid waste segregation. Due in large part to greater access to government-led initiatives, media, and education, urban dwellers typically display a higher level of awareness than their rural counterparts (Adebola, 2006). But even in cities, there are still irregularities in how awareness is translated into action. According to a study by Agunwamba (1998), although many city dwellers in Nigeria recognize the value of waste segregation, structural obstacles frequently keep them from putting it into practice. Non-governmental organizations (NGOs) and educational institutions have worked to increase public awareness of waste segregation. These organizations have conducted workshops and campaigns aimed at community groups, schools, and religious institutions, highlighting the financial and environmental advantages of appropriate waste management (Oloruntade et al., 2020). Even with these initiatives, there is still a lack of general awareness, particularly in low-income and densely populated areas.

There are multiple reasons for Nigeria's solid waste segregation shortcomings. First, waste segregation at the household and community levels is not required by clear policies and regulations. Despite the introduction of programs to promote waste sorting in some cities, such as Lagos, participation rates are low and enforcement is still lax (Adewole, 2009). Secondly, municipal authorities' capacity to provide the infrastructure required for waste segregation is hampered by their financial limitations. For instance, inadequate funding frequently results in irregular and ineffective waste collection systems (Agunwamba, 1998). Segregation efforts are further complicated by the fact that the informal sector, which controls the majority of waste collection and recycling activities, functions without proper support or regulation (Ogunjuyigbe et al., 2017). Furthermore, there are major obstacles to efficient waste segregation due to public attitudes and behaviors. Many locals are hesitant to embrace proactive practices because they believe that waste management is the exclusive domain of government organizations (Adebola, 2006). Furthermore, households are less inclined to practice waste segregation when there aren't any widespread awareness campaigns or incentives in place.

Several factors hinder the widespread awareness and practice of solid waste segregation in Nigeria. These include:

Lack of Infrastructure: The absence of facilities such as separate bins for different waste types and recycling centers discourages waste segregation at the source. Ogunjuyigbe et

al. (2017) noted that inadequate infrastructure is a major impediment to effective waste management in Nigeria.

Policy and Regulatory Gaps: Although some Nigerian states, such as Lagos, have introduced policies to promote waste segregation, enforcement is often weak. This lack of stringent regulations and penalties undermines efforts to ensure compliance (Adewole, 2009).

Cultural and Behavioral Factors: Public attitudes towards waste management significantly influence segregation practices. Many Nigerians view waste disposal as the sole responsibility of government agencies, leading to apathy in adopting proactive measures. Adebola (2006) emphasized that changing public attitudes is essential for improving waste segregation practices.

Economic Constraints: Financial limitations faced by households and local governments further complicate the situation. Municipal authorities often struggle to allocate sufficient resources for waste management programs, while low-income families may prioritize immediate needs over environmental concerns (Agunwamba, 2018).

Informal Sector Dominance: The informal waste sector plays a significant role in Nigeria's waste management landscape. While this sector contributes to recycling efforts, its unregulated nature poses challenges for coordinated waste segregation systems (Ogunjuyigbe et al., 2017).

However, in order to address this challenges, multi-stakeholder initiatives have been suggested and, in certain situations, put into action to address these issues. Campaigns to raise public awareness of the advantages and practices of waste segregation are backed by collaborations between the public and private sectors. Environmental education is becoming more and more integrated into the curricula and outreach initiatives of schools and community-based organizations (Oloruntade et al., 2020). Furthermore, using social media and technology has been successful in expanding one's audience. Digital ads emphasizing the financial and environmental benefits of waste segregation have become popular, especially with younger audiences.

Practice of Waste Segregation in Nigeria

Waste segregation, which is the methodical division of waste into various categories to enable recycling, reuse, or safe disposal, is an essential part of efficient waste management. Waste segregation is still a relatively new practice in Nigeria, where a number of obstacles prevent its broad implementation. Using information from academic studies and reports, this review examines the waste segregation practice in Nigeria, highlighting its current status, important motivators, and implementation challenges.

Nigerian waste segregation practices are generally patchy and frequently restricted to particular cities or private projects. According to studies, the majority of Nigerian homes and businesses discard their waste without classifying it as hazardous, recyclable, or

biodegradable (Abila & Kantola, 2019). Rather, waste is routinely mixed and dumped in open areas, increasing the risks to the environment and human health. Some attempts have been made to promote waste segregation in major cities like Lagos, Abuja, and Port Harcourt. To help with source segregation, the Lagos State Waste Management Authority (LAWMA), for example, has implemented color-coded bins, focusing on residential areas and educational institutions (Adewole, 2009). Nevertheless, these programs are not applied consistently throughout the nation, and their effectiveness is constrained by low public involvement and lax enforcement.

