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**Solaja, OM, Fielding, A and Awobona, S (2024) Examining socio-demographics and understanding business factors among plastic bottle waste collectors in Ogun state, Nigeria. *Recycling and Sustainable Development*. 17. pp. 1-18. ISSN 1820-7480**

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## Examining Socio-Demographics and Understanding Business Factors among Plastic Bottle Waste Collectors in Ogun State, Nigeria

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### ARTICLE INFO

Received 23 January 2024

Accepted 03 July 2024

Scientific paper

Keywords:

Livelihood Theory

Plastic Bottle Waste Collectors

Human, Social and Financial Capital

### ABSTRACT

This study examines the socio-demographic and economic experiences of plastic bottle waste (PBW) collectors and traders in Ijebu-Ode, Ogun State, through surveys. The study uses livelihood theory for context. The study shows that educational qualification, family size, religion, marital status, and age are more associated with PBW collection, while religion, gender, and age are more conducive to understanding the knowledge and attitudes of people who collect PBW for profit. Civilization, modern culture and consumption patterns, population, technology and industrial growth have influenced waste generation and collection for most people. Low recycling rates, inefficient waste disposal measures, and lack of knowledge about waste recycling hinder the collection of municipal waste and the development of the business. To improve the economic and social welfare of collectors and traders and reduce the impact of PBW on the environment, facilities and measures to formalize the business are advocated.

### 1. Introduction

Plastic bottle waste collectors mirror society's wastefulness. Garcia et al. (2018) found that South American people pass down trash picking as a culture. Trash collecting maintains a lifestyle that reinforces socioeconomic deprivation. Trash-related cultural norms keep this informal sector alive, making it hard to abandon regular professions and find alternative work. Also, cultural dynamics affect how communities see waste collectors. People in society and the community discriminate against rubbish collectors (Adetola et al., 2018; Solaja et al., 2023). Internal marginalization might make plastic bottle collectors' jobs harder. Khan et al. (2021) suggest that community-based treatments are essential for waste collectors' social integration due to

cultural attitudes. Plastic bottle garbage collectors affect society beyond the economy (Solaja et al, 2023).

Environmental sustainability requires recycling and trash management. Waste collectors rarely obtain help from structured rubbish management systems despite their importance. Uncredited work increases socioeconomic fragility. Social and environmental actions are needed to break this cycle.

Lack of legal recognition and social protection makes waste collectors vulnerable, raising social justice problems (Roy, 2010; Solaja, 2019). Few trash streams make plastic bottle waste collection harder (Lwasa et al., 2019). Age, gender, education, and family size affect waste collectors' hazards and issues (Ojo et al., 2017). Waste collecting can be profitable, but its informality and uncontrollability stigmatize waste collectors (Medina,

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2010; Adetola et al., 2018; Solaja, 2019). Understanding waste collectors' demographics is vital. Understanding their needs and challenges is crucial to finding solutions, according to Gupta and Bleakley (2019). Though waste collectors are increasingly valued (Solaja et al., 2023), little is known about their socio-demographic features in Nigeria. This study examines Ijebu-Ode, Ogun State, plastic bottle garbage collectors. The literature discusses waste-picking and socio-demographic consequences. Age and gender affect waste collectors' susceptibility, say Ojo et al. (2017). Younger people and women may encounter different obstacles. According to a UK study of 90,000 people from 40,000 families, some demographic groups were more environmentally friendly. Older women, childless couples, and couples with children were included (Longhi, 2013). Retired people did less, while an Indian study found that males, middle-aged people, and married people scored better on PEB. Chen et al., 2011 observed that young, female, and well-educated people cared less about the environment. Many Australian workers, 30 to 44-year-olds were the largest age group, followed by 45-64 and those over 65. The 18 to 29-year-olds were calmer.

Men 18-29 were less eco-conscious than women 45-64. The College of Natural Resources has more eco-friendly students than the College of Agriculture. A study found that teaching youngsters, especially environmentalists, eco-friendly behavior may influence their policymaking. Nigerian plastic bottle garbage collectors differ by religion, family size, education, marital status, and region.

This socio-demographic perspective illuminates the complex relationships between education, occupation, and waste collectors' socioeconomic status (Wilson and Velis, 2019). Literature extensively discusses socio-demographic profiles. While some say it fosters stereotypes, others say it is adjustable. Ramos et al. (2021) propose that responsible profiling can challenge prejudices and foster empathy by showing waste collectors' diverse and complex lifestyles. However, stigmatization and privacy concerns warrant ethical research (Rathore et al., 2018). Since waste management solutions are not universal, especially in Nigeria, a diverse and ever-changing nation, socio-demographic profiling is needed. Socio-demographic research on plastic bottle waste collectors can reveal complicated factors affecting their roles, challenges, and contributions. According to Gupta and Bleakley (2019), waste collectors' socio-demographic characteristics must be considered when designing treatments. Demographics also explain waste collectors' socioeconomic vulnerabilities. This understanding promotes inclusive and equitable waste management (Wang et al., 2020).

This takes a look at seeking to address this hollow by way of searching into the socio-demographic and economic characteristics of PBW collectors and buyers in Nigeria, in particular in Ijebu-Ode, Ogun State,

Nigeria. To achieve this goal, this paper is thematically structured into various sections namely research questions, hypotheses, literature review, theoretical framework, methodology, results and discussions, conclusion and recommendations.

### 1.1. Research Questions and Hypotheses

The following research questions and hypotheses guided the study;

1. To what degree do collectors of plastic bottle waste (PBW) experience the social and economic dynamics inherent in the PBW business?
2. What is the collective impact of demographic variables among respondents on their understanding of plastic bottle waste (PBW) collection as a business?
3. To what extent are plastic bottle waste (PBW) collectors immersed in and influenced by the social, economic, and cultural dynamics of the PBW business?

### 1.2. Literature Review

The literature review examines existing research on plastic bottle waste (PBW) management, focusing on legislative measures, recycling initiatives, and the socioeconomic impacts of PBW generation and collection. Previous studies have highlighted the need for sustainable waste management strategies and the importance of understanding the demographics and economic experiences of individuals involved in PBW collection and trading. However, information is presented under the following subheadings.

## 2. Nigerian Plastic Waste Management

Due to the growing challenges of plastic manufacturing and disposal, Nigerian plastic waste management is complex and urgent (Adebisi and Ogunseye, 2018; Solaja et al., 2023). Plastics are produced in 368 million metric tons worldwide, causing environmental damage (Geyer et al., 2017). Nigeria's rapid population expansion and urbanization burden waste management facilities (Ezedike et al., 2020; World Bank, 2021). The growing usage of throwaway plastics exacerbates environmental degradation, requiring immediate and effective trash management (Adebisi and Ogunseye, 2018; Solaja, et al., 2023). Nigeria is experiencing a critical socio-economic issue with plastic waste. This issue is especially visible among marginalized waste collectors, whose livelihoods depend on plastic waste collection and sale (Solaja et al., 2017; Adebisi and Ogunseye, 2018; Solaja et al., 2023). The collection of garbage has become a vital way for economically disadvantaged people to make money (Solaja et al., 2023), illustrating the interwoven socio-

economic concerns that must be addressed to manage plastic waste in Nigeria.

