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SHITTU, Kolawole Adebayo 0009-0001-5101-5144[R1][1*], HABEEB, Modupe Lateefat[2], AZEEZ, Maryam Abimbola[3], OLOGUN Abigeal Abosede[4], OPASOLA, Olaniyi Afolabi[5] & OLADIMEJI, Lateefah Olabisi[6]

[1*]Department of Environmental Health Science, Kwara State University, Malete, Kwara State

[2]Department of Environmental Health Science, Kwara State University, Malete, Kwara State

[3]University of Ibadan, Ibadan, Oyo State

[4]Centre for Ecological and Environmental Research Management and Studies (CEERMS)

[5]Department of Environmental Health Science, Kwara State University, Malete, Kwara State

[6]Department of Public Health Science, Alhikma University, Ilorin, Kwara State

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Abstract

Purpose: The research aimed to investigate the challenges associated with waste disposal and management in Eyenkorin, a peri-urban neighborhood in Kwara State.

Materials and Methods: The study adopted cross-section survey research. The study involved sampling 250 respondents within Eyenkorin using a questionnaire as the primary data collection instrument. Demographic information such as gender, marital status, and age was recorded, alongside data on waste storage methods, disposal practices, frequency of disposal, and average weekly waste generation. The data was presented in tables.

Findings: The findings revealed that a majority of the respondents were male, married, and aged between 41-60 years. Plastic baskets were identified as the primary means of waste storage, with burning being the preferred method of waste disposal. Waste was disposed of every fortnight, with an average weekly waste generation of less than 5 kg. The implications of improper waste disposal included the creation of breeding spaces for germs and pollution. Furthermore, the study identified nonchalance by residents, poor policy frameworks, and a lack of technical know-how as the major challenges of waste management in Eyenkorin.

Implications to Theory, Practice and Policy: In conclusion, the research highlighted the inadequacy of waste management services and facilities in Eyenkorin, despite its status as a fast-growing peri-urban area. The increasing physical development of the neighborhood necessitates a proportional enhancement of waste management infrastructure. This suggests a disparity between current waste management practices and the evolving needs of the community, underscoring the urgency for policy interventions and technical support to improve waste management in peri-urban regions like Eyenkorin.

Keywords: *Waste, Waste Disposal, Waste Management, Peri-Urban*

JEL Codes: Q53, Q58, R11

1.0 INTRODUCTION

The growth of urban populations significantly impacts the generation of solid waste, as evidenced by numerous studies (Mapunda et al., 2023; Angmo & Shah, 2020; Alkaradaghi et al., 2021; Kuntaryo et al., 2023; Izquierdo-Horna & Camacho-Castañeda, 2022). With urbanization and population increases, there is a direct correlation with the rise in municipal solid waste production (Gowda et al., 2023; Uddin & Abedin, 2021; Sufiyan, 2020). This surge is driven by the growth in population density, which leads to higher material demand and supply, resulting in increased solid waste generation (Mapunda et al., 2023). According to the World Bank (2022), in 2020 it was estimated that the world generated 2.24 billion tonnes of solid waste, which amounted to a footprint of 0.79 kilograms per person per day. The estimated annual solid waste generated globally varies, with figures ranging from 1.3 billion tons Emeka et al. (2021) to 2.01 billion tons (Vishnu et al., 2021).

Developing countries experience a substantial increase in solid waste generation due to population growth, rapid urbanization, economic expansion, and rising standards of living (Shiferaw et al., 2023; Torrente-Velásquez et al., 2021; Sakanyi, 2022). In contrast, developed countries tend to generate more solid waste per person annually, with estimates ranging from 521.95 to 759.2 kg/person/year (Adhikari, 2022). However, the management of solid waste poses significant challenges in developing nations. These challenges stem from inadequate infrastructure and policies, which threaten ecosystems (Upadhyay & Bajpai, 2022; Saad et al., 2023; Hemen et al., 2022). In contrast, developed countries have implemented successful waste management strategies. Nevertheless, developing countries continue to struggle with waste management due to continuous waste generation (Saad et al., 2023; Muiruri et al., 2020; Ijaz et al., 2021).

Majority of the waste generated is disposed in unregulated dump sites or openly burnt, which has serious health ramifications and consequences on the environment (World Bank, 2022). The uncontrolled dumping of municipal solid waste poses significant threats, contaminating groundwater, and negatively impacting ecosystems (Angmo & Shah, 2021). The indiscriminate disposal of solid waste not only affects the environment but also exposes individuals working in waste disposal areas to significant occupational health hazards (Tamanna & Kabir, 2020). This practice leads to various forms of pollution, including soil, groundwater, and air pollution, along with the emission of greenhouse gases like methane, and the degradation of the aesthetic quality of the surroundings (SeethaRam, 2023). The consequences of improper disposal of solid waste is more felt in low- and middle-income countries (Massoud et al., 2022; SeethaRam, 2023; Angmo & Shah, 2021; Tamanna & Kabir, 2020).