In Nigeria, workers in the unorganized sector such as waste pickers and recyclers are crucial to the segregation of waste. These workers recover recyclable materials like paper, metals, and plastics by manually sorting mixed waste at dumpsites. Although this helps with recycling, it is a dangerous and ineffective procedure that highlights the absence of official waste segregation systems (Agunwamba, 2008). Some communities and organizations have adopted waste segregation practices as a result of growing awareness of the negative environmental effects of improper waste disposal. The advantages of segregation, especially in urban areas, have been emphasized by educational campaigns and workshops run by NGOs and local governments (Oloruntade et al., 2020). Also, recycling businesses and initiatives provide financial incentives for waste segregation. Households and businesses that segregate recyclables can sell materials such as plastics and metals to recycling firms, creating a source of income (Ogunjuyigbe et al., 2017).

Also, policies introduced by some state governments have begun to encourage waste segregation. For example, Lagos State's Clean-Up Initiative mandates waste sorting in certain neighborhoods, although compliance remains limited (Adewole, 2009).

Barriers to Effective Waste Segregation Practice

Even though waste segregation is acknowledged to be important, there are a number of obstacles that prevent its widespread practice in Nigeria:

Lack of Infrastructure: One major barrier is the lack of essential infrastructure, such as recycling facilities, segregated trash cans, and effective waste collection systems. Many Nigerian communities do not have access to facilities that facilitate waste segregation, according to Ogunjuyigbe et al. (2017).

Weak Enforcement of Policies: Enforcement of waste segregation policies is uneven, despite the introduction of such policies by certain states. According to Adewole (2009), regulatory efforts are frequently hampered by a lack of funding and corruption.

Cultural and Behavioral Factors: Public attitudes towards waste management are a critical barrier. Many Nigerians view waste disposal as the responsibility of government authorities, showing little interest in proactive practices like segregation (Adebola, 2006).

Economic Constraints: Adoption of segregation practices is hampered by financial constraints at the household and local levels. While municipal officials find it difficult to

provide funding for waste management initiatives, low-income households might put their immediate needs ahead of environmental concerns.

Increasing public knowledge about the environmental, economic, and health benefits of waste segregation can foster behavioral change. Schools, religious organizations, and community groups can serve as platforms for disseminating this information (Oloruntade et al., 2020). Governments and private investors can also prioritize the provision of infrastructure, including color-coded bins, recycling centers, and efficient waste collection systems. Also, policies mandating waste segregation should be backed by robust enforcement mechanisms. Penalties for non-compliance and incentives for adherence can motivate both individuals and organizations to adopt segregation practices (Adewole, 2009). Also Integrating informal waste pickers into formal waste management systems can enhance segregation efforts while providing safer working conditions and stable incomes.

Factor's Influencing Resident's Participation in Solid Waste Segregation in Nigeria

Residents' participation in solid waste segregation is impacted by a number of elements, including the socioeconomic, cultural, policy, and infrastructure aspects. Waste segregation procedures are either encouraged or discouraged by these factors for both people and households. This review outlines the main elements affecting Nigerian citizens' involvement in solid waste segregation.

1. Awareness and Knowledge Levels: One crucial element is knowledge of the significance and advantages of solid waste segregation. Participation is more likely among residents who are aware of the benefits waste segregation offers to the environment, human health, and the economy (Oloruntade et al., 2020). Public awareness is raised in large part through educational initiatives, media outreach, and school activities. Nonetheless, research indicates that awareness is still poor in many Nigerian regions, especially in rural areas, which restricts participation (Adebola, 2006).

2. Economic Incentives: Waste segregation behavior is strongly influenced by economic rewards. Participation is typically higher in places where locals can sell separated recyclables, like paper, metals, and plastics, to recycling businesses (Ogunjuyigbe et al., 2017). Residents would not perceive much motivation to put in the extra work to separate waste, though, if there are no such incentives. In many areas, the absence of easily accessible markets for recyclables deters participation even more.

3. Infrastructure and Accessibility: Residents' capacity to adopt waste segregation is directly impacted by the availability of infrastructure, such as recycling facilities, collection centers, and bins with color coding. One major obstacle in many Nigerian communities is inadequate or badly maintained waste disposal infrastructure (Agunwamba, 1998). For instance, because of logistical difficulties, residents in locations without close recycling facilities or segregated collection services are less likely to participate.

4. Cultural and Behavioral Norms: Participation in segregation techniques is influenced by social conventions and cultural views on waste management. Many Nigerian communities have a passive attitude toward garbage segregation because they believe that municipal agencies are solely responsible for disposing of waste (Adewole, 2009). Furthermore, without consistent education and assistance, it is challenging to break bad habits developed over years of disposing of waste without segregation.

5. Socio-Economic Status: Participation in trash segregation is influenced by socioeconomic characteristics like occupation, income, and education. Due to their greater access to resources, infrastructure, and information, residents with higher incomes and higher levels of education are typically more likely to practice waste segregation (Oloruntade et al., 2020). Low-income households, on the other hand, can put their immediate survival requirements ahead of environmental concerns.

6. Policy and Regulatory Framework: Participation rates are greatly impacted by the presence of laws requiring trash segregation and their implementation. Although states like Lagos have implemented laws promoting trash segregation, compliance is nevertheless limited by lax enforcement (Adewole, 2009). The problem is made worse by the lack of national-level regulations and guidelines.