Sustainable waste management in Nigeria is complicated by its socioeconomic environment. Understanding the socio-demographic features of plastic garbage collectors is essential to improving waste management (Gupta and Bleakley, 2019). Nigeria needs a waste management system that addresses waste collectors' unique requirements, challenges, and contributions. Nigeria needs plastic waste management, according to Adebisi and Ogunseye (2018). They highlight the growing amount of plastic waste and the need for specialized and comprehensive environmental solutions. Social, economic, and cultural factors that affect plastic garbage collectors worsen the situation. An in-depth analysis is needed to comprehend the intricacies of plastic garbage collection and exchange and identify barriers, inefficiencies, and improvement opportunities.

Plastic waste management must overcome logistical and socioeconomic challenges to be effective. Understanding these problems is essential to creating long-term solutions that address plastic waste management inefficiency. Given the escalating challenges of plastic production, population growth, and urbanization, this complex issue needs an immediate and customized response. Comprehensive measures tailored to Nigeria's socio-economic conditions are needed to address these issues. The socio-demographic characteristics of waste collectors and the challenges of collecting and selling plastic waste highlight the need for specific interventions and research. By solving these complicated issues, Nigeria may be able to handle plastic trash more sustainably and efficiently. This would significantly aid global plastic waste reduction efforts.

### 3. Waste collectors' Recycling Role

Waste collectors are vital to the recycling ecosystem and worldwide waste management. Trash collectors, sometimes known as scavengers or recyclers, are informal workers who collect, sort, and sell recyclable products from trash streams, according to Medina (2011). Their contributions go beyond waste collection and include key recycling value chain elements. Trash collectors are especially prevalent in developing countries with weak trash management systems (Medina, 2010; Solaja, et al., 2023).

Many urban garbage collectors intercept recyclable goods from families, businesses, and formal waste management systems before they end up in landfills. Their recycling efforts prevent valuable resources from being discarded. Scheinberg et al. (2010) highlighted that waste collectors help recover resources, decreasing waste's environmental impact and maximizing material use. Waste collectors' socioeconomic impact is huge.

Many marginalized people make a living via rubbish picking. This is especially true in underdeveloped nations

with few formal jobs. Waste picking is a crucial source of income for individuals and their families (Beluský et al., 2020). Including waste collectors in the recycling value chain empowers people economically and reduces poverty in their communities. The informality of waste picking makes it difficult and stigmatizing. Insufficient legal recognition and social protection increase their vulnerability (Medina, 2010; Roy, 2010). Recognizing waste collectors' recycling activities and offering legal and social assistance are essential to improving their working conditions.

Trash collectors' recycling success depends on their access to trash streams, local waste management systems, and market demand for recyclables. Access to waste streams may limit waste collectors' contributions, emphasizing the need for inclusive waste management (Lwasa et al., 2019). Collaborations between refuse collectors and formal waste management systems can boost recycling efficiency and recover recyclable resources. Waste collectors change waste management habits as well as collect. Their deep understanding of local waste sources makes them important community-based trash management partners. Beluský et al. (2020) suggest integrating waste collectors into formal waste management institutions for more sustainable and inclusive solutions. This integration allows waste collectors to contribute their skills while improving working conditions and social recognition. Waste collectors help recycle, recover resources, alleviate poverty, and manage waste sustainably. Building inclusive and successful waste management systems requires acknowledging and resolving their contributions and limitations. Trash collectors may continue to promote sustainable trash management and recycling worldwide through legal recognition, social support, and collaboration.

### 4. Potential Drawbacks of Formalizing Waste Picking Business

Formalizing waste-picking firms to improve labor conditions and socioeconomic status may have negative repercussions that must be examined and mitigated. Since waste collectors have always worked informally, formalization may reduce their flexibility and freedom (Solaja et al., 2023). Waste picking is flexible enough to adapt to shifting waste streams and market conditions. Formalization may impose inflexible structures that hinder waste collectors' ability to adapt, affecting their livelihood. To tackle this difficulty, flexible formalization models that recognize trash picking's unique characteristics are needed. Beluský et al. (2020) suggest a gradual, participatory approach to formalization, incorporating waste collectors' perspectives and allowing for adaptability.

Formalization may also increase waste collectors' administrative duties (Medina, 2010). Compliance with

regulations and paperwork can distract people from productive work, reducing their efficiency and income.

This issue requires effective and simplified administrative procedures to reduce bureaucratic impediments. Scheinberg et al. (2010) found that incorporating waste collectors in formalization policy creation can help identify effective administrative barriers, assuring their feasibility for those involved.

Formalization may also impose admission requirements that prevent some waste collectors from participating (Solaja, 2019). Exclusion may exacerbate social inequities and limit waste management system inclusivity. Diversity-focused policies are needed to address this issue. According to Lwasa et al. (2019), participatory techniques and incorporating many garbage collector groups in decision-making can prevent some waste collectors from being excluded during formalization.

Waste collectors may face economic challenges when transitioning from informal to formal systems, such as the cost of equipment or compliance with legislation (Beluský et al., 2020). Many waste collectors may struggle to move due to financial pressure. Microfinance initiatives or subsidies might help rubbish collectors meet the initial costs of formalizing their job. Support systems are essential for fair and equal formalization benefits (Scheinberg et al., 2010). Formalizing rubbish collector communities may unintentionally undermine social networks and relationships (Medina, 2010; Roy, 2010; Solaja et al., 2023). The change from informal to formal institutions may affect waste collectors' social cohesion and reciprocal support. A careful, community-focused formalization plan is needed to address this issue. Involving waste collectors in planning and execution, as suggested by Beluský et al. (2020), preserves social structure and aligns formalization with common aims.

Formalizing waste-picking businesses can improve waste collectors' working conditions and socioeconomic status.

## 5. Environmental Impacts of Plastic Bottle Waste Collection and Recycling

The collection and recycling of plastic bottle waste by garbage collectors, although it provides economic opportunities, might have environmental consequences that, in certain instances, may surpass the economic advantages. Studies indicate that the process of gathering and reusing plastic bottles can have both positive and negative consequences, requiring careful consideration of environmental factors. An environmental concern arises from the energy-intensive procedures utilized in the recycling of plastic bottles. As to the findings of Jambeck et al. (2015), the recycling of plastic bottles, specifically the processes of melting and reprocessing, requires a significant amount of energy. The energy requirement, frequently obtained from non-renewable

sources, adds to carbon emissions, therefore offsetting certain environmental advantages linked to recycling.