The management of generated solid waste is essential for environmental protection (Gutama, 2023). Effective solid waste management practices are crucial to mitigate the risks associated with ineffective disposal systems (Abegaz et al., 2021). To address waste generation issues, solid waste management requires well-designed infrastructure and community cooperation (Kaso et al., 2022). Effective management of solid waste collection, transportation, and disposal from diverse sources is necessary (Al-Mohammed et al., 2022). Also, home solid waste management must be adequate for the establishment of a sustainable waste management system (Dibia et al., 2022). Waste management becomes a challenge the farther we move away from city centers where government resources are stretched thin. Neighborhoods on city suburbs often lack adequate physical planning

with distinct lack of infrastructure and services. One of such neighborhood within Ilorin metropolis is to form the fulcrum of this study, as it seeks to examine the challenges of waste disposal and management in Eyenkorin, Ilorin, Kwara State.

It is important to study peri-urban areas like Ilorin because they are experiencing rapid urbanization, have unique socio-economic dynamics, and are dealing with urgent environmental challenges (Tuanaya, 2024). In many cases, these areas face substantial increases in population and development, which puts strain on infrastructure and waste management systems (Ibikunle, 2022). It is important to understand these issues in order to create policies and interventions that are effective (Belhiah, 2023). Waste management that includes practices like reducing garbage, recycling, and proper dumping to lessen negative effects on the environment and health is necessary for long-term urban growth (Adzawla et al., 2019). But places on the edges of cities, like Eyenkorin have special problems that make these efforts harder (Ekanthalu et al., 2020). Some of these problems are fast population growth, bad infrastructure for collecting trash, and a lack of general knowledge about how to properly dispose of trash (Ibikunle, 2022). Managing trash poorly is also made harder by social and economic issues like poverty and a lack of government help (Espinoza, 2020).

The aesthetic impact of poor waste management in Eiyenkorin is evident in the accumulation of litter and illegal dumpsites, which degrade the visual appeal of peri-urban areas like Eyenkorin. This not only diminishes the quality of life for residents but also negatively affects property values and local tourism potential. On the environmental side, improper waste disposal leads to soil and water contamination, air pollution, and the proliferation of disease vectors, posing significant health risks. This is why Eyenkorin, which is a peri-urban area in Ilorin, Kwara State, is being used as a significant example to look into the specific difficulties and possibilities related to waste disposal and management. The specific objectives of the research are to; identify the types of waste generated in the residential neighborhood; identify the means of waste disposal employed by residents; examine the challenges associated with waste management in the neighborhood.

Problem Statement

The environment and the general people are seriously at danger from improper solid waste management. As a result of improper solid waste disposal, garbage builds up in drains, producing stagnant water that attracts insects that spread illnesses and raises the possibility of cholera (Omang et al., 201). This improper disposal leads to groundwater and well water pollution and affect the environment and human health (Alonge et al., 2020). Inadequate waste management has been linked in studies to respiratory problems, infections spread by vectors, aesthetic harm, and pollution of soil and water (Akmal & Jamil, 2021). Lack of waste reduction at the source, ignorance of waste management, and restricted access to disposal locations are some of the elements influencing these practices (Maldaye et al., 2021).

Nigeria, one of Africa's largest producers of solid waste, generates up to 25 million tonnes annually (Dada & Righelato, 2022; Iheukwumere et al., 2020). There is a significant challenge in managing this increasing volume of solid waste (Ugwu et al., 2020; Benjamin & Benjamin, 2023). These challenges have implications for social and environmental justice, particularly impacting populations in the informal economy (Nzeadibe & Ejike-Alieji, 2020). The inefficiency in waste collection, disposal, and transportation further complicates the situation, giving rise to environmental and health concerns (Sylvester & Orowhigho, 2022; Ogunbiyi et al., 2020).

Additionally, Ibikunle et al. (2021) conducted a study in Eyenkorin and found that 203,831 tonnes of municipal solid waste was produced during the four months of the dry season, at the rate of 1.12 kg per capita per day. In Ilorin, a neighboring community to Eyenkorin, Mokuola et al. (2021) reported that average per capita waste generated was in the range of 0.48- 0.84 kg/d. Wastes generated were mainly food waste, paper, plastic, textiles, nylon and metals. Food waste is generated more in all the study areas with percentage weight composition of 41.19%, moisture content of the waste stream for food waste is 46.16% and the bulk density is 10.36 kg/m3.