7. Convenience and Effort: Convenience is a major factor in residents' willingness to participate in garbage segregation. Participation is discouraged by complicated or time-

consuming segregation criteria. Participation rates can be raised by streamlining segregation procedures and making collection locations easily accessible (Agu, 2019).

8. Community Engagement and Peer Influence: Peer pressure and community-based programs are powerful drivers of waste segregation. Waste segregation is more likely to be actively practiced and promoted by neighbors, community leaders, or organizations. Participation has been successfully increased by grassroots projects that promote group action (Adebola, 2006).

9. Perceived Effectiveness of Waste Management Systems: Residents' inclination to separate waste is influenced by their level of faith in the effectiveness of waste management systems. Residents may believe their efforts are in vain and choose not to use segregation methods if separated waste is later combined during collection or if recycling systems are inefficient (Ogunjuyigbe et al., 2017).

Challenges Faced by Residents in Segregating Solid Waste in Nigeria

In Nigeria, ineffective waste segregation and disposal practices are a major problem with solid waste management. Minimizing environmental damage and advancing sustainability require effective solid waste management techniques, including waste segregation. However, implementing these principles is fraught with difficulties for Nigerians. Residents' opinions and actions toward garbage segregation are greatly influenced by sociocultural influences. According to studies, one of the biggest obstacles

is a lack of knowledge and instruction regarding the advantages of waste segregation (Ogwueleka, 2009). Many Nigerians take a passive approach to garbage segregation because they believe that government entities are the only ones responsible for waste management (Adewole, 2009). Additionally, individual responsibility for trash segregation is discouraged by cultural norms and behaviors, such as communal garbage disposal systems (Ajani, 2021).

Furthermore, residents' capacity to separate solid trash is severely hampered by economic issues. Households that are poor or have low incomes are less likely to prioritize trash segregation (Olanrewaju & Ilemobade, 2009). Many locals don't have the money to buy separate trash cans or other equipment needed for efficient segregation. Furthermore, the lack of financial rewards for waste segregation deters involvement (Bello et al., 2016). Segregation attempts are further complicated by the informal trash industry, which controls waste management in Nigeria and gives preference to recyclables over thorough garbage sorting (Nzeadibe & Anyadike, 2012). Solid waste segregation problems are also made worse by inadequate institutional structures and regulations. Residents' compliance is weakened by the absence of explicit rules and enforcement procedures for trash segregation (Agwu, 2012). Furthermore, inconsistent garbage collection schedules and the mixing of segregated waste during transit are frequently the results of inadequate coordination among waste management authorities (Okot-Okumu & Nyenje, 2011). Residents become distrustful and disillusioned with the efficacy of segregation attempts

as a result of these institutional failures. One of the biggest obstacles to solid waste segregation in Nigeria is inadequate infrastructure. There are insufficient trash cans, recycling facilities, and waste collection locations in many urban and rural regions (Momoh & Oladebeye, 2010). Residents are forced to mix and discard rubbish carelessly due to this shortage. Additionally, the effective collection and conveyance of separated garbage is hampered by the state of roads and transportation networks (Abila & Kantola, 2013). Even determined residents find it difficult to practice efficient waste segregation in the absence of adequate infrastructure.

Waste management practices are significantly shaped by governance and policy. However, in Nigeria, efficient waste segregation is hampered by disjointed legislation and inadequate enforcement mechanisms (Adebola, 2006). Government programs frequently lack the financial resources and political will needed to carry out long-term fixes. Furthermore, the issue is made worse by corruption and poor use of funds intended for trash disposal (Onibokun 2017). Waste segregation initiatives are sometimes hampered by behavioral variables, such as indifference and reluctance to change. Because of convenience and long-standing customs, many locals are reluctant to embrace new waste management techniques (Adeoye et al., 2014). Planning for waste management is made more difficult by the "not-in-my-backyard" mentality, which opposes garbage disposal facilities close to households (Ogunrinola & Adepoju, 2011).

Solutions to Factors Militating Against Effective Segregation of Solid Waste in Nigeria

Although it still confronts several obstacles in Nigeria, solid waste segregation is nevertheless an essential part of efficient waste management. An integrated strategy that includes infrastructure development, public awareness campaigns, regulatory reform, financial incentives, and behavioral adjustments is needed to remove these obstacles. This review summarizes the body of research on workable ways to lessen the obstacles to efficient solid waste segregation in Nigeria.

1. Enhancing Public Awareness and Education: Increasing public knowledge is essential to promoting efficient waste segregation. Research highlights the significance of educational initiatives that educate locals about the financial and environmental advantages of garbage separation (Ogwueleka, 2009). A culture of waste consciousness has been successfully fostered by community-based activities like workshops, neighborhood gatherings, and school outreach programs (Momoh & Oladebeye, 2010). Waste segregation can become a common practice by utilizing social media and mass media to further spread these ideas (Agwu, 2012).