Furthermore, the act of recycling plastic bottles may not completely alleviate the issue of plastic pollution. The study conducted by Geyer et al. (2017) emphasizes that despite the presence of effective recycling systems, a considerable amount of plastic trash, such as bottles, still finds its way into the environment due to insufficient collection, sorting, and recycling infrastructures. This raises apprehensions over the overall effectiveness of plastic bottle recycling in mitigating environmental consequences. The widespread usage of disposable plastic bottles worsens the environmental consequences due to the resource-intensive manufacturing process and its contribution to the depletion of fossil fuels. The creation of plastic bottles entails the extraction and refining of petroleum, which is a finite resource (Andrady, 2017). Hence, the extensive use of disposable plastic bottles exacerbates the environmental impact linked to the collecting and recycling of plastic bottle trash.

In addition, the transportation of gathered plastic bottles to recycling facilities might result in carbon emissions, especially if waste collectors lack access to eco-friendly means of transportation (Pivnenko et al., 2016). This aspect highlights the significance of taking into account the complete life cycle of plastic bottle waste management to appropriately evaluate its environmental impact. The recycling process also poses possible environmental concerns due to the emission of microplastics. During the recycling of plastic bottles, the mechanical processes involved might create and release microplastic particles into the environment (Rillig, 2012).

Microplastics, when they accumulate, present ecological hazards, especially in aquatic settings, where they can have detrimental impacts on marine organisms. Although waste collectors play a role in recycling, it is important to consider the overall environmental consequences about the economic advantages. The economic benefits for waste collectors may be undermined by the adverse external effects linked to the collection and recycling of plastic bottles. The study conducted by Pivnenko et al. (2016) indicates that the economic advantages of waste collectors can be negated by the negative environmental consequences if recycling procedures are not carried out sustainably.

## 6. Ethical Issues Surrounding Waste Collectors in the Management of Hazardous Waste

The involvement of waste collectors in managing hazardous waste materials gives rise to notable ethical considerations that necessitate thoughtful deliberation and focus. Garbage collectors, frequently found in the informal sector, have a vital function in garbage management, encompassing the gathering and

categorization of materials. Nevertheless, when it comes to managing hazardous waste, which presents potential dangers to both human well-being and the ecosystem, ethical issues take on utmost importance. An important ethical issue is the well-being and safety of waste collectors who are exposed to dangerous substances while performing their job. Hazardous waste inherently consists of compounds that possess toxicity, carcinogenicity, or other detrimental effects on human health (Ezeah et al., 2013). Insufficient protective precautions when handling such materials expose waste collectors to both immediate and long-term health risks, such as respiratory problems, skin disorders, and chronic diseases. Research has emphasized the perilous circumstances encountered by waste collectors who handle dangerous waste. In their study done in South Africa, Ezeah et al. (2013) discovered that waste collectors were involved in the gathering and categorization of electronic waste, which consists of dangerous substances such as heavy metals and flame retardants. The study found that a significant proportion of waste collectors did not possess adequate protective equipment, resulting in their direct exposure to perilous compounds. To tackle this ethical issue, a comprehensive approach must be taken that places the health and safety of waste collectors as a priority. It is crucial to implement strict safety measures, supply personal protective equipment (PPE), and conduct training programs on managing hazardous waste (ILO, 2018). It is imperative to incorporate waste collectors into established waste management systems while implementing appropriate rules and safety requirements, to guarantee ethical behavior in the handling of hazardous material.

Another ethical concern pertains to the socio-economic susceptibility of waste collectors. Rubbish collectors, who are frequently marginalised and have economic disadvantages, may feel obligated to handle dangerous rubbish since they have limited other options for employment (Asibey, et al., 2019). The economic imperative gives rise to ethical concerns regarding the utilisation of susceptible communities to handle and dispose of dangerous waste materials. To tackle this issue, it is necessary to implement more comprehensive socio-economic interventions that offer alternate means of making a living for individuals who collect rubbish.

The involvement of both governmental and non-governmental organisations is crucial in developing initiatives that provide training, education, and other job opportunities. This will help decrease the reliance of waste collectors on handling dangerous waste items (Lohri et al., 2015).

Moreover, the absence of legal acknowledgement and societal safeguards for garbage collectors exacerbates the ethical issues associated with their participation in the management of hazardous waste. Due to the informal nature of their labor, waste collectors typically face a lack of healthcare, insurance, and other social benefits,

making them susceptible to the negative consequences of their occupation (Black et al., 2019; Solaja 2019; Karki, et al., 2022;). Recognizing waste collectors as vital contributions to the waste management system and providing them with legal protection and social support is imperative from an ethical standpoint. Research conducted by Lohri et al. (2015) highlights the significance of incorporating waste collectors into established waste management systems, granting them legal acknowledgement and social safeguards.

Formalization serves the dual purpose of ensuring ethical treatment and enabling the formation of explicit standards and regulations for the management of hazardous waste. This safeguards the well-being of waste collectors and protects the environment.

Moreover, the ethical issues related to waste collectors and hazardous waste also encompass the possible environmental consequences of inadequate handling and disposal. Insufficient knowledge or resources among garbage collectors to handle hazardous materials responsibly may result in the contamination of soil, water, and air, hence causing detrimental effects on ecosystems and populations (Ezeah et al., 2013). To tackle this ethical challenge, it is imperative to develop extensive waste management systems that integrate waste collectors while protecting environmental purity. The primary focus of government legislation and industry actions should be to give priority to the appropriate handling and elimination of hazardous waste, to prevent garbage collectors from unintentionally contributing to the deterioration of the environment (ILO, 2018).

## 7. Previous Research on Waste Collectors and Recyclers

Previous research on socio-demographic profiling within the context of waste collectors and recyclers provides valuable insights into the multifaceted dimensions of their work. Numerous studies have explored the socio-economic characteristics of waste collectors, shedding light on their demographics, income sources, and living conditions. For instance, a study by Scheinberg et al. (2010) conducted in various cities worldwide delved into the socio-economic profiles of waste collectors, emphasizing their diverse backgrounds and the critical role they play in informal waste management systems. Medina (2010) contributed significantly to the understanding of waste collectors by examining their livelihood strategies, highlighting the economic significance of waste picking in developing countries. The research emphasized the informal nature of waste picking as a source of income for marginalized individuals who often face limited formal employment opportunities. This socio-economic perspective is crucial for recognizing the broader implications of waste collectors' work on poverty alleviation and community

well-being. In addition to socio-economic aspects, studies have explored the demographic composition of waste collectors, considering factors such as age, gender, and education levels. The research by Beluský et al. (2020) focused on waste collectors in various global contexts, revealing variations in demographics across different regions. Understanding these demographic factors is essential for tailoring interventions that address the specific needs and challenges faced by different groups of waste collectors.

The socio-demographic profile of waste collectors also intersects with issues of social justice and equity. Many waste collectors, particularly in developing countries, belong to marginalized or vulnerable groups, facing discrimination and stigmatization due to the informal nature of their work. Recognizing and addressing these social justice dimensions are crucial for developing inclusive policies and interventions (Solaja, 2019; Fuss, et al., 2021; Solaja et al., 2023). Moreover, the impact of socio-demographic factors on waste collectors' access to resources and opportunities has been a subject of scholarly inquiry. Lwasa et al. (2019) conducted research that examined the relationship between demographic variables and waste collectors' access to waste streams. The findings underscored the importance of inclusive waste management practices that consider the socio-demographic dimensions of waste collectors to optimize the efficiency of resource recovery.

