Impact of Waste Management Practices on the Green Economy, Obio- Akpor Local Government Area, Rivers State

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Abstract
The study examined the impact of waste management practices on the green economy in Obio-Akpor Local Government Area of Rivers State. The research was guided by three objectives: to assess the influence of waste management practices on the conservation of natural resources, to determine the potential of such practices in creating greener jobs, and to establish the relationship between waste pickers' activities and eco-friendly waste management. A descriptive survey design was adopted, and 360 questionnaires were distributed, of which 271 were correctly completed and returned for analysis. Data were analyzed using descriptive statistics and Chi-square (χ^2) tests. Findings revealed a statistically significant relationship between waste management practices and the conservation of natural resources ($\chi^2 = 237.41$, $p = 0.005$). Respondents agreed that poor waste handling practices such as open burning and indiscriminate dumping-have contributed to soil pollution, air quality deterioration, and contamination of water bodies, thus highlighting the importance of proper waste management in resource conservation. The study also found a significant relationship between waste management practices and the creation of greener jobs in the area ($\chi^2 = 207.43$, $p = 0.004$). Improved waste handling, recycling, composting, and reuse were identified as potential drivers of sustainable employment, with many residents' expressing willingness to support green job initiatives. Additionally, the activities of waste pickers were found to significantly influence eco-friendly waste management practices ($\chi^2 = 278.64$, $p = 0.002$). Waste pickers played a vital role in recycling, waste recovery, and reducing street waste despite facing challenges such as inadequate tools, health risks, and low income. Their contributions reflect the principles of a circular and green economy. Overall, the study concludes that effective waste management practices are critical to environmental sustainability, natural resource conservation, and green job creation in Obio-Akpor. It recommended an improved waste management infrastructure, policy support for green employment, integration of waste pickers into formal waste systems, and enhanced public awareness to advance the green economy within the region.

Keyword: *Impact, Waste Management, Practices, Green Economy, Natural Resources, Waste Pickers.*

1. Introduction

The United Nations Environment Programmed (UNEP, 2011) described green economy as one which leads to environmental benefits and improves human well -being and social equity while

cutting substantially the environmental risks and ecological scarcities. It ensures sustainable development, green jobs, environment and efficient use of resources, which are all aspects of low-carbon development. waste is no longer thought of as junk to be disposed, but it is a resource to be recovered, recycled, re-used, composted, or turned into energy (Ogunseye et al., 2024). Thus, an effective waste management can be considered as one of the core elements in the shift towards a green economy (Ogunseye et al., 2024). In the world, countries are increasingly shifting towards integrated waste management systems, with focus based on waste reduction, reuse, recycling, resources recovery and environmentally friendly waste disposal (Ogboeli et al., 2024; Okoro & Ogboeli, 2025). Developed countries have put significant effort into investments in recycling industries, waste to energy technologies and in circular economy efforts to make waste productive and generate jobs. These methods have played a considerable role in conserving resources, decreasing environmental pollution, in addition to economic growth, unfortunately, many developing countries continue to rely heavily on open dumping or uncontrolled dumping sites and indiscriminate disposal, as well as lack in infrastructure, institutional knowledge, environmental awareness and policy implementation (Mashudi, et al., 2023). The management of the huge amount of Municipal Solid Waste (MSW) generated day to day in Nigeria is highly daunting, due to the high rate of population increase, urbanization, industrialization and changing lifestyle (Adogu, et al., 2015). In most of the urban center's thousands of tons of waste are produced every day, which are mainly: organic waste, plastics, paper, metals, glass and electronic waste. Unfortunately, a significant proportion of this waste is disposed by open dump, accumulation on roadside, clogging the drains and burning the trash areas (Mbah et al., 2019). These practices have led to extreme pollution of the environment, soil pollution, contamination of ground water, emission of green-house gases and spread of disease vectors (Udobia & Akpan 2023). Despite the implementation of different policies by federal, state and local governments, and the establishment of waste management programmed various issues such as lack of funds, insufficient source separation, insufficient recycling facilities, weak enforcement of environment law and low participation by public hamper the implementation of waste management (Shridhar, et al., 2017; Simatele et al., 2017)

2. Methodology

Study Area

Obio-Akpor Local Government Area (LGA) was the area where this study was undertaken which is one of the twenty-three (23) LGA's in Rivers State and is part of the Port Harcourt metropolis. The LGA is a rapidly expanding urban area that is highly populated, is commercially expanding with industrial activities and has an increase in residential developments. Several educational institutions, markets, business centers, Industries and Residences Estate are located in Obio-Akpor which makes it to be a major economic and administrative hub in Rivers State. Existing waste management infrastructure and services are under pressure due to continuous influx of people in the area. Thus, knowledge on waste management practices in the LGA becomes crucial for understanding their role in sustainability and conservation of resources, creation of green jobs and the promotion of green economy.