2. Policy and Institutional Reforms: To improve waste segregation efforts, strong institutional support and policy frameworks are necessary. Regulations that require waste segregation at the source that are both clear and enforced can greatly improve compliance (Adebola, 2006). According to Okot-Okumu and Nyenje (2011), effective monitoring

and enforcement measures, such as sanctions for non-compliance, promote adherence to segregation rules. Furthermore, an organized approach to waste management is ensured by incorporating trash segregation into urban planning and governance (Olanrewaju & Ilemobade, 2009).

3. Infrastructure Development: Waste segregation is made possible in large part by infrastructure. To guarantee that households can efficiently separate their garbage, sufficient trash cans, sorting facilities, and recycling facilities must be provided (Abila & Kantola, 2013). Segregated waste can be collected and transferred efficiently thanks to investments in logistics and transportation networks. Automated sorting facilities and waste-to-energy plants are examples of modern technical solutions that can reduce inefficiencies and supplement manual segregation efforts (Momoh & Oladebeye, 2010).

4. Economic Incentives: Communities and individuals might be encouraged to practice waste segregation through financial incentives. The implementation of a "pay-as-you-throw" system, in which families pay according to the quantity of unsorted waste, has proven successful in other nations and may be modified for the Nigerian setting (Bello et al., 2016). Regardless of financial situation, larger involvement is ensured by subsidizing or giving low-income homes free segregation bins. Additionally, a more thorough and inclusive waste management approach is made possible by integrating the informal trash sector into formal systems, which benefits waste pickers as well as society at large (Nzeadibe & Anyadike, 2012).

5. Behavioral Change Strategies: For waste segregation techniques to be sustainable, behavioral changes must be promoted. Similar situations have demonstrated the effectiveness of social marketing initiatives that highlight the advantages of trash segregation for individuals and the society (Adeoye et al., 2014). Gamification strategies encourage healthy competition and sustained participation, such as rewarding communities or individuals for exceptional segregation efforts. These behavioral changes are further reinforced by waste management personnel and community leaders participating in capacity-building initiatives (Ajani, 2021).

6. Strengthening Public-Private Partnerships (PPPs): Waste segregation cost and logistical issues can be resolved through public-private partnerships (PPPs). Through PPPs, governments can effectively reduce waste by utilizing the resources and experience of the private sector (Adebola, 2006). When the private sector actively participates in garbage segregation projects, successful PPP models in Lagos and other cities have shown the potential for better service delivery (Ogunrinola & Adepoju, 2011).

7. Technological Innovations: Nigerian trash segregation initiatives could be completely transformed by implementing technology-driven solutions. Other contexts have demonstrated the effectiveness of mobile applications for tracking collection schedules, reporting waste management difficulties, and teaching people about segregation norms (Abila & Kantola, 2013). Advanced waste-processing technologies, such as composting

for organic waste and pyrolysis for plastics, can enhance the efficiency of segregation and recycling systems (Momoh & Oladebeye, 2010).

8. Community Participation and Stakeholder Engagement: For waste segregation initiatives to be successful, community involvement is essential. Local accountability and ownership can be guaranteed by forming community-based trash management committees (Agwu, 2012). The success of trash segregation initiatives is increased when stakeholders, such as citizens, companies, and local government representatives, are involved in decision-making processes. This promotes trust and collaboration (Olanrewaju & Ilemobade, 2009).

Summary of Reviewed Literature

The awareness of solid waste segregation among Nigerian residents is gradually increasing but remains limited in scope and practice. While urban residents exhibit relatively higher levels of awareness, systemic challenges such as inadequate infrastructure, weak policy enforcement, and financial constraints hinder the widespread adoption of segregation practices. Addressing these lapses requires a multi-faceted approach, including robust public awareness campaigns, investments in waste management infrastructure, and the integration of formal and informal waste sectors. Only through concerted efforts can Nigeria make significant progress toward sustainable waste management. Furthermore, the practice of waste segregation in Nigeria is

gradually gaining attention but remains constrained by systemic challenges. Addressing these issues requires a concerted effort involving public education, infrastructural investment, policy reform, and collaboration between formal and informal sectors. With sustained commitment, Nigeria can achieve significant progress in waste management, contributing to environmental sustainability and public health.

The challenges faced by residents in segregating solid waste in Nigeria are multifaceted, stemming from socio-cultural, economic, institutional, infrastructural, and behavioral factors. Addressing these barriers requires a comprehensive approach that includes public education, economic incentives, infrastructural development, and robust policy enforcement. Future research should focus on developing context-specific strategies to overcome these challenges and promote sustainable waste management practices in Nigeria. Addressing the factors militating against effective waste segregation in Nigeria requires a holistic approach that integrates education, policy reform, infrastructure development, economic incentives, and behavioral change. Leveraging public-private partnerships, technological innovations, and community participation further enhances these efforts. While significant challenges remain, implementing these solutions can pave the way for sustainable waste management practices in Nigeria.