Research has also highlighted the intersectionality of socio-demographic factors with other aspects of waste collectors' lives, such as health and well-being. Understanding the connections between demographic variables and health outcomes is critical for developing holistic interventions that address the broader welfare of waste collectors. Studies by Scheinberg et al. (2010) and Medina (2011) have explored these connections, emphasizing the need for comprehensive approaches that consider the socio-demographic context of waste collectors.

Furthermore, the geographical context plays a significant role in shaping the socio-demographic profiles of waste collectors. Research conducted by Beluský et al. (2020) across diverse regions provided valuable insights into the contextual variations that influence the demographics and experiences of waste collectors. This emphasizes the importance of context-specific interventions that account for the unique socio-demographic characteristics of waste collectors in different locations.

In conclusion, previous research on socio-demographic profiling of waste collectors has contributed significantly to our understanding of the diverse dimensions of their work. The studies reviewed have delved into socio-economic factors, demographics, social justice issues, access to resources, health outcomes, and geographical variations. Recognizing the socio-demographic context of waste collectors is essential for developing targeted

and effective interventions that address the unique challenges and contributions of this critical workforce in the realm of waste management and recycling.

## 8. Theoretical Framework

The socio-demographic profiling of plastic bottle waste collectors in Nigeria can be comprehensively examined through the lens of livelihood theory, a framework that emphasizes the role of assets, capabilities, and vulnerabilities in shaping the livelihoods of vulnerable populations (Chambers and Conway, 1992). Building on the extensive literature in this field, previous studies have successfully applied livelihood theory to understand the socio-economic dynamics of informal economies, particularly within the context of waste picking (Scoones, 2009; Van der Ploeg, 2015).

Applying the livelihood theory as our guiding framework, we scrutinize various assets that contribute to the livelihoods of plastic bottle waste collectors. Human capital factors, such as age, education, and skill levels, play a pivotal role in shaping their capabilities (Ellis, 1998). Studies have shown that education positively affects the livelihood outcomes of vulnerable populations in informal sectors, underscoring the importance of human capital in shaping livelihoods (Beegle et al., 2006). Social capital, manifested in the form of networks and relationships within the waste-picking community, is another crucial asset (Portes, 1998; Solaja, et al, 2017).

Research by Uphoff (1986) illustrates the significance of social capital in providing support and resources for individuals engaged in informal economies. The interaction between waste collectors and their environment constitutes a dimension of natural capital, reflecting the dependence of vulnerable populations on environmental resources (Berkes et al., 2003). Financial capital, encompassing income levels, savings, and access to financial resources, is a critical component of the livelihood framework (Deaton, 1997). Studies have highlighted the link between financial capital and improved livelihood outcomes in informal economies (Harold and Garcia Poverty, 1993).

Examining vulnerabilities and coping strategies within the socio-demographic profile of plastic bottle waste collectors allows for a nuanced understanding of their livelihood challenges. Socio-demographic factors contribute significantly to vulnerabilities, and a review of studies on waste collectors reveals how these individuals adopt coping strategies in the face of challenges (Scheinberg et al., 2010). The livelihood strategies employed by waste collectors, including the diversification of income sources within waste picking, align with existing literature illustrating how vulnerable populations navigate the complexities of informal economies (Carr, 2008). Gender dynamics further shape the socio-demographic profile of waste collectors, with studies highlighting gender-specific challenges and

opportunities within this context (Roy, 2010). Livelihood theory provides a lens through which we can understand the gendered aspects of plastic bottle waste picking and the implications for the socio-demographic composition of this workforce. Drawing policy implications through a livelihood lens is crucial for addressing the challenges faced by plastic bottle waste collectors. Understanding how policies can enhance livelihood assets and reduce vulnerabilities is essential (Ellis, 2000). Research by Narayan et al. (2000) provides insights into how policy interventions can positively affect the livelihoods of vulnerable populations. Social networks also emerge as a critical factor in shaping the livelihoods of waste collectors, aligning with literature that underscores the importance of social networks in the functioning of informal economies (Woolcock and Narayan, 2000). In conclusion, the application of livelihood theory enriches our comprehension of the socio-demographic profiling of plastic bottle waste collectors in Nigeria. By examining assets, vulnerabilities, and coping strategies through this lens, we gain a holistic understanding of the dynamics at play within this informal sector. This analysis, grounded in the principles of livelihood theory, not only contributes to academic discourse but also provides actionable insights for policy formulation and interventions tailored to the unique challenges faced by plastic bottle waste collectors in Nigeria.

## 9. Measures and Methods

This study, conducted in the Ijebu region of Ogun State, Nigeria, utilizes a descriptive and exploratory survey design. Using a semi-structured questionnaire as the main data collection method, the study centers on semi-urban areas (Ago-Iwoye, Ijebu-Igbo and Ijebu-Ode) in the Ijebu region. These areas were selected using a convenience sampling technique, and participant inclusion was determined using a quota sampling method. This study seeks to investigate the socio-demographic characteristics of individuals who engage in the collection of plastic bottle waste in specific locations in

the Ijebu region of Ogun State. Based on the vibrant cultural backdrop of Ijebu, which is known for its traditions, festivals, and a strong sense of community, this study has the potential to provide valuable insights for shaping policies and governance structures. In addition, a quota sampling procedure was used to select 94 participants who were ecopreneurs or individuals actively engaged in the plastic waste industry and possessed significant expertise in the subject matter. Nonetheless, 86 participants (91.4 %) fulfilled the inclusion criteria and actively took part in the survey. Participants were required to be Nigerian citizens with at least five years of experience in the plastic waste industry in the selected locations. Quantitative data were collected through a questionnaire, and the analysis utilized descriptive methods such as frequency counts and percentage distribution tables. In addition, inferential analysis was performed using a one-sample t-test, independent t-test, and chi-square. The methods used in this study allowed for a thorough exploration of the socio-demographic characteristics and waste management perspectives of the participants.

In addition, this study was conducted with a strong focus on ethical principles, ensuring that participation was voluntary and that the participants' identities and information remained confidential. All respondents were given prior consent, ensuring clear communication about their right to withdraw from the study and the choice to not answer any intrusive questions. Parental or guardian permission was obtained for participants under the age of 18. During the questionnaire administration, parents or guardians were permitted to accompany underage participants to ensure their comfort and well-being. Participants were given the assurance that the information they provided would be used solely for research purposes, with a commitment to maintaining their anonymity and confidentiality. Even though the University's ethical review committee was not in place during the study, the investigation was conducted with utmost dedication to ethical principles. The tested variables are presented in Table 1.

**Table 1**  
Tested Key Variables (Researcher's Formulation, 2021)

<b>Generation and Collection</b>
Generation is increasing daily a person generates an average of 16 kg PBW per day.
Mostly generated from households, marketplaces, restaurants, workplaces, religious and event centres.
Polyethylene terephthalate (PET), polyethene (PE), polypropylenes (PP), polystyrenes (PS), and polyvinyl chloride (PVC) are found among the PBW generated.
More noticeable than other solid waste.
Polyurethanes and epoxy resin were found among the PBW generated.
PBW waste is easier to collect after single-use or throwaway.
PBW is more convenient for collection and sorting than other solid waste.