The eight selected communities in Obio-Akpor Local Government Area, Ode (Elelenwo), Woji, Ozuoba, Rumuokwuta, Rumuola, Rumuokparali, Ogbogoro and Rumuomasi were the study areas. These communities were chosen, as they subsume different degrees of urbanization, commercial, population densities and waste generation of the study area.

Table 1.1: Selected Communities and Geographic Coordinates within Obio-Akpor Local Government Area

Community	Geographic Coordinates
Elelenwo	N 4°49'43.917" E 7°04'11.316"
Woji	N 4°48'47.900" E 7°03'52.944"
Ozuoba	N 4°52'12.216" E 6°55'42.012"
Rumuokwuta	N 4°50'24.154" E 6°59'10.773"
Rumuokparali	N 4°52'19.747" E 6°54'20.738"
Ogbogoro	N 4°50'50.746" E 6°55'44.438"
Rumuola	N 4°50'03.722" E 6°59'37.401"
Rumuomasi	N 4°50'08.469" E 7°01'33.154"

This Local Government Area was selected because of its strategic role for the study since it is one of the rapidly growing urban areas in Rivers State as well as the emerging issues of waste generation, disposal, environmental sustainability and economic opportunity of waste.

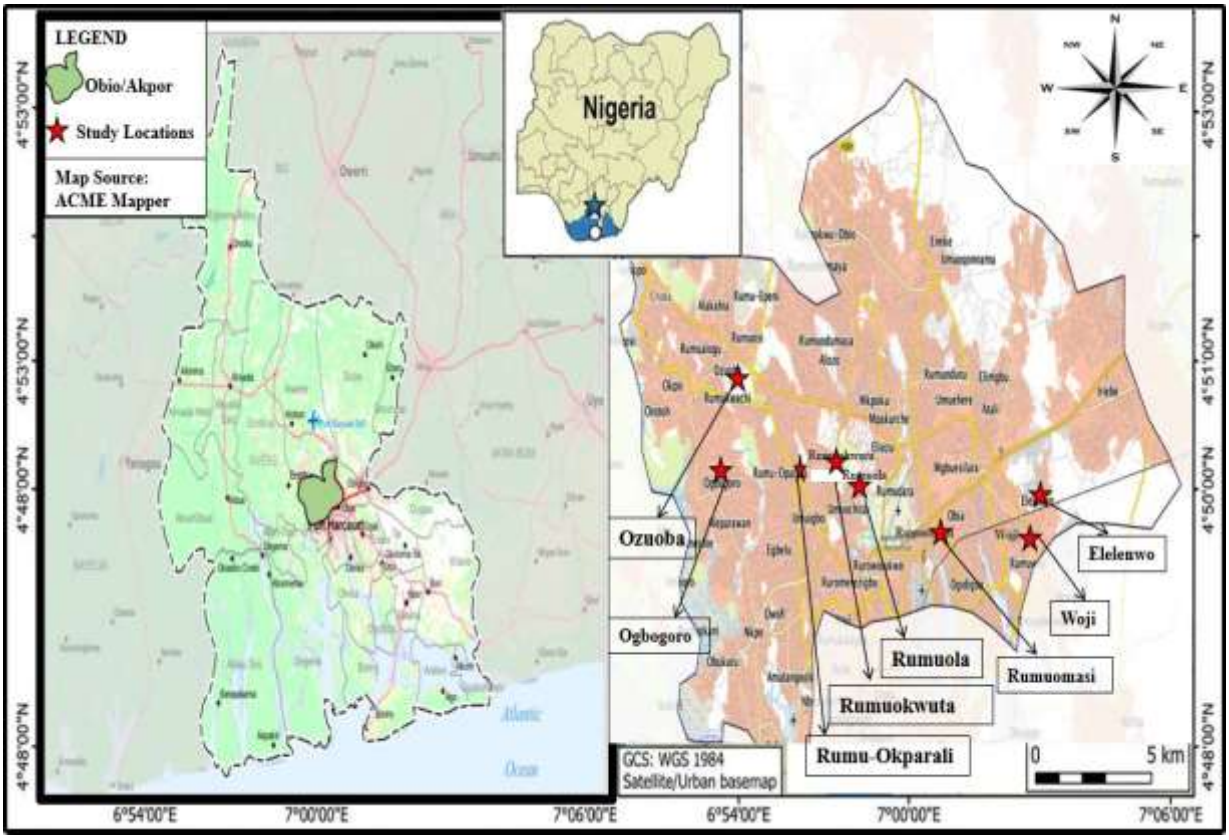

Figure 1.1: Map of the Study Area
Source: Researcher

Research Design

The study adopted a descriptive cross-sectional survey design to examine the impact of waste management practices on the green economy in Obio-Akpor Local Government Area, Rivers State. The design was considered appropriate because it enabled the researcher to obtain information from residents and relevant stakeholders on waste generation, disposal, recycling, resource recovery, natural resource conservation, and green job creation. The study population comprised residents, business owners, market operators, small-scale industries, and waste management personnel within the study area. A multi-stage sampling technique was used to select respondents. Communities were grouped into residential and commercial zones, after which selected streets, markets, and residential clusters were sampled. Households, businesses, and individuals were subsequently selected using random and convenience sampling techniques. A total of 360 questionnaires were administered, out of which 271 were correctly completed and retrieved, representing a 75.3% response rate. Data were collected using a structured questionnaire divided into four sections covering respondents' socio-demographic characteristics, waste management practices and natural resource conservation, waste management and green job creation, and the relationship between waste management practices and green economy indicators. The instrument was subjected to expert review to establish its validity, while a pilot study involving 20 respondents from a neighbouring community was conducted to assess reliability. The Cronbach Alpha result was above 0.70, confirming the internal consistency of the instrument. The collected data were coded and analysed using SPSS version 25. Descriptive statistics such as frequencies, percentages, and mean scores were used to summarize the responses, while correlation analysis was employed to examine the relationship between waste management practices and green economy development. Findings were presented using tables, charts, and statistical outputs.