CHAPTER THREE

METHODOLOGY

This chapter describes the method and procedure used by the researcher in conducting the study. It is presented under the following subheadings:

- Design of the Study
- Population of the Study
- Sample/Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

The Descriptive Survey research design was adopted for this study: according to Omoroguiwa (2006), Descriptive survey research design is one in which a group of people or term is studied by collecting data from only a few people or item considered to be representative of the entire group. The descriptive survey research design is interested in the accurate assessment of the characteristic of the entire population through the study of a sample considered to be representatives of the population.

Population of Study

The population of the study was 45,000. This comprised of all the people residing in Ekosodin. It is made of indigenes and mostly students as it is a student area. (Ovia North East LG Council)

Sample and Sampling Technique

The sample size for this study was 250 residents representing 0.56% of the total population. The simple random sampling technique was used to select respondents for this study.

Research Instrument

The Instrument for this study was the open ended questionnaire, comprising of 20 items which was used to elicit information from respondents. The questionnaire was divided into two sections. Section A and B. Section A covered the demographic data of the respondents while section B consisted of items related to the research questions. A four point scoring scale drawn along the modified Likert summated rating scale for measurement and multiple choice items was adopted.

Validity of the Instrument

The content validity of the instrument was established by the Supervisor and two experts from the Department of Health, Safety and Environmental Education, university of Benin.

Their inputs and correcting in terms of clarity and appropriateness of language was used to develop the final draft.

Reliability of the Instrument

To determine the reliability of the instrument, the test-retest method of establishing the reliability of an instrument was used. Consequently, the constructed instrument was administered on a group of twenty (20) respondents outside Ekosodin within an interval of two weeks. The reliability coefficient is 0.76 and was determined using the Pearson's Product Moment Correlation.

Method of Data Collection

The Researcher personally administered the instrument to the respondents. The questionnaire was completed by the respondents and personally retrieved by the researcher.

Method of Data Analysis

The method employed in the analysis of the data collected for the study was the frequency and simple percentage. Tables were used for easy calculation and interpretation.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

This chapters deals with the presentation, analysis and interpretation of findings based on the data collected from respondents in relation to the research questions guiding the study. Four research questions were raised to guide the study. Out of these research questions, twenty items were generated and presented in a questionnaire form and it was administered to 250 respondents for their response. The results of the respondents are carefully analyzed and presented in the following tables below.

Research Question 1: What is the level of awareness of solid waste segregation among residents of Ekosodin community, Ovia North East LGA?

-Table 1: Respondents Level of Awareness of Solid Waste Segregation

S/N	ITEMS	SA (%)	A (%)	D (%)	SD (%)	TOTAL
1	Separating waste at the source lowers expenses related to waste processing and disposal while also increasing the effectiveness of waste management systems	83 33.2%	71 28.4%	33 13.2%	63 25.2%	250 (100%)
2	Solid waste segregation improves public health by lowering community exposure to pollutants and hazardous waste	44 17.6%	78 31.2%	58 23.2%	70 28%	250 (100%)
3	Solid waste segregation is the sorting of waste into recyclable and non-recyclable materials	91 32.5%	73 26.1%	51 18.2%	35 12.5%	250 (100%)
4	Environmental pollution is reduced through solid waste segregation	65 26%	120 48%	32 12.8%	33 13.2%	250 (100%)
5	Solid waste segregation is every individual's responsibility to sustain and preserve the environment	33 13.2%	75 30%	48 19.2%	94 37.6%	250 (100%)

Source: Field Survey 2025

Table 1 depicts the respondents level of awareness of solid waste segregation. From the table above in item 1, majority of the respondents 154 (61.6%) agreed that separating waste at the source lowers expenses related to waste processing and disposal while also increasing the effectiveness of waste management systems. In item 2, majority of the respondents 128 (51.2%) disagreed that solid waste segregation improves public health by lowering community exposure to pollutants and hazardous waste. In item 3, majority of the respondents, 164 (65.6%) agreed that solid waste segregation is the sorting of waste into recyclable and non-recyclable materials. Also in item 4, majority 185 (74%) also agreed that environmental pollution is reduced through solid waste segregation. And finally in item 5, majority of the respondents, 142 (56.8%) agreed that solid waste segregation is every individual's responsibility to sustain and preserve the environment. Therefore, from the import of data from table 1 above on the respondents level of awareness of solid waste segregation, it can be categorically inferred that the respondents have a high level of awareness regarding solid waste segregation.

Research Question 2: What are the common practices of waste segregation among residents of Ekosodin community, Ovia North East LGA?