**Table 1** Continued  
Tested Key Variables (Researcher's Formulation, 2021)

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**Generation and Collection**

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PBW can be sorted and stored easily for recycling conveniently.

PBW can be picked from open dumps and domestic waste bins.

PBW can be conveyed from the point of disposal to the collection centre wheelbarrow, sacks, cartoons etc.

PBW is frequently collected after use because of its multiple utilities.

PBW is collected by scavengers, children, women and youths.

PBW is lightweight and durable for a recycling activity or process.

PBW is also collected through authorized waste bins or bags provided by the government.

**Social Dynamics**

PBW trading is being carried out in both rural and urban areas; PBW trading is not gender-biased.

PBW trading gives room for apprenticeship and family business initiatives.

PBW trading also promotes cluster networks and partnerships among ecopreneurs.

PBW trading is not age-based.

PBW trading does not require formal education and registration.

**Economic Dynamics**

Trading is lucrative and promising.

Trading promotes self-employment and income for generations.

Trading generates monthly income.

Trading is not capital-intensive compared to other informal businesses.

Trading requires general trading skills (buying, storing and selling),

Recycling serves as a resource for recycling and sustainable industrial activities.

Recycling helps in reducing the cost of purchasing fresh resources from manufacturers.

Recycling contributes to the level of informal economic activities.

Recycling serves as an alternative source of the international waste business.

Recycling saves the cost of plastics production and management.

Recycling creates more eco-friendly business initiatives and opportunities.

Recycling enables the chance of turning waste into consumable and reusable materials.

Recycling helps to reduce and save the use of finite materials such as crude oil for plastics production.

Recycling enhances the re-invention of old things in new ways.

Recycling encourages the production and consumption of affordable as well as recyclable products.

Recycling helps to promote the flow of wealth or financial resources among indigenous individuals and industries.

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**Table 1** Continued  
Tested Key Variables (Researcher’s Formulation, 2021)

<b>Economic Dynamics</b>
Recycling allows for creativity and re-creativity among individuals and industries.
Recycling helps to create additional wealth from unwanted materials.
Recycling boosts the rate of application of plastics in the contemporary world.
Recycling encourages new investors especially when sorting and collection are carried out properly; has a high market value if processing plants are available.
<b>Cultural Dynamic</b>
PBW trading is compatible with the culture of people.
<b>Plastic Bottle Waste Collection as a Business</b>
Trading is carried out through the buying and selling of used plastics.
Trading is being carried out in both rural and urban areas.
Trading gives room for apprenticeship and family business initiatives.
Trading does not require formal education and registration.

**10. Results**

In this section, the results of the data gathered using the research methods explained earlier are presented. The aggregate and disaggregate approaches were used. By aggregate approach, the demographics, attitudinal and knowledge variables are presented cumulatively. Data in Table 2 indicate the extent to which participants experienced dynamics earlier presented in Table 1. According to the data, they had experience of social dynamics ( $t = 40.585, df = 61, P < .000$ ) more than economic dynamics ( $t = 102.953, df = 45, P < .000$ ).

However, on examination concerning mean value, the economic dynamics are more dominant (Mean difference = 20.21739) than social dynamics. These results are explored further in Tables 3, 4 and 5 with the consideration of individual demographic variables. Data in Table 3 explicates the connection between the varied demographics of the participants and the social dynamics of collecting and trading PBW. From the data, it emerged that participants between 21 and 26 years align with the

dynamics ( $M = 6.5000, SD = .57735$ ) mostly followed by those who indicated 39 years above as their age ( $M = 6.4000, SD = .50262$ ). Within the marital status, participants who have not married ( $M = 6.7500, SD = .84699$ ) and those who have divorced ( $M = 6.5000, SD = .57735$ ) resonate with the dynamics more than the other categories examined. Male participants are more inclined with the dynamic ( $M = 6.5455, SD = .80043$ ) than female participants.

Excluding participants of single marital status, one can conclude that the dominance of 5-8 ( $M = 6.6154, SD = .75243$ ) and 1-4 ( $M = 6.4286, SD = .51355$ ) persons family size indicates that divorcees, separated and married participants believe in tested social dynamic variables.

This is better understood within the context of improving their means of livelihood. In the area of religion, participants with African Traditional beliefs ( $M = 8.0000, SD = .00000$ ) and Christian doctrines ( $M = 6.5333, SD = .62881$ ) are more attuned to the dynamics than those who believe in Islamic beliefs.

**Table 2**  
Extent PBW collectors experience the social, economic and cultural dynamics of the PBW business (Researcher’s Analysis, 2023)

	T	Df	Sig. (2-tailed)	Test Value = 3		
				Mean Difference	95 % Confidence Interval of the Difference	
					Lower	Upper
Social Dynamics	40.585	61	.000	3.45161	3.2816	3.6217
Economic Dynamics	102.953	45	.000	20.21739	19.8219	20.6129

**Table 3**  
Social Dynamics by Demographics (Researcher's Analysis, 2023)

Age	N	Mean	Standard Deviation
15-20 Years	6	6.0000	.00000
21-26 Years	<b>4</b>	<b>6.5000</b>	<b>.57735</b>
33-38 Years	2	6.0000	.00000
39 Years Above	<b>20</b>	<b>6.4000</b>	<b>.50262</b>
<b>Marital Status</b>			
Single	<b>24</b>	<b>6.7500</b>	<b>.84699</b>
Married	22	6.2727	.45584
Divorced	<b>4</b>	<b>6.5000</b>	<b>.57735</b>
Separated	10	6.2000	.42164
<b>Gender</b>			
Male	<b>22</b>	<b>6.5455</b>	<b>.80043</b>
Female	40	6.4000	.59052
<b>Family Size</b>			
1-4 Persons	<b>14</b>	<b>6.4286</b>	<b>.51355</b>
5-8 Persons	<b>26</b>	<b>6.6154</b>	<b>.75243</b>
More than 8 Persons	20	6.3000	.65695
<b>Religion</b>			
Christianity	<b>30</b>	<b>6.5333</b>	<b>.62881</b>
Islam	28	6.2143	.56811
African Traditional	<b>2</b>	<b>8.0000</b>	<b>.00000</b>
<b>Educational Level</b>			
No Formal Education	10	6.2000	.42164
Primary School Education	<b>24</b>	<b>6.5000</b>	<b>.78019</b>
Secondary Education	<b>22</b>	<b>6.4545</b>	<b>.67098</b>
Tertiary	<b>4</b>	<b>7.0000</b>	<b>.00000</b>

Analysis of the educational level along with the dynamics shows that tertiary education ( $M = 7.0000$ ,  $SD = .00000$ ), primary school education ( $M = 6.5000$ ,  $SD = .78019$ ) and secondary education ( $M = 6.4545$ ,  $SD = .67098$ ) qualification holders experienced the dynamics more than others. These results have indicated that participants cannot have the same views despite doing the same trading activity. This is expected to reflect in their knowledge and attitudes of economic dynamics. Similar to what was presented in Table 3, data in Table 4 establish a link between the individual demographics of the participants with the economic dynamics. Analysis indicates a clear disparity in the age categories that

resonate with social and economic dynamics. According to the data in Table 3, participants who indicated 33 to 38 years ( $M = 26.0000$ ,  $SD = .00000$ ) as their age are more aligned with the economic dynamic than those who reported 15 to 20 years ( $M = 23.0000$ ,  $SD = 1.54919$ ).