2.0 LITERATURE REVIEW

This section examined relevant literature under different headings to better address the topic under examination and identify gaps in literature. Methods of waste disposal, challenges of waste management and a section on empirical review of existing literature was highlighted.

Theoretical Review

The present investigation employs the community-based waste management paradigm. The objective of this strategy is to enable localities to actively participate in waste reduction, resource recovery, classification, and recycling (Muktiningsih et al., 2023). Citizens' creativity and innovation may be stimulated by collaborative waste management approaches, resulting in more efficient waste management procedures (Fatmawati et al., 2022). Community engagement, familial support, infrastructure accessibility, and community participation are all determinants of the success of community-based waste management initiatives (Anas, 2023). The integration of local knowledge and culture is of paramount importance in bolstering waste management initiatives that are community-based (Pamuji et al., 2023). In general, community-based waste management improves waste management systems through an emphasis on social capital, community participation, and sustainable practices (Fajarwati et al., 2020).

The uses of community-based waste management approach is suitable for dealing with the specific difficulties encountered in peri-urban areas near Ilorin Metropolis. These areas frequently face challenges due to fast urbanization, insufficient infrastructure, and a lack of proper waste management services. The involvement of local communities in waste reduction, resource recovery, classification, and recycling are a key aspect of the paradigm (Muktiningsih et al., 2023). This approach promotes the development of innovative solutions and efficient waste management practices (Fatmawati et al., 2022). In the peri-urban area of Ilorin, it is important to have community involvement, support from families, and easy access to infrastructure in order to overcome challenges related to logistics and resources (Anas, 2023). Furthermore, it is crucial to incorporate local knowledge and cultural practices into waste management initiatives. These elements play a significant role in building community trust, fostering cooperation, and ultimately improving the overall effectiveness of such initiatives (Pamuji et al., 2023). By placing emphasis on the local and cultural aspects, it ensures that community-based approaches in Ilorin Metropolis are not only sustainable but also deeply connected to the specific socio-cultural context (Fajarwati et al., 2020).

Conceptual Framework

Solid Waste Management

Solid waste includes a variety of items, including food waste, building trash, plastics, papers, metals, textiles, rubber, glass, and wood (Hind, 2023). Solid waste management entails the dispersal of solid refuse with the intention of reducing its detrimental effects on the environment and human health. It encompasses various processes such as waste prevention, recycling, composting, controlled burning, and landfilling (Bhattarai, 2021).

Challenges of Waste Management

The challenges of waste management encompass a variety of issues such as inadequate waste infrastructure, lack of equipment, insufficient operational funds, poor waste disposal practices, inadequate waste facilities, shortage of waste collection vehicles, lack of safe waste disposal methods, absence of well-equipped landfills, and ineffective legislation implementation (Lissah et al., 2021; Gelan, 2021). A lack of data sharing among stakeholders, broken waste management systems, and obstacles in handling waste because of concerns about cost, quality, transportation, and safety are other issues (Ahmad et al., 2021; Kandasamy et al., 2022; Olabi, 2023). Challenges also come from the fast urbanization, changing consumption habits, fast population increase, and inadequate waste management systems in many nations (Gutama, 2023; David et al., 2020; Kadhila et al., 2023; Sakanyi, 2022). These challenges make better governance, community involvement, financial resources, and infrastructural support necessary to improve waste management methods (Gachoki et al., 2022; Wikurendra et al., 2023; Ukala et al., 2020).

Method of Waste Disposal

The improper disposal of solid waste includes behaviors such as open dumping, the use of illegal locations for trash disposal, the burning of garbage in places that have not been allowed, and insufficient waste management procedures (Maldaye et al., 2022; Promise et al., 2023; Ampofo, 2020; Jazat et al., 2023; Abdulai et al., 2021). According to Stephen et al. (2021), Ibrahim et al. (2021), and Sufiyan (2020), these behaviors are responsible for the contamination of the environment, the pollution of the soil, and the creation of health dangers as a result of the discharge of environmentally toxic compounds. Proper methods of solid waste disposal encompass waste quantification, characterization, and the selection of appropriate disposal routes (Ugwu et al., 2020). In developing countries, practices such as indiscriminate dumping, landfilling, and open burning are commonly observed for waste disposal (Adelodun et al., 2021).