Table 2: Common Practices of Waste Segregation Among the Respondents

S/N	ITEMS	SA	A	D	SD	TOTAL
		(%)	(%)	(%)	(%)	
6	I dispose my solid waste in the waste bin in my home	120	85	15	30	250
		48%	34%	6%	12%	(100%)
7	After sorting out my waste, I usually burn them	76	99	24	51	250
		30.4%	39.6%	9.6%	20.4%	(100%)
8	I bury my waste after sorting them out	23	41	54	132	250
		9.2%	16.4%	21.6%	52.8%	(100%)
9	I dump my waste in open spaces	75	89	38	48	250
		30%	35.6%	15.2%	19.2%	(100%)
10	I engage in community-led waste segregation activities	41	66	57	86	250
		16.4%	26.4%	22.8%	34.4%	(100%)

Source: Field Survey 2025

Table 2, depicts the common practices of solid waste segregation among the respondents. From item 6, majority of the respondents 205 (82%) agreed to disposing their solid waste in the waste bin in their home. In item 7, majority of the respondents, 175 (70%) agreed to burning their waste after sorting them out. In item 8, majority of the

respondents 186 (74.4) disagreed to burying their waste. In item 9, majority of the respondents 164 (65.6%) agreed to dumping their waste in open spaces and finally in item 10, majority of the respondents 143 (57.2%) disagreed to engaging in community-led waste segregation activities.

Therefore from table 2 above on the common practices of solid waste segregation among the respondents, it can be inferred that; majority of the respondents dispose their solid waste in the bin, majority also burn their waste after sorting them, majority also dump their waste in open spaces and majority of the respondents do not engage in community led waste segregation activities. This shows that the respondents have adequate practices towards solid waste segregation.

Research Question 3: What factors influence residents’ participation in solid waste segregation in Ekosodin community, Ovia North East LGA?

Table 3: Respondents view on factors influencing residents’ participation in solid waste segregation

S/N	ITEMS	SA (%)	A (%)	D (%)	SD (%)	TOTAL
11	The availability of waste bins enables me to participate in solid waste segregation	86 34.4%	79 31.6%	38 15.2%	47 18.8%	250 (100%)
12	Financial incentives (e.g., rewards for recycling) motivates my participation in solid waste segregation	83 33.2%	69 27.6%	42 16.8%	56 22.4%	250 (100%)
13	The attitude of my neighbors and community members influence my participation in solid waste segregation	10 4%	81 32.4%	34 13.6%	125 50%	250 (100%)
14	The strict enforcement of segregation laws in Ekosodin is the reason why I participate	114 45.6%	86 34.4%	28 11.2%	22 8.8%	250 (100%)
15	Environmental concerns such as reducing pollution motivates my participation	51 20.4%	68 27.2%	84 33.6%	47 18.8%	250 (100%)

Source: Field Survey 2025

Table 3 depicts the respondents view on factors influencing residents' participation in solid waste segregation. From item 11, majority of the respondents, 165 (66%) agreed that the availability of waste bins enables them to participate in solid waste segregation. In item 12, majority of the respondents, 152 (60.8%) agreed to financial incentives such as reward for recycling being a motivation for their participation in solid waste segregation. In item 13, majority of the respondents, 159 (63.6%) disagreed to the attitude of their neighbors and community members influencing their participation in solid waste segregation. In item 14, majority of the respondents, 200 (80%) agreed to the strict enforcement of segregation laws in Ekosodin is the reason why they participate and in item 15, majority of the respondents 135 (52.4%) disagreed to environmental concerns such as reducing pollution motivates their participation.

Therefore, from table 3 on the factors influencing residents' participation in solid waste segregation, it can be categorically inferred that; availability of waste bins, financial incentives such as rewards for recycling, strict enforcement of segregation laws are the factors influencing resident's participation in solid waste segregation.

Research Question 4: What are the challenges faced by residents in segregating solid waste in Ekosodin community, Ovia North East LGA?

Table 4: Respondents view on the challenges faced by residents in segregating solid waste

S/N	ITEMS	SA (%)	A (%)	D (%)	SD (%)	TOTAL
16	I am very occupied and lack the time to dispose my waste	56 22.4%	120 48%	59 23.6%	15 6%	250 (100%)
17	The delay from waste collectors often discourage me in segregating solid waste	92 36.8%	76 30.4%	48 19.2%	34 13.6%	250 (100%)
18	Lack of enforcement of waste segregation makes me feel relaxed about segregating waste	67 26.8%	110 44%	44 17.6%	29 11.6%	250 (100%)
19	My inadequate knowledge or training on how to properly segregate waste affects my participation	23 9.2%	45 18%	99 39.6%	83 33.2%	250 (100%)
20	Unavailabilty of waste collection services in my area affects my participation	81 32.4%	104 41.6%	42 16.8%	23 9.2%	250 (100%)

Source: Field Survey 2025

Table 4 above depicts the challenges faced by residents in segregating solid waste. From item 16, majority of the respondents 176 (70.4%) agreed to being very occupied and lacking the time to dispose their waste. In item 17, majority of the respondents 168

(67.2%) also agreed to the delay from waste collectors discouraging them in segregating their solid waste. In item 18, majority of the respondents 177 (70.8%) also agreed that the lack of enforcement of waste segregation makes them feel relaxed about segregating solid waste. In item 19, majority of the respondents 182 (72.8%) disagreed to inadequate knowledge or training on how to properly segregate waste as a challenge that affects their participation and finally 185 (74%) representing majority of the respondents agreed to unavailability of waste collection services in their area as a challenge that affects their participation.