These two age categories are better than other categories. The emergence of the participants with 33 to 38 years is quite revealing when one looks at the number of people in the family size earlier reported under the social dynamics, which indicates a dominant connection of those with divorced marital status with the dynamics [social]. On the other hand, the result is surprising in the context that the participants with 21 to 26 years of age,

who earlier aligned with social dynamics, are not found in the economic dynamics. This suggests that older participants considered the economic benefits of engaging in PBW collection and trading more than young participants did.

This position is further justified by the highest standard deviation of the economic-related attitudes and knowledge of married participants ( $M = 23.4286$ ,  $SD = 1.45255$ ) than the participants with single marital status ( $M = 23.6364$ ,  $SD = 1.25529$ ) and others. From the data, it could be inferred that male participants ( $M = 23.3636$ ,  $SD = 1.39882$ ) were more related to economic dynamics.

This is not different from what was discovered for social dynamics. The dominance of participants with more than an 8-person family size ( $M = 23.8889$ ,  $SD = 1.40958$ ), 1-4 persons; ( $M = 23.2000$ ,  $SD = 1.22927$ ) indicates that the participants believed in capturing economic benefits from collecting and trading PBW.

This aligns with the earlier position that participants are engaging in the two activities of PBW because of the need to increase their means of livelihood. Like social dynamics, participants who reported African Traditional ( $M = 24.0000$ ,  $SD = .00000$ ) and Christianity ( $M = 23.2727$ ,  $SD = 1.31590$ ) as their religions also associated with economic dynamics more than the believers of Islamic doctrines did. Participants, according to the data in Table 4, with primary school education ( $M = 23.5556$ ,  $SD = 1.38148$ ) and tertiary education ( $M = 23.5000$ ,  $SD = .57735$ ) connected with economic dynamics than others, who have secondary education qualification and those without formal education. With this result, it could be concluded that primary school leavers and those with tertiary education qualifications are engaging in the collection and trading of PBW as an alternative to getting a white-collar job. Table 5 establishes cultural views that the participants' demographics aligned with.

**Table 4**  
Economic Dynamics by Demographics (Researcher’s Analysis, 2023)

Age	N	Mean	Standard Deviation
15-20 Years	6	23.0000	1.54919
21-26 Years	4	22.5000	.57735
33-38 Years	2	26.0000	.00000
39 Years Above	12	22.6667	.98473
<b>Marital Status</b>			
Single	22	23.6364	1.25529
Married	14	23.4286	1.45255
Divorced	2	22.0000	.00000 <sup>a</sup>
Separated	6	22.0000	.00000 <sup>a</sup>
<b>Gender</b>			
Male	22	23.3636	1.39882
Female	24	23.0833	1.28255
<b>Family Size</b>			
1-4 Persons	10	23.2000	1.22927
5-8 Persons	16	22.6250	1.02470
More than 8 Persons	18	23.8889	1.40958
<b>Religion</b>			
Christianity	22	23.2727	1.31590
Islam	20	22.9000	1.33377
African Traditional	2	24.0000	.00000
<b>Educational Level</b>			
No Formal Education	8	23.0000	1.30931
Primary School Education	18	23.5556	1.38148
Secondary Education	14	23.0000	1.46760
Tertiary	4	23.5000	.57735

**Table 5**  
Cultural Dynamics by Demographics (Researcher's Analysis, 2023)

Age	N	Mean	Standard Deviation
15-20 Years	6	1.0000	.00000
21-26 Years	<b>4</b>	<b>1.5000</b>	<b>.57735</b>
33-38 Years	2	1.0000	.00000 <sup>a</sup>
39 Years Above	20	1.0000	.00000 <sup>a</sup>
<b>Marital Status</b>			
Single	<b>24</b>	<b>1.2500</b>	<b>.44233</b>
Married	22	1.0909	.29424
Divorced	4	1.0000	.00000 <sup>a</sup>
Separated	10	1.0000	.00000 <sup>a</sup>
<b>Gender</b>			
Male	22	1.0909	.29424
Female	<b>40</b>	<b>1.1500</b>	<b>.36162</b>
<b>Family Size</b>			
1-4 Persons	<b>14</b>	<b>1.1429</b>	<b>.36314</b>
5-8 Persons	<b>26</b>	<b>1.2308</b>	<b>.42967</b>
More than 8 Persons	20	1.0000	.00000
<b>Religion</b>			
Christianity	<b>30</b>	<b>1.1333</b>	<b>.34575</b>
Islam	<b>28</b>	<b>1.0714</b>	<b>.26227</b>
African Traditional	2	1.0000	.00000
<b>Educational Level</b>			
No Formal Education	10	1.0000	.00000
Primary School Education	<b>24</b>	<b>1.1667</b>	<b>.38069</b>
Secondary Education	22	1.0909	.29424
Tertiary	<b>4</b>	<b>1.5000</b>	<b>.57735</b>

<sup>a</sup> it cannot be computed because the standard deviations of both groups are 0

According to the data, participants with 21 to 26 years of age ( $M = 1.5000$ ,  $SD = .57735$ ) believed that the PBW collection and trading are compatible with the culture in their setting. Unmarried participants ( $M = 1.2500$ ,  $SD = .44233$ ) were associated with the dynamics more than others. The female participants ( $M = 1.1500$ ,  $SD = .36162$ ) also believed that the culture is in tandem with the PBW collection and trading. From the data, it could be seen that participants with 5 to 8 family members ( $M = 1.2308$ ,  $SD = .42967$ ) and 1 to 4 members ( $M = 1.1429$ ,  $SD = .36314$ ) believed that their culture is aligned with the collection and trading of PBW.

This, however, failed to translate to their significant engagement in the collection and trading when one looks at what was recorded under economic dynamics. Participants who practice Christianity ( $M = 1.1333$ ,

$SD = .34575$ ) and Islam ( $M = 1.0714$ ,  $SD = .26227$ ) connected with the culture compatibility variable. The analysis also established that participants with tertiary education ( $M = 1.5000$ ,  $SD = .57735$ ) and primary school education ( $M = 1.1667$ ,  $SD = .38069$ ) subscribed to the culture compatibility than those who owned other educational qualifications or no formal education. This result is in agreement with the earlier outcome, which indicates holders of primary and tertiary education qualifications are more attuned to social and economic dynamics. For further understanding of the participants' collection of PBW, specific attitudinal and knowledge variables are examined along with the individual demographics using the Pearson chi-square tests analytical approach. Data in Table 6 show that educational qualification

( $r = 34.946$ ,  $df = 9$ ,  $p < .000$ ), family size ( $r = 26.682$ ,  $df = 6$ ,  $p < .000$ ), religion ( $r = 10.571$ ,  $df = 3$ ,  $p < .014$ ), marital status ( $r = 19.810$ ,  $df = 9$ ,  $p < .019$ ), and age ( $r = 19.250$ ,  $df = 9$ ,  $p < .023$ ) are more associated with collection of PBW.