Ethical principles were observed throughout the study. Participation was voluntary, respondents were informed about the purpose of the research, and confidentiality and anonymity were maintained. Permission was also obtained from relevant community leaders and stakeholders before data collection.

3 Results

The findings from the analysis of research data that was obtained from the structured questionnaire. The questionnaires were split into five sub-groups, according to aspects of the research goals.

Demographic Characteristics

Table 3.1: Distribution of Demographic Characteristics of Respondents

Variable	Category	Number of Responses (N = 271)	Percentage
Gender	Male	129	47.50%
	Female	142	52.50%
Age Bracket	18 – 25	75	27.68%
	26 – 35	87	32.10%
	36 – 45	56	20.67%
	46 – 55	25	9.22%
	56 and above	28	10.33%
Marital Status	Single	119	43.91%

	Married	123	45.39%
	Divorced	11	4.05%
	Widowed	18	6.65%
Education level	Primary	50	16.90%
	Secondary	101	26.20%
	OND/NHD/BSc	80	44.90%
	Others	40	12.00%
Occupation	Self Employed	22	11.99%
	Civil Servant	38	14.23%
	Business Person	70	26.20%
	Artisan	40	15.00%
	Unemployed	87	32.58%
Average Monthly Income	Less than ₦20,000	50	18.70%
	Between ₦20,000 and ₦50,000	85	31.80%
	Between ₦51,000 and ₦100,000	70	26.20%
	Above ₦100,000	62	23.20%
Years of Residence	Less than 2 years	45	16.90%
	2 – 5 years	85	31.80%
	6 – 10 years	65	24.30%
	Above 10 years	72	27.00%

Table 3.2: Chi-square Test: (There is no significant difference between Impacts of Waste management practices and conservation of natural resources)

Variable	SA	A	D	SD	All
Do you believe that proper waste management practices can help in conservation of our natural resources .	126	109	26	10	271
	88.13	131.25	26.13	21.50	
Surface water, air and soil are mostly affected in Obio-Akpor due to poor waste	89	135	25	22	271
	88.13	131.25	26.13	21.50	
Do you agree that most resident in obio-Akpor dump their waste in the water body	80	147	24	20	267
	88.13	131.25	26.13	21.50	
The burning of waste is a common practice in this community	71	60	65	75	271
	88.13	131.25	26.13	21.50	
The burning and dumping of waste in water has significant impact on the environment	108	109	32	22	271
	88.13	131.25	26.13	21.50	
Poor waste management can cause loss of green spaces in Port-Harcourt	69	72	58	72	271
	88.13	131.25	26.13	21.50	
The air quality is bad due to indiscriminate dumping of waste on the street	94	128	25	24	271

