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From Waste to Wealth: Investigating the Economic Contributions of Primary Waste Scavengers in Yola North Urban Area, Nigeria

[1]Farouk Idi Yusuf, [2]Hafiz Ismail

[1]Department of Geography
Federal College of Education,
Yola,
Adamawa State.

[2]Department of Economics
Federal College of Education,
Yola,
Adamawa State.

Email: farouk.idi@fceyola.edu.ng

Abstract

Poor waste management and extreme poverty are twin challenges that threaten most of the cities of Nigeria including Yola north urban area, presenting waste scavengers as an alternative for solutions. This research paper explores the economic contributions of primary waste scavengers (i.e waste pickers) in Urban Yola North, highlighting their significant contribution in turning waste into money. The paper focuses on how scavenging helps to build a more sustainable urban environment by producing cash, employment, and raw materials for the recycling sector. Drawing on a sample of 205 waste scavengers through surveys and interview, the findings reveal that majority (88.73%) derive economic benefits from their work; in addition to 1.95% presented environmental motivations. More than half of the respondents (54.15%) report a monthly income between N11,000 and N20,000, with smaller proportions earning higher incomes. These findings offer valuable insights into the economic contributions of waste scavengers in Urban Yola North. This research expands our understanding of waste-to-wealth initiatives in similar urban settings, laying the groundwork for broader discussions and strategies to enhance the well-being and livelihoods of waste scavengers, ultimately contributing to sustainable livelihoods in urban centres. The study recommends provision of social security such as social assistance programs and other interventions to reduce their social exclusion, and employer and employee rights should be maintained by law, between the waste pickers and their masters (middlemen) in order to reduce extortion in the industry. Formalization of the occupation will also be considered to improve the nature of their operation and ensure their safety.

Keywords: *Waste scavenger, Environmental, Economics, Wealth, Yola*

INTRODUCTION

Solid waste management and poverty have both become a topic of growing concern in less developed countries. Poverty is so prevalent that 'no poverty' forms the very foundation of

Author for Correspondence

the Sustainable Development Goals (SDGs). In this context, waste scavenging emerges as a potential solution, offering a glimmer of hope for tackling both issues simultaneously and promoting environmental and economic sustainability.

Researches reveal a significant portion of the population in developing countries, roughly 20 million people according to estimates (Medina, 2010; Rava Zolnikov, 2023), turn to waste scavenging to make a living (Muhammad & Manu, 2013). These "waste pickers" or "recyclers" (Yusuf *et al*., 2022; Kodia *et al*., 2023) play a crucial role in resource recovery and environmental sustainability (Yusuf *et al*., 2022; Gutberlet *et al*., 2020). They sift through mountains of refuse, salvaging valuable recyclable materials like plastic, metal, and glass. These materials are then sold to middlemen for processing, diverting waste from landfills and reducing the demand for virgin resources. This translates into a positive environmental impact by promoting recycling and minimizing environmental pollution.

The economic benefits of waste scavenging are undeniable. These informal workers act as a vital link in the recycling chain, supplying raw materials that fuel recycling enterprises (Muktar, 2011; & Bonini-rocha *et. al*., 