Empirical Evidences

Aderinoye-Abdulwahab, et al. (2022) carried out an assessment of waste management practices of rural dwellers in Asa LGA of Kwara State. A combination of snowballing and stratified random sampling technique was used in selecting the respondents. In all, a total of 93 respondents were sampled. Results showed that 44.1% of the respondents were between 41-50 years of age and 76% of the total respondents were below 50 years. A total of 66.7% of the respondents had no formal education, with 77.4% of them farmers by occupation and a further 66.7% respondents posited that they have not been visited by extension workers in the last 12 months. Methods of waste disposal adopted included; incineration (3.95), communal disposal site (3.56), family bin disposal (2.18). The perception on importance of waste management by the respondents showed that; waste

management prevents diseases and is needed for clean environment (3.97), it reduces the breeding of vectors that acts as carriers of diseases (3.83), reduction of environmental pollution (3.73).

The factors identified as influencing the proper adoption of proper waste disposal and management included; institutional factors (3.87), poor funding by the government (3.67) and illiteracy of the people (3.44) were the top ranked factors. Education level had a significant relationship with the respondents' method of waste disposal, with a weak negative relationship existing between both variables ($r = -0.004$, $p = 0.006$).

Ibikunle (2022) explored and predicted wet season municipal solid waste for power generation in Ilorin. The aggregate of waste generated was estimated to be 135,882 tons, while the aggregate characterized was estimated to be 80,700 tons. There are thirty-two samples of 240 L (bin of MSW) per sample considered in this investigation. There are twenty-one waste components categorized altogether, with packaging box having the highest proportion of 10.04%, followed by food residue of 9.64%, nylon 9.51%, and leather with the least fraction (0.75%) of the weight basis. Experimental investigations were performed on fourteen combustible fractions of the waste to determine the moisture content, elemental contents, and high heating value. The laboratory analysis reveals that the average carbon content available is 55%, 7% hydrogen, 1.35% nitrogen, 0.44% sulphur, and 30% oxygen; the low heating value of the waste was determined to be 23 MJ/kg. About 672 tons of MSW were investigated for energy production to give an energy and power potentials of 4.2 GWh and 53 MW discretely. The estimated electrical power potential for the wet season MSW is capable of meeting about 59% of the power demand for the Ilorin metropolis.

In 2021, Mokuola et al. assessed solid waste generation and characterization in Ilorin. The Municipal solid wastes were sorted, analyzed by weight and percentage composition using the quantitative approach. The average generated waste per capita was estimated to be 0.66 kg/day, w/w distribution was 57.53% food waste, 9.07% nylon (flexible films), 5.98% plastic (rigid containers),4.95% textile, 10.51% paper and 11.96% others. The average moisture content was 46.16% food waste, 20.63% nylon, 18.65% plastic, 36.67% textile, 18.45% paper and 42.89% others. The results show an average bulk density of 10.36 Kg/m3 of food waste, 2.14 of nylon, 0.5 of plastic; 0.93 of textile; 2.74 of paper and others 5.36. The chemical analysis showed that volatile matter ranged from 20.55 to 24.10%, ash content 3.10to 3.90%, fixed carbon 7.5to 9.8%, calorific value 14820to 18360 (kJ/kg), nitrogen 0.40to 0.50%, hydrogen 4.38to 5.80%, carbon 40.90 to 44.30%, oxygen 30.80 to 34.60%, Sulphur 0.19 to 0.24%, fusing point of ash 3.12to 4.38 °C, and heating value from 13.520to 13.64 KJ/Kg. The results generated play a positive role in the management of solid waste in that area.

Research Gap

The gap in the study lies in the need for a comprehensive understanding of waste management challenges and practices, particularly in rapidly urbanizing areas of developing countries like Nigeria. While existing literature highlights the significant impact of improper solid waste management on public health and the environment, there is a lack of detailed empirical research focusing on specific neighborhoods within urban centers. The proposed study aims to address this gap by examining the challenges of waste disposal and management in Eyenkorin, Ilorin, Kwara State. By identifying the types of waste generated, means of waste disposal employed by residents, and examining associated challenges, the research seeks to provide insights into the unique

dynamics of waste management in this specific locality. Additionally, the study will contribute to the broader discourse on waste management by exploring the factors influencing waste management practices and their implications for environmental and public health in urban areas of developing countries like Nigeria.

3.0 MATERIAL AND METHODS

Study Design

The study adopted a cross-sectional design type. It involved the use of a well-structured questionnaire to obtain information from the respondents on the solid waste practices.