Therefore from the import of data from table 4 on the challenges faced by residents in segregating solid waste, it can be inferred that; lack of time to segregate solid waste due to engagements, delay from waste collectors, lack of enforcement of waste segregation and unavailability of waste collection services are the challenges faced by residents in segregating solid waste.

Discussion of Findings

On the respondents level of awareness of solid waste segregation, findings from this study revealed that the respondents have a high level of awareness regarding solid waste segregation. According to (Adebola, 2006), Nigerian regions and socioeconomic groups differ greatly in their awareness of solid waste segregation. Due in large part to greater access to government-led initiatives, media, and education, urban dwellers typically display a higher level of awareness than their rural counterparts. The findings of the study is contrasted by studies from (Oloruntade et al., 2020), whose findings revealed that even with adequate initiatives on the importance of solid waste segregation, there is still a lack of general awareness, particularly in low-income and densely populated areas. Also studies by (Kelvin, 2021) contrasted the findings of this study whose studies revealed that public awareness is raised in large part through educational initiatives, media outreach, and school activities. Nonetheless, research indicates that awareness is still poor in many Nigerian regions, especially in rural areas, which restricts participation.

Furthermore, the findings of this study on the premise of the second research question poised on the common practices of solid waste segregation among the respondents, revealed that majority of the respondents dispose their solid waste in the bin, majority also burn their waste after sorting them, majority also dump their waste in open spaces and majority of the respondents do not engage in community led waste segregation activities which showed that the respondents have adequate practices of solid waste

segregation which is in contrast to studies by Abila & Kantola (2019), whose studies revealed that Nigerian waste segregation practices are generally patchy and frequently restricted to particular cities or private projects. According to their studies, the majority of Nigerian homes and businesses discard their waste without classifying it as hazardous, recyclable, or biodegradable. Also studies by Ogunjuyigbe et al. (2017), revealed that many Nigerian communities do not have access to facilities that facilitate waste segregation.

Further findings of this study on the factors influencing residents' participation in solid waste segregation, revealed that; availability of waste bins, financial incentives such as rewards for recycling, strict enforcement of segregation laws are the factors influencing resident's participation in solid waste segregation. According to Oloruntade et al., (2020), participation is more likely among residents who are aware of the benefits waste segregation offers to the environment, human health, and the economy. Also, Ogunjuyigbe et al. (2017) in their studies revealed that waste segregation behavior is strongly influenced by economic rewards. They further stated that participation is typically higher in places where locals can sell separated recyclables, like paper, metals, and plastics, to recycling businesses as residents would not perceive much motivation to put in the extra work to separate waste, though, if there are no such incentives.

Lastly, on the challenges faced by residents in segregating solid waste, findings from this study revealed that lack of time to segregate solid waste due to engagements, delay from

waste collectors, lack of enforcement of waste segregation and unavailability of waste collection services are the challenges faced by residents in segregating solid waste. These findings corroborates studies by Agwu (2012) whose studies revealed that solid waste segregation problems are also made worse by inadequate institutional structures and regulations, as residents' compliance is weakened by the absence of explicit rules and enforcement procedures for trash segregation. Also studies by (Okot-Okumu & Nyenje, 2011) support the findings of this study, as their studies revealed that inconsistent garbage collection schedules and the mixing of segregated waste during transit are frequently the results of inadequate coordination among waste management authorities. Additionally Momoh & Oladebeye (2010) in their studies revealed that there are insufficient trash cans, recycling facilities, and waste collection locations in many urban and rural regions as residents are forced to mix and discard rubbish carelessly due to this shortage. Additionally, the effective collection and conveyance of separated garbage is hampered by the state of roads and transportation networks (Abila & Kantola, 2013). Even determined residents find it difficult to practice efficient waste segregation in the absence of adequate infrastructure.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter has to do with the summary, conclusion and recommendations based on the findings.

Summary

This study was conducted to investigate solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State. To achieve the purpose of the study, four (4) research questions were raised and there was a review of literatures related to the study. The descriptive research design was used for this study and the population consisted of 45000 residents in Ekosodin community. A total of two hundred and fifty (250) residents were selected. The instrument used for data collection was a well-structured questionnaire. The questionnaire was validated by the project supervisor and two other lecturers in the Department of Health, Safety and Environmental Education. The test-retest method was used to establish the reliability of the questionnaire. A total of two hundred and fifty (250) questionnaires were administered to the sample respondents and data collected was analyzed using frequency count and percentage.

Findings

The findings of the study revealed that:

- Respondents have a high level of awareness regarding solid waste segregation
- Respondents have adequate practices of solid waste segregation
- Availability of waste bins enables respondents to participate in solid waste segregation
- Financial incentives (e.g., rewards for recycling) motivates respondents participation in solid waste segregation
- Delay from waste collectors often discourage respondents in segregating solid waste
- Lack of enforcement of waste segregation makes respondents feel relaxed about segregating waste
- Unavailability of waste collection services in their area affects respondents participation

Conclusion

This study has examined solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State. The findings show that although the residents are highly aware about solid waste segregation, a number of obstacles prevent its efficient use, including unavailability of waste bins, inadequate facilities for disposing of garbage, and lax enforcement of waste management regulations.