	88.13	131.25	26.13	21.50	
The poor management of waste can contribute to soil pollution	90	131	30	20	267
	88.13	131.25	26.13	21.50	
All	705	1050	209	172	2136
Chi-square					237.41
p-value					0.005

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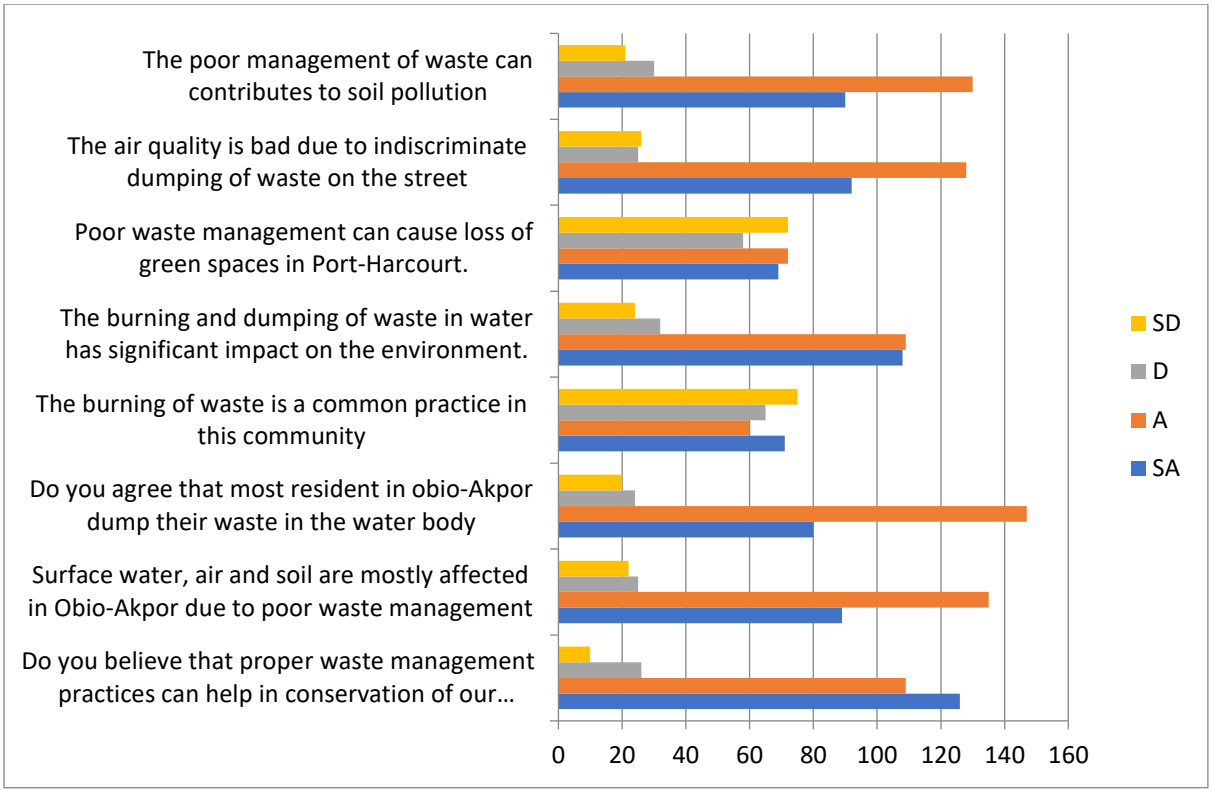

Figure 3.1: Distribution of Responses on the Impacts of Waste management practices in conservation of natural resources in Obio-Akpor

Table 3.3: Chi-square Test: There is no significant difference between waste management practices and the creation of greener jobs in Obio-Akpor L.G.A. Rivers State.