Study Location

The study location is Eyenkorin, a neighboring location to Ilorin. Eyenkorin is located in Asa local government area with the council headquarters located in Afon. Eyenkorin which literally translates to "bird is singing" in Yoruba is the first settlement you get to when approaching Ilorin from the southwest region of the country. The name of the community emanated from the many birds that floods to the community due to the large presence of trees, thus creating a cacophony of bird noises to observers. The community was formerly an agrarian one and was a major transportation hub for vehicles coming from the south and those making their way up north.

Population

The population of the study comprised of all residents within Eyenkorin community staying within the community at the time of the study. The community was chosen due to its still growing nature and the fact that it lacks heavy government infrastructure like that of Ilorin proper.

Sample and Sampling Technique

In identifying the sample frame for the study, individual residential throughfares in Eyenkorin were identified. In all, seven (7) of such were selected representing a total sample size of 250 respondents. Multi-stage sampling technique was used, with purposive sampling used in selecting the residential streets within Eyenkorin, after identifying the streets, stratified random sampling was used in selecting every alternate house on the selected streets. Information were collected on the challenges of waste disposal and management of residents.

Data Collection

Questionnaire was the main instrument used for data collection. The questionnaire was a semi-structured questionnaire with some items being open ended, allowing respondents to provide the response that best applies to them while some others are close ended with options already provided for the respondents to choose the one that best applies to them. The questionnaire was administered to 250 respondents.

Statistical Analysis

The data collected was analyzed using SPSS Version 24, both descriptive and inferential statistics were used in analyzing the collected data.

4.0 FINDINGS

This section presents findings from the field survey that has been carried out and focused on addressing the key objective of the research. Inferences have also been drawn from the key findings of the research. All the tables in this section were generated from the field survey. A total of 250 copies of questionnaire were administered on the respondents, however only 227 copies of questionnaire were retrieved and valid for analysis representing a return rate at 90.8% which is good enough for the findings of this research to be based on. All tables in this section were from the administration of research questionnaire on the respondents.

Table 1 addressed the sociodemographic characteristics of the respondents, results showed that 64.3% of the respondents were male, while 35.7% of the respondents were female which showed that majority of the respondents were male, the questionnaire was administered on the heads of household who were largely men.

The marital status of the respondents showed that 82.8% of the respondents were married, 12.3% were single, 1.8% are divorced, while only 3.1% are widowed, which showed that majority were married. The age of the respondents revealed that 4.0% of the respondents were less than 21 years of age, 33.5% were between 22-40 years of age, 43.6% were between 41-60 years of age which represented majority of the respondents, only 18.9% of the respondents were above 60 years of age. This showed that majority of the respondents are adults and more than 21 years of age and can be regarded as full-grown adults. Furthermore, the academic qualification of the respondents showed that 42.3% of the respondents have secondary school leaving certificate, 13.7% respondents on their part have a National Diploma, while 29.5% possess a first degree from the Polytechnic or University, while 14.5% have a postgraduate degree. This showed that all the respondents have had formal education to a minimum of school certificate level, with more than 55% of the respondents possessing a post-secondary education.

Table 1: Sociodemographic Characteristics of the Respondents

Sex	Frequency	Percentage (%)
Male	146	64.3
Female	81	35.7
Total	**227**	**100.0**
Marital Status		
Married	188	82.8
Single	28	12.3
Divorced	4	1.8
Widow	7	3.1
Total	**227**	**100.0**
Age of the Respondents		
Less than 21 years	9	4.0
22-40 years	76	33.5
41-60 years	99	43.6
Above 60 years	43	18.9
Total	**227**	**100.0**
Academic Qualification		
School Certificate	96	42.3
National Diploma	31	13.7
Higher National Diploma/B.Sc./B.A.	67	29.5
Post Graduate degree	33	14.5
Total	**227**	**100**
Average Monthly Income		
Less than ₦50,000	50	22.0
₦ 50,000-100,000	71	31.3
₦ 101,000-150,000	62	27.3
₦ 151,000-200,000	30	13.2
₦ 200,000-250,000	12	5.3
Above ₦ 250,000	2	0.9
Total	**227**	**100.0**

The housing information of the respondents was examined in Table 2, results for the type of property occupied by the respondents in Eyenkorin showed that only 1.3% of the respondents live in duplexes which is generally regarded as high income accommodation, 19.4% on the other hand stated that they live in 2-bedroom flats, another 39.2% of the respondents stated that they live in 3-edroom flats, these two responses combine for a little more than 58% of total responses, block of flats are the most common type of accommodation, wherein the property owner can occupy one of the flats and rent out other flats to generate revenue from the property. Another 15.9% of the respondents started that they live in bungalows, while 24.2% of the respondents stated that they live in tenement buildings which are traditional apartments where rooms face each other and facilities like toilet, bathroom and kitchen are shared.