Residents' waste segregation practices are greatly influenced by socioeconomic conditions, educational attainment, and government involvement.

Stronger policy enforcement by the appropriate authorities, better garbage collection infrastructure, and focused public awareness programs are all necessary to support sustainable solid waste segregation and waste management in Ekosodin. Further improvement of waste segregation practices can be achieved through community based projects and cooperation between citizens, waste management organizations, and local government officials. By tackling these issues, the community can improve public health, environmental sustainability, and the standard of living for its citizens.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The local government should provide adequate waste bins for different waste categories (organic, recyclable, and non-recyclable) at strategic locations within the community to facilitate proper waste disposal.
2. Authorities should enforce existing waste management laws and introduce stricter regulations to ensure compliance with proper waste segregation practices. Fines and incentives can be used to encourage adherence.
3. Residents should be actively involved in waste management decision-making processes. Establishing community waste management committees can help in monitoring and promoting segregation efforts.
4. The government should collaborate with private waste management firms to enhance waste collection, recycling, and disposal efficiency within the community.
5. Recycling initiatives should be encouraged within the community, and collection centers should be established where residents can drop off recyclable materials in exchange for incentives.
6. The local government should ensure that waste is collected regularly to prevent indiscriminate dumping and encourage residents to adhere to segregation guidelines.

Suggestion for Further Studies

- Assessment of Residents' Attitudes and Behavioral Change Towards Waste Segregation
- Impact of Waste Segregation on Public Health in Ekosodin Community
- Role of Socioeconomic Factors in Waste Management Practices

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APPENDIX I

UNIVERSITY OF BENIN, BENIN CITY, EDO STATE

FACULTY OF EDUCATION

DEPARTMENT OF HEALTH, SAFETY AND ENVIRONMENTAL

EDUCATION

QUESTIONNAIRE ON

SOLID WASTE SEGREGATION AMONG RESIDENTS OF EKOSODIN

COMMUNITY, OVIA NORTH EAST LOCAL GOVERNMENT AREA, EDO

STATE

Dear respondents,

I am an undergraduate in the Department of Health Safety and Environmental Education of the above named university. This questionnaire is designed to investigate solid waste segregation among residents of Ekosodin Community, Ovia North East Local Government Area, Edo State. This research work is purely for academic purpose and individual responses gotten will be treated as confidential. You are therefore required to kindly and truthfully respond by providing answers to the questions below.

Thank you.

Oboro Precious

Researcher

Section A

Instruction: please tick (✓) as appropriate.

Demographic background.

Religion: Christianity () Islam () Others ()

Sex: Male () Female ()

Age: less than 25 years () 26 – 30 years () 31 years - 35 years () 36 years - 40 years
() 41 - 45 years () 46 - 50 years () 51 years and above ()

SECTION B

S/N	ITEM	SA	A	D	SD
	What is the level of awareness of solid waste segregation among residents of Ekosodin community, Ovia North East LGA				
1	Separating waste at the source lowers expenses related to waste processing and disposal while also increasing the effectiveness of waste management systems				
2	Solid waste segregation improves public health by lowering community exposure to pollutants and hazardous waste				

3	Solid waste segregation is the sorting of waste into recyclable and non-recyclable materials				
4	Environmental pollution is reduced through solid waste segregation				
5	Solid waste segregation is every individual's responsibility to sustain and preserve the environment				
What are the common practices of waste segregation among residents of Ekosodin community, Ovia North East LGA?					
6	I dispose my solid waste in the waste bin in my home				
7	After sorting out my waste, I usually burn them				
8	I bury my waste after sorting them out				
9	I dump my waste in open spaces				
10	I engage in community-led waste segregation activities				
What factors influence residents' participation in solid waste segregation in Ekosodin community, Ovia North East LGA?					
11	The availability of waste bins enables me to participate in solid waste segregation				
12	Financial incentives (e.g., rewards for recycling) motivates my participation in solid waste segregation				

13	The attitude of my neighbors and community members influence my participation in solid waste segregation				
14	The strict enforcement of segregation laws in Ekosodin is the reason why I participate				
15	Environmental concerns such as reducing pollution motivates my participation				

What are the challenges faced by residents in segregating solid waste in Ekosodin community, Ovia North East LGA?					
16	I am very occupied and lack the time to dispose my waste				
17	The delay from waste collectors often discourage me in segregating solid waste				
18	Lack of enforcement of waste segregation makes me feel relaxed about segregating waste				
19	My inadequate knowledge or training on how to properly segregate waste affects my participation				
20	Unavailabilty of waste collection services in my area affects my participation				

.APPENDIX II

Reliability

Scale; ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded ^a	0	.0
	Total	20	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha ^a	No of items
.726	20