The significant association of educational qualification with the collection could be more discerned from the fact that the participants need to have adequate knowledge of the availability of PBW generation around them before going for collection. The family size as a factor also indicates that the participants considered the number of

their family members, which must be catered for in terms of economic survival before engaging in the collection and trading of PBW.

This position is not quite different for religion, marital status and age association with the collection. In specific terms, these results suggest that the need to ensure the socioeconomic well-being of themselves and others facilitated a knowledge of PBW collection. Data in Table 7 expands our understanding of how the demographics of the participants resonated with their knowledge of collecting PBW.

**Table 6**  
Association between Demographics and Knowledge of Plastic Bottle Waste Collection

Variable	Case	Value	Df	Asymp. Sig. (2-sided)
Gender	40	2.351	3	.503
Age	<b>38</b>	<b>19.250</b>	<b>9</b>	<b>.023</b>
Marital Status	<b>40</b>	<b>19.810</b>	<b>9</b>	<b>.019</b>
Family Size	<b>38</b>	<b>26.682</b>	<b>6</b>	<b>.000</b>
Religion	<b>40</b>	<b>10.571</b>	<b>3</b>	<b>.014</b>
Ethnicity	40	8.254	6	.220
Educational Level	<b>38</b>	<b>34.946</b>	<b>9</b>	<b>.000</b>
Residential Location	40	17.143	6	.009

**Table 7**  
Dominant Demographic by Knowledge of Plastic Bottle Waste Collection

Age	N	Mean	Standard Deviation
15-20 Years	<b>4</b>	<b>16.0000</b>	<b>.00000</b>
21-26 Years	4	15.5000	.57735
33-38 Years	<b>16</b>	<b>16.0000</b>	<b>1.03280</b>
39 Years Above	<b>14</b>	<b>16.5714</b>	<b>1.45255</b>
<b>Marital Status</b>			
Single	<b>8</b>	<b>16.2500</b>	<b>.46291</b>
Married	<b>20</b>	<b>16.5000</b>	<b>1.23544</b>
Divorced	2	15.0000	.00000
Separated	10	15.8000	1.22927
<b>Family Size</b>			
1-4 Persons	<b>14</b>	<b>16.0000</b>	<b>.96077</b>
5-8 Persons	16	15.7500	1.12546
More than 8 Persons	<b>8</b>	<b>17.5000</b>	<b>.53452</b>
<b>Religion</b>			
Christianity	<b>20</b>	<b>16.2000</b>	<b>.89443</b>
Islam	<b>20</b>	<b>16.2000</b>	<b>1.36111</b>
African Traditional	-	-	-
<b>Educational Level</b>			
No Formal Education	<b>8</b>	<b>17.5000</b>	<b>.92582</b>
Primary School Education	12	15.8333	1.26730
Secondary Education	<b>14</b>	<b>15.8571</b>	<b>.66299</b>
Tertiary	<b>4</b>	<b>16.5000</b>	<b>.57735</b>

According to the data, participants who indicated over 39 years (M = 16.5714, SD = 1.45255), 33-38 years (M = 16.0000, SD = 1.03280) and 15-20 years (M = 16.0000, SD = .0000) as their age associated with the knowledge than others. This finding is in line with the earlier position that those who have the responsibility for taking care of family members engage in the collection and trading of PBW. This is further enhanced by the data that establish that married participants (M = 16.5000, SD = 1.23544) are associated with the knowledge more than others. The connection of the participants who were not married (M = 16.2500, SD = .46291) also resonates with the previous position that the level of unemployment

rate influences participation in collection and trading of PBW, which is further enshrined with a significant number of participants of more than 8 people (M = 17.5000, SD = .53452) and 1-4 people (M = 16.0000, SD = .96077) as family members who must be catered for. In terms of religion, participants who practice Islam (M = 16.2000, SD = 1.36111) and Christianity (M = 16.2000, SD = .89443) are linked with the knowledge more than others. Like what was obtained in the previous results, participants who have no formal education (M = 17.5000, SD = .92582) tertiary education (M = 16.5000, SD = .57735) and secondary school education (M = 15.8571, SD = .66299) linked with the

**Table 8**  
Association between Demographics and Plastic Bottle Waste Collection as a Business

Variable	Case	Value	Df	Asymp. Sig. (2-sided)
Gender	<b>62</b>	<b>8.449</b>	<b>2</b>	<b>.015</b>
Age	<b>60</b>	<b>18.396</b>	<b>10</b>	<b>.049</b>
Marital Status	62	12.113	8	.146
Family Size	60	3.941	4	.414
Religion	<b>60</b>	<b>32.005</b>	<b>4</b>	<b>.000</b>
Ethnicity	62	.633	4	.959
Educational Level	60	5.937	6	.430
Residential Location	62	3.195	4	.526
Year of Exposure to PBW	62	21.596	18	.250

**Table 9**  
Dominant Demographics by Plastic Bottle Waste Collection as a Business

Age	N	Mean	Standard Deviation
14 and below	<b>14</b>	<b>4.7143</b>	<b>.91387</b>
15-20 Years	6	4.0000	.00000
21-26 Years	4	4.0000	.00000
27-32 Years	2	4.0000	.00000
33-38 Years	<b>20</b>	<b>4.1000</b>	<b>.30779</b>
39 Years Above	14	4.0000	.00000
<b>Gender</b>			
Male	<b>22</b>	<b>4.3636</b>	<b>.65795</b>
Female	40	4.1000	.44144
<b>Religion</b>			
Christianity	30	4.0667	.25371
Islam	<b>28</b>	<b>4.1429</b>	<b>.52453</b>
African Traditional	<b>2</b>	<b>6.0000</b>	<b>.00000</b>

knowledge. This result is surprising when one considers the place of those who lack formal education. From the data, it could be concluded that those who collect PBW are mostly those who have no formal education and university graduates who need to overcome unemployment problems.

While educational qualification and family size dominated the association of demographics with the knowledge of collecting PBW, the data in Table 8 indicate that religion ( $r = 32.005$ ,  $df = 4$ ,  $P < .000$ ) and gender ( $r = 8.449$ ,  $df = 2$ ,  $P < .015$ ), followed by age ( $r = 18.396$ ,  $df = 10$ ,  $P < .049$ ), are better in understanding the place of demographics in knowledge and attitudes of seeing PBW collection as a business. These results are explored further in Table 9, where individual demographics explain the association.