The nature of occupation if the residents in their accommodation showed that 52.0% of the respondents who are more than half and were in the majority live in their self-owned accommodation, 35.7% of the respondents currently occupy rented accommodation, 11.9% of the respondents live in family-owned accommodation, while only 0.4% of the respondents stated that they currently live in staff housing. The household size of the respondents was examined, results

showed that 16.3% of the respondents stated that they have an household size of 1-3 persons, majority of the respondents at 63.0% however stated that they have a household size of 4-6 persons, while 18.1% stated that they have a household size of 7-9 persons, only 2.6% of the respondents stated that they have a household size of more than 9 persons. Household size refers to the number of people living together under the same roof, and the more the number of people living under a roof, the higher should be the volume of waste generated by them.

Table 2: Housing Information

Type of Property	Frequency	Percentage (%)
Duplex	3	1.3
2-bedroom flat	44	19.4
3-bedroom flat	89	39.2
Bungalow	36	15.9
Tenement	55	24.2
Total	**227**	**100.0**
Nature of Occupation		
Owner Occupied	118	52.0
Rented apartment	81	35.7
Family house	27	11.9
Staff housing	1	0.4
Total	**227**	**100.0**
Household Size		
1-3 persons	37	16.3
4-6 persons	143	63.0
7-9 persons	41	18.1
More than 9 persons	6	2.6
Total	**227**	**100.0**

There are different types of waste that can be generated in a household, the types of waste generated by the respondents was examined in Table 3, multiple responses were allowed for the various types results showed that all the respondents generated vegetable matter and food waste, all of the respondents also stated that they generate plastic waste, only 96.9% of the respondents opined that they generate rubber waste, with a close 96.0% also stating that they generate paper waste, 90.7% of the respondents opined that they generate glass and girts as waste, while only 83.3% of the respondents indicated that they generate ash as waste. Nearly everybody has shifted to the use of cooking gas for household use hence many households do not generate a lot of ash either through firewood or coal pots.

Table 3: Type of Waste Generated

Type of Waste	Frequency	Percentage (%)
Vegetable Matter/Food waste	227	100.0
Plastics	227	100.0
Paper	218	96.0
Glass and Grits	206	90.7
Ash	189	83.3
Rubber	220	96.9

The approach to the management of waste adopted by the respondents was examined in Table 4, result for the storage container used for waste by the respondents showed that 2.6% use raffia basket for waste storage, 13.7% on the other hand make use of paper cartons in storing their waste, 19.8% of the respondents on the other hand stated that they make use of sacks for waste storage, majority of the respondents at 47.6% stated that they make use of plastic basket for waste storage within their residences, a further 16.3% stated that they store their waste in metal drums. The location of the waste storage container was further examined, 41.0% of the respondents stated that they store their waste indoors, while a slight majority at 59.0% stated that they store their waste outdoors. For most Nigerian households, the location of storage is dependent on the volume of waste generated and the frequency of eventual disposal, where the volume is little and disposal is frequent it can easily be stored indoors without constituting a nuisance to the residents.

The preferred method of waste disposal was also examined, 41.8% opined that they burn their waste which is consistent with the findings of Aderinoye-Abdulwahab et al. (2022), 30.4% stated that they make use of community waste dump site, only 0.9% of the respondents stated that they dump their waste inside drainage and in waterways, 3.1% opined that they dump their waste in large waste disposal drums, 7.9% on their part stated that they dispose of their waste as they see fit, while 15.9% opined that they use available open spaces, often times vacant plots of land with growth on it are used as makeshift waste dumps site until a time the landowner comes to reclaim possession. This shows that burning and use of waste dump site are the two largely used means of waste disposal.

The frequency of waste disposal by the respondents was further examined, 2.6% of the respondents stated that they dispose of their waste daily, 11.4% on their part dispose of their waste every three days, while 22.9% of the respondents opined that they dispose of their waste weekly, 43.7% of the respondents opined that they dispose of their waste every fortnight, a further 19.4% of the respondents stated that they dispose of their waste once in a month, this is dependent on the type of waste, volume of waste, means of disposal and the cost of disposal. The weight of waste generated by each household on a weekly basis was examined, findings showed that 57.7% generated less than 5kg weekly and represented more than half of total responses which is close to the World Bank (2022) position that the average person generates 5.5 kg of waste per week, 28.7% on their part stated that they generated between 6-10 kg, while only 13.6% stated that they generated more than 10kg weekly.