Variable	SA	A	D	SD	All
Many residents in Obio-Akpor are familiar with the concept of greener job.	70	100	61	40	271
	67.75	67.75	67.75	67.75	
Waste management practices can create sustainable job opportunities.	61	63	110	37	271
	67.75	67.75	67.75	67.75	
The River State Government should create greener jobs through waste management.	80	93	61	37	271
	67.75	67.75	67.75	67.75	
Willingness to support initiatives that create greener jobs through waste management.	68	105	58	43	271
	67.75	67.75	67.75	67.75	
There is a satisfactory level of community engagement and participation in waste management in Obio-Akpor.	50	55	107	59	271
	67.75	67.75	67.75	67.75	
Educational background and inadequate awareness contribute to poor waste management.	77	101	67	26	271
	67.75	67.75	67.75	67.75	
The concept of reuse and composting should be supported in waste management.	99	95	45	32	271
	67.75	67.75	67.75	67.75	
All	**505**	**612**	**509**	**274**	**1900**
Degree of freedom					**18**
Chi-square (χ^2)					**207.43**
p-value					**0.004**

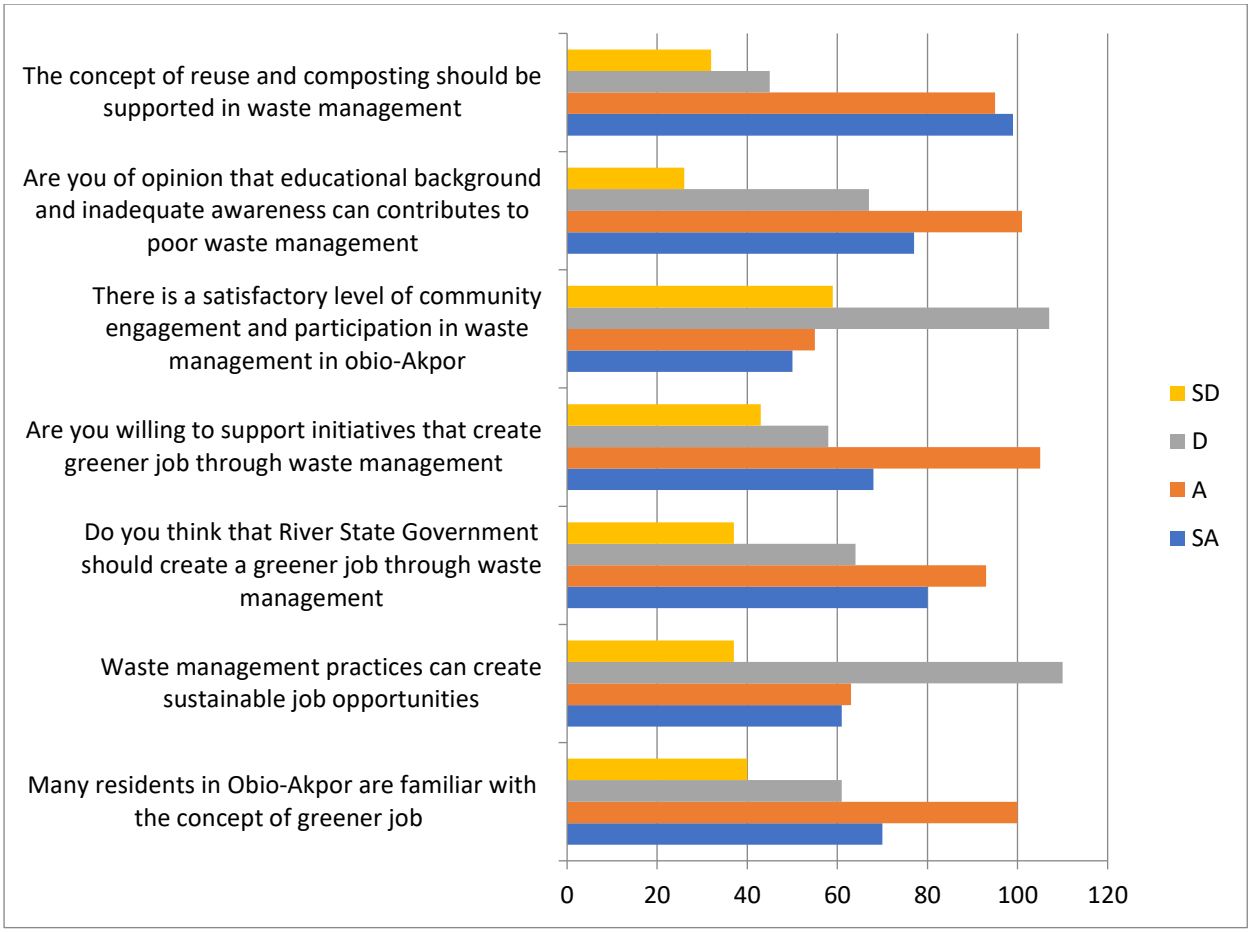

Figure 3.2: Distribution of Responses on the awareness and perception of the people in Obio-Akpor on waste management practices and creation of greener job

Table 3.4: Chi-square Test: There is no significant relationship between the activities of waste pickers and eco-friendly waste management practices in Obio-Akpor Local Government Area.