Table 9 entails data that points out the key demographics that connect with the PBW collection as a business. Participants who are 14 years and below ( $M = 4.7143$ ,  $SD = .91387$ ) and those within 33-38 years ( $M = 4.1000$ ,  $SD = .30779$ ) considered PBW collection as a business than other age categories. Data also indicate that male participants ( $M = 4.3636$ ,  $SD = .65795$ ), those practicing African Traditional ( $M = 6.0000$ ,  $SD = .00000$ ) and Islam ( $M = 4.1429$ ,  $SD = .52453$ ) considered the collection as a business.

## 11. Discussion of Findings

The substantial correlation between educational qualification, family size, religion, marital status, and age with a sample of PBW demonstrates that participants do not regard socioeconomic issues as a barrier to participation. In terms of knowledge and attitudes toward PBW as a business, particular references to religion, gender, and age demonstrate that these demographics do not prevent participants from perceiving economic and social benefits from engaging in PBW collection for trading. These findings are more understandable when livelihood theory is assumed, which states that cultural environments can produce mindset variations (Baskerville, 2003) as well as entrepreneurial behaviour differences (North, 1990; Shane, 1994), whereas the centre of any business pursuit can construct social relationships and bonds that promote belief rather than opportunism. The social relationships and bonds components of livelihood theory are well-documented by findings that show interpersonal relationships between PBW collectors and traders at various stages of the PBW value chain about financial capital captured by the actors (Wu and Zhang, 2019; Gall et al., 2020). The study reveals that economic dynamics have a greater influence on participants' experiences than social dynamics. This conclusion is consistent with prior research showing that rubbish picking is frequently motivated by economic need, with persons engaging in these activities to supplement their income or make a livelihood in the

absence of official work alternatives (Medina, 2010; Solaja, et al., 2023). The study finds that age, married status, gender, family size, religion, and education level are all connected with participants' perceptions of social dynamics during PBW collection. This finding is consistent with existing literature that highlights the importance of socio-demographic characteristics on waste collectors' social contacts, community attitudes, and experiences of marginalization (Medina, 2010; Garcia et al., 2018; Solaja 2019). Similarly, the study discovers that participants' demographics correlate with their perceptions of economic dynamics in PBW gathering and trade. This is consistent with earlier studies emphasizing waste collectors' socioeconomic vulnerabilities and livelihood choices, with demographic characteristics influencing their access to resources, income opportunities, and economic results (Roy, 2010; Ojo et al., 2017). According to the study, participants' demographics have an impact on their cultural perspectives on the compatibility of PBW gathering and trade. While this finding is less prevalent in the literature, it emphasizes the need to take cultural norms and beliefs into account when developing waste management methods, particularly in communities where cultural values may influence individuals' views toward certain activities (Adetola et al., 2018; Khan et al., 2021).

Educational degree, family size, religion, marital status, and age are identified as key factors affecting PBW collection in the study. These findings support earlier research that has highlighted the significance of socioeconomic variables, family obligations, and demographic features in affecting individuals' participation in waste-picking activities (Medina, 2010; Lwasa et al., 2019). According to the study, educational qualifications, family size, religion, gender, and age all have a major impact on knowledge and attitudes concerning PBW collection as a company. This finding is consistent with previous research indicating that numerous socio-demographic characteristics and cultural norms influence people's perceptions of rubbish picking as a realistic economic opportunity (Garcia et al., 2018; Solaja et al., 2023). Younger participants, notably those aged 14 and under, people aged 33 to 38, male participants, and those who practice African Traditional and Islamic religions are more likely to see PBW collection as a business opportunity. This research sheds light on the demographic characteristics of those who see waste picking as a viable business enterprise, which may differ across cultural and socioeconomic contexts.

## 12. Conclusions

The escalating global challenge of plastic bottle waste is deeply rooted in the pervasive use of plastic bottles, compounded by a troubling societal indifference to proper disposal practices. This environmental crisis, with its far-reaching impact on human well-being and



ecological balance, has taken an unexpected turn. Plastic waste, once perceived only as a threat, has now become an unexpected business opportunity for individuals who collect plastic bottles. The study, conducted in the Ijebu region of Ogun State, Nigeria, shed light on the complex interplay of socio-demographic factors that influence plastic bottle waste (PBW) collection. In particular, the study highlights the significant correlation between educational qualification, family size, religion, marital status, age, gender, and place of residence with the practice of collecting plastic bottle waste. These factors emerged as key determinants influencing the attitudes and knowledge of individuals involved in plastic bottle waste collection, highlighting the multifaceted nature of this informal sector. Amidst the environmental challenges posed by plastic pollution, the study shows that waste collectors, who are often marginalized, not only play a crucial role in waste management, but also contribute to a circular economy. Their activity goes beyond simply collecting waste and has evolved into a livelihood that combines environmental awareness and entrepreneurial initiatives. In light of these findings, policy makers should recognize the central role of plastic bottle waste collectors in the broader waste management landscape. The provision of basic support, facilities, and formal recognition for these individuals is essential to promote an inclusive circular economy. This approach addresses not only environmental sustainability issues, but also the socio-economic challenges associated with plastic waste. Given the pressing global problem of plastic pollution, recognizing and empowering those who collect plastic bottles is an important step towards a more sustainable and equitable future.

### Acknowledgements

Solaja thanks the Needham Research Institute, Faculty of Asian and Middle Eastern Studies, Cambridge University for a workshop on the Social life of plastic with the support of the UK Research and Innovation Grant, United Kingdom, held on 7th to 8th November 2019.

Fielding thanks the Leverhulme Trust for a Fellowship (RF-2019-474).

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## Ispitivanje sociodemografskih karakteristika i razumevanje poslovnih faktora među sakupljačima plastičnog otpada u državi Ogun, Nigerija

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### INFORMACIJE O RADU

Primljen 23 januar 2024

Prihvaćen 03 jul 2024

Naučni rad

Ključne reči:

Teorija sredstava za život

Sakupljači plastičnog otpada

Ljudski, društveni i finansijski kapital

### I Z V O D

Ovaj rad istražuje sociodemografska i ekonomska iskustva sakupljača i trgovaca plastičnim otpadom (PO) u gradu Ijebu-Ode, država Ogun, kroz ankete i produbljene intervjuje. Rad koristi teoriju sredstava za život kao kontekst. Istraživanje je pokazalo da su obrazovanje, veličina porodice, religija, bračni status i starost više povezani sa sakupljanjem PO, dok su religija, pol i starost pogodniji za razumevanje znanja i stavova ljudi koji sakupljaju PO radi profita. Civilizacija, moderna kultura i potrošački obrasci, populacija, tehnologija i industrijski rast uticali su na generisanje i sakupljanje otpada za većinu ljudi. Niske stope reciklaže, neefikasne mere odlaganja otpada i nedostatak znanja o reciklaži otpada ometaju sakupljanje komunalnog otpada i razvoj ovog posla. Da bi se poboljšao ekonomski i socijalni položaj sakupljača i trgovaca i smanjio uticaj PO na životnu sredinu, predlaže se izgradnja objekta i donošenje mera za formalizaciju ovog posla.