The cost of waste disposal to those that pay to have their waste disposed was examined, 41.8% of the respondents stated that they pay nothing to have their waste disposed, 6.6% opined that they spend less than N500 monthly to dispose of their waste, 34.4% on their part stated that they spend between N500-1,000 monthly, while 17.2% spent above N1,000 monthly on waste disposal. The

convenience and efficiency of the adopted means of disposal was examined, 13.2% of the respondents described it as excellent, 29.5% on their part indicated that it was very good, 50.7% which represented half of total responses indicated that it was satisfactory, 4.8% deemed it poor, while only 1.8% stated that it was very poor.

Table 4: Waste Management

Storage Container	Frequency	Percentage (%)
Raffia Basket	6	2.6
Calabash	-	-
Paper Carton	31	13.7
Sacks	45	19.8
Plastic Basket	108	47.6
Metal drum	37	16.3
Total	**227**	**100.0**
Location of Storage		
Indoors	93	41.0
Outdoors	134	59.0
Total	**227**	**100.0**
Preferred Method of Disposal		
Burning	95	41.8
Community waste dump site	69	30.4
Inside drainage/Waterways	2	0.9
Waste Disposal drums	7	3.1
Arbitrary disposal	18	7.9
Available open spaces	36	15.9
Total	**227**	**100.0**
Frequency of Disposal		
Daily	6	2.6
Every three days	26	11.4
Weekly	52	22.9
Fortnight	99	43.7
Monthly	44	19.4
Total	**227**	**100.0**
Weight of Waste		
Less than 5kg	131	57.7
6-10kg	65	28.7
Above 10kg	31	13.6
Total	**227**	**100.0**
Cost of Waste Disposal		
None	95	41.8
Less than ₦500	15	6.6
₦500-1,000	78	34.4
Above ₦1,000	39	17.2
Total	**227**	**100.0**
Description of Method of Disposal		
Excellent	30	13.2
Very Good	67	29.5
Satisfactory	115	50.7
Poor	11	4.8
Very Poor	4	1.8
Total	**227**	**100.0**

Table 5 examined the awareness of the respondents with recycling and reuse of waste. For sorting of waste, results showed that 44.9% stated that they sort their waste, while 55.1% of the respondents stated they do not sort their waste before disposal. Waste degrades at different rates, and some are reusable, hence sorting waste helps in improving waste management. Those that sort their waste were further asked what they do to their sorted waste, results showed that 2.0% stated that they reuse some of their waste, 21.6% opined that they sell their sorted waste to recyclers, 10.7% on their part stated that they give the sorted waste out to anyone in need of it, while 65.7% who were in the majority stated that they dispose of their sorted waste.

The implication of improper disposal of waste was examined, results showed that 3.5% opined that it may lead to the outbreak of diseases, 11.0% stated it can lead to flooding, majority of the respondents at 40.1% stated that it acts as breeding space for germs, 30.4% on their part stated that it causes pollution, 13.7% of the respondents stated that it impacts the health of people negatively which is consistent with the findings of Friday and Iderawumi (2017) who opined that diseases such as typhoid and cholera outbreak can arise as a result of improper waste disposal. Another 1.3% of the respondents stated that it can lead to the contamination of underground water sources. Awareness of recycling by the respondents was examined, results showed that 67.0% of the respondents stated that they are aware, 33.0% on the other hand stated that they are not aware of recycling which showed that the awareness of recycling is there among the residents.

Scavengers are always on the hunt for metal parts, plastics and electronics that could be reused or recycled, they generate an income for themselves through this and help the environment in the process, results showed that 40.1% of the respondents stated that scavengers patronize their neighborhood frequently, 24.2% opined that the scavengers do visit once in a while, while 35.7% reported that they do not. The attitude of community members to waste management showed that 53.7% stated that their community members carry out incineration, 37.9% stated that they do open disposal. Only 5.3% of the respondents stated that their community members carry out compositing, while 3.1% stated that they bury their waste.