Variable	SA	A	D	SD	All
Waste pickers have significant impact in eco-friendly waste management practices	148	96	15	12	271
	67.75	67.75	67.75	67.75	
There is improvement in local waste management due to waste pickers	74	125	52	20	271
	67.75	67.75	67.75	67.75	
Waste pickers contribute to reduction of street waste in Obio-Akpor	70	130	39	32	271
	67.75	67.75	67.75	67.75	
Waste pickers contribute to recycling of wastes in Obio-Akpor	80	120	39	32	271
	67.75	67.75	67.75	67.75	

Lack of tools, health risks, and low income are challenges facing waste pickers	145	90	25	11	271
	67.75	67.75	67.75	67.75	
Over 100 tons of materials are removed daily by waste pickers	94	85	70	22	271
	67.75	67.75	67.75	67.75	
Activities of waste pickers contribute to environmental degradation	10	56	83	122	271
	67.75	67.75	67.75	67.75	
All	**621**	**702**	**323**	**251**	**1897**
Degree of Freedom (df)					**18**
Chi-square (χ^2)					**278.64**
p-value					**0.002**

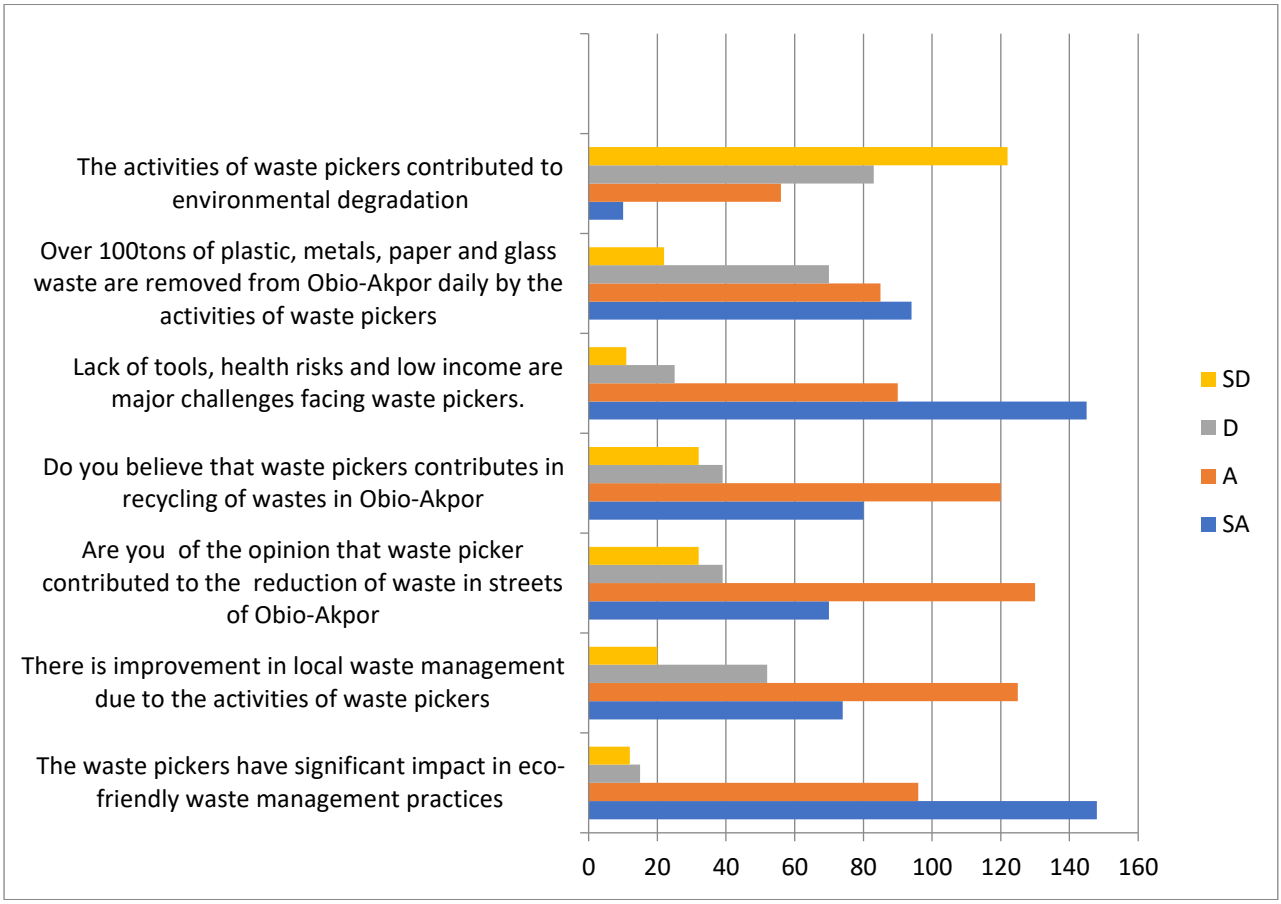

Figure 3.3: Distribution of Responses on the impact of waste pickers in eco-friendly waste management practices

4 Discussions

The findings of this study reveal that effective waste management practices significantly influence three core areas in Obio-Akpor Local Government Area: the conservation of natural resources, the creation of greener employment opportunities, and the role of waste pickers in eco-friendly waste management. These outcomes align with broader empirical and policy work within Nigeria and particularly in Rivers State. As far as natural resources conservation is concerned, the obtained result of the null hypothesis suggested that waste management practices are significant in conserving soil, water and air in Obio-Akpor. This aligns with the recent study on Waste Collection and Transportation Efficiency in Port Harcourt, which revealed operational gaps in the system of solid waste management in Rivers State by Ogboeli et al. (2025), the findings underscore the importance of enhancing waste management infrastructure and practices, as one of the main avenues for conserving natural capital and building a sustainable green economy. There was a good awareness about waste management, which conserves natural resources such as air, water and soil. The findings showed that there was a significant relationship between waste management practices and conservation of natural resources in Obio-Akpor. This is similar to the conclusions of Ogunseye et al. (2024), who posited that recycling and waste reduction practices play significant roles in sustainable use of natural resources in cities in Nigeria. Similarly, Adizua et al. (2025) reported that the improper management of waste resources leads to the contamination of groundwater resources and has adverse effects on the environment, which makes good and sustainable waste management very important for the conservation of the environment. In the same vein, Edomah and Abiola (2025) pointed out that poor management of waste due to a lack of skills and training among waste management workers is a key impediment to effective conservation practices. To this end, Our Reporter (2026) pointed out that effective waste management can then turn waste into wealth and lessen environmental degradation in Nigerian cities.

From the overall results of this study, it is inferred that the people of Obio-Akpor are aware of the environmental importance of good waste management and how it relates to resource conservation and environmental balance. In terms of employment and greener jobs, the finding of a statistical correlation between waste management and jobs reinforces the economic aspect of waste as a resource. Interestingly, the Federal Government says good waste management systems have helped create about 1.6 million jobs and contributed to GDP growth in Nigeria. This is a reflection of what is equally being seen in the local areas; residents of Obio-Akpor, like the national population, are aware of the employment generation opportunities of waste management and recycling businesses. That means that the local economy of waste is well linked to the green job's agenda. Thus, when it comes to the contribution of waste pickers, the study found that the majority of respondents gave their opinion that waste pickers played an important role in recycling and also in reducing waste on the streets, thus promoting eco-friendly waste management. This concords with the findings of Kalio-Esien et al., (2025) in Obio-Akpor, which reveals how waste pickers operate under difficult conditions but are instrumental in waste recovery. However, the study also reveals that the health situation of waste pickers is very critical, with the lack of equipment and low income suggesting an imperative to formally acknowledge their role and provide support. These findings all point towards the conceptualization of a green economy, in which waste is not only a cost to mitigate but also an opportunity to invest in jobs, conservation and community engagement.

For Rivers State, it means that waste management must be part of the wider strategy of the green economy, and the policies need to manage the environmental externality as well as deliver inclusive economic solutions. A majority of respondents agreed or strongly agreed that waste management can create sustainable livelihoods. The results indicated that there are changes in awareness and perception of greener jobs and that the perception is more or less positive. This discovery agrees with that of Njoku et al., (2024), which found that effective

waste management is significantly associated with employment creation and productivity among small businesses in Owerri. Likewise, the study of Nwauba (2023) found that waste recycling businesses in Nigeria have a direct impact on boosting the economy while creating employment avenues for many jobless Nigerian youths. However, Onuoha et al. (2023) observed that the waste sector in Nigeria has the potential to create green jobs, but the enforcement of policies and awareness of the public is still weak and slow to be implemented. Based on the above, the findings of the present study reveal that while the residents of Obio-Akpor are aware of greener job opportunities in waste management, further sensitization and institutional framework are needed to foster policy-based changes in the area of job creation.

The majority of the respondents appreciated and acknowledged the role of waste pickers in the overall recycling, reduction of street littering activities and eco-friendly waste management activities. The results indicated a significant relationship between waste pickers' activities and eco-friendly waste management, which is positive. The result corroborates with the study of Mbah et al. (2019), which indicated that informal waste collectors in Lagos are important for the recovery and recycling of materials in the circular Nigerian economy. The authors noted the important role of including informal waste actors in formal systems, as this makes them more efficient and environmentally sustainable. In addition, Oladipupo et al. (2024) posited that informal recycling practices are essential in the pursuit of a circular economy and alleviation of landfill pressures in the cities of Nigeria. This validates the above-mentioned arguments, as it has been demonstrated in the present study that the role of waste pickers in Obio-Akpor has environmental and economic significance. However, it also shows some challenges that still persist, which include insufficient tools, exposure to health risks and low-income issues, as reported by Edet and Maduabuchi (2024) in their work on waste recycling challenges in Nigeria. Taking a cross-sectional view of the conclusions above, in all the three dimensions, it can be appreciated that waste management is not only an issue of environmental sanitation but also a significant asset for the local green economy in Obio-Akpor. It helps create jobs, supports the conservation of resources and facilitates sustainable community development. This is in tandem with Umar (2024), who stated that the waste-to-energy sector in Nigeria has enormous potential for environmentally friendly economic development and energy production. The study therefore shows that local government areas such as Obio-Akpor can turn waste into an economic tool to reduce poverty and protect the environment, as laid out by Nigeria's Green Economy Strategy of the Federal Ministry of Environment (FME, 2023). Wilson et al. (2006) found that informal waste reclaimers play a crucial role in waste recycling and environmental protection even though their system remains informal in nature. The study further shows that more than 100 tons of recyclable waste are reportedly collected every day by waste pickers in Obio-Akpor. The results are consistent with the recommendations of Gutberlet (2012) that encouraging informal waste workers to become part of the formal waste management systems can help in boosting the percentage of recycling, saving natural resources and providing green jobs. In the same manner, according to Olanrewaju and Ilemobade (2018), a community-based waste management project can improve environmental sustainability as well as create employment opportunities. This is similar to what Ogwueleka (2009) identified as one of the problem areas in Nigeria, as regards urban environmental degradation, which is inefficient waste management practices. Likewise, Achi (2013) highlighted the importance of good waste practices by pointing out that bad waste practices alone are a threat to the good efforts of sustainable development, as all things are badly eroding the natural ecosystem.

The findings also show that unregulated waste disposal has led to the destruction of vegetation and green spaces in some parts of Port Harcourt, with Obio-Akpor as an example. This vindicates the claim of Ihuoma and Eke (2021), who found that the proliferation of waste dumpsites leads to changes in the land use of urban centres and consequently the reduction of open green areas within the urban centres in Rivers State. Furthermore, the study showed that

waste management services are weak in these areas and many of the local resident's resort to tipping waste in neighbouring water bodies or to open burning, owing to their lack of awareness.

Conclusion

Proper waste management practices play an important role in conserving natural resources and reducing air, soil, and water pollution in Obio-Akpor Local Government Area. Effective waste management also contributes to the development of the green economy by creating employment opportunities through recycling, waste recovery, and other waste-related activities. Waste pickers make significant contributions to recycling, resource recovery, and the reduction of street waste. However, their activities remain largely informal and are associated with poor working conditions, inadequate equipment, health risks, and low income. There is therefore a need to formally integrate waste pickers into the waste management system and provide them with appropriate support. Improved waste management infrastructure, including adequate waste bins, regular waste collection, recovery facilities, and recycling plants. Government and relevant waste management authorities should also promote green jobs, support recycling businesses, and strengthen public awareness on proper waste management, resource conservation, and employment opportunities. Overall, improved waste management can support environmental protection, sustainable livelihoods, and green economic development in Obio-Akpor.

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