Table 5: Awareness of Reuse and Recycling

Sorting of Waste	**Frequency**	**Percentage (%)**
We do	102	44.9
We do not	125	55.1
Total	**227**	**100.0**
Action taken on Sorted Waste		
Reuse	2	2.0
Sell to recyclers	22	21.6
Give out to anyone in need of it	11	10.7
Dispose	67	65.7
Total	**102**	**100.0**
Implication of Improper Disposal	**Frequency**	**Percentage (%)**
Disease	8	3.5
Flooding	25	11.0
Breeding space for Germs	91	40.1
Pollution	69	30.4
Impact the health of people negatively	31	13.7
Contaminate underground water sources	3	1.3
Total	**227**	**100.0**
Awareness of Recycling	**Frequency**	**Percentage (%)**
I am Aware	152	67.0
Not Aware	75	33.0
Total	**227**	**100.0**
Presence of Scavengers	**Frequency**	**Percentage (%)**
They do frequently	91	40.1
Once in a while	55	24.2
They do not	81	35.7
Total	**227**	**100.0**
Attitude of Community Members	**Frequency**	**Percentage (%)**
Incineration	122	53.7
Open disposal	86	37.9
Composting	12	5.3
Burying	7	3.1
Total	**227**	**100.0**

The challenges of waste management were examined, various challenges were identified from literature and presented to the respondents. Using a 5-point likert scale, with SA representing Strongly Agree with a score of 5, A representing Agree with a score of 4, ID representing Indifferent with a score of 3, D representing Disagree with a score of 2 and SD representing Strongly Disagree with a score of 1. The total responses for each challenge were multiplied by the corresponding multiplier to arrive at the weighted score which was then divided by the total number of respondents to arrive at the mean, the mean was then ranked. Results showed that nonchalance by residents is the biggest challenge with a mean of 3.90, people do not really care about how they manage their waste, any open space is fair game in most instances, indiscriminate burning also leads to fumes and smoke that can be injurious to the health of people.

Poor policy framework is ranked second with a mean of 3.72, the government policy on waste management is not clear, the government agency in charge of waste management in the State seems barely able to cover what is happening in the city center with little attention paid to the suburbs. Lack of technical knowhow is ranked third with a mean of 3.63, there is a general lack of technical competence and capability on how to sort waste, store waste, recycle waste and reuse waste both on the side of the waste management agencies and their representatives and the residents too. Lack of infrastructure is ranked fourth with a mean of 3.53, there is a lack of facilities and equipment that can aid effective waste management, trucks are often out of service to pick up waste from residential neighborhood and waste dump site are far away from the study location. Poor maintenance is closely associated with lack of infrastructure and it is ranked fifth with a mean of 3.42, the equipment and facilities needed for waste management are poorly maintained which is why it is easy for them to fall into disrepair, once equipment's are bought and commissioned for use, there is no cohesive plan for their maintenance till they fall into disrepair.

Table 6: Challenges of Waste Management

Challenges	SA	A	ID	D	SD	Mean	Mean Score	Rank
Nonchalance by residents	345	296	231	14	-	886	3.90	1st
Poor policy framework	355	252	192	32	13	844	3.72	2nd
Lack of technical knowhow	345	168	249	56	5	823	3.63	3rd
Lack of infrastructure	335	284	162	42	14	801	3.53	4th
Poor maintenance	265	236	213	38	25	777	3.42	5th
Poor resident education	290	252	135	64	29	770	3.39	6th
High cost	235	156	237	92	16	736	3.24	7th
Environmental pollution	255	156	192	98	24	725	3.19	8th
Bureaucratic bottlenecks	250	172	171	74	40	707	3.11	9th
Poor access roads	240	156	162	98	37	693	3.05	10th
Poor accessibility	210	144	171	72	56	653	2.88	11th

5.0 CONCLUSION AND RECOMMENDATION

Conclusion

The study has examined the challenges of waste disposal and management in a peri-urban location of Eyenkorin. The study administered questionnaires on the residents of Eyenkorin to sample their opinion on the research questions posed by this research. Analysis of results have been carried out in the previous section with the findings discussed. This study concluded that the provision for a fast-growing peri-urban location like Eyenkorin is not adequate enough, the level of physical development in the neighborhood continues to increase and it needs a commensurate government presence to help them in managing the waste they currently generate and the anticipated increased in waste generation.

Recommendations

The study therefore recommends that mass sensitization of the public needs to be carried out on a continuous basis to ensure that they are aware of the impact of waste on nature, their health and

the aesthetics of the environment, this will help them in making better conscious decisions in the overall management of their waste.

This study has made several important contributions to the field of waste management in terms of theory, practice, and policy. The research aims to enhance knowledge by implementing and improving the idea of community-based waste management in peri-urban areas, specifically in and around Ilorin Metropolis. This adaptation helps us understand better how getting the local community involved can help solve specific problems like lack of infrastructure and fast urbanization. The study provides practical strategies for enhancing waste reduction, recycling, and resource recovery practices by involving the community. This approach aims to promote more effective and sustainable waste management systems. This document offers recommendations based on evidence for policymakers and local authorities to improve waste management policies in peri-urban areas. The goal is to promote resilience and environmental sustainability in these communities by considering their socio-cultural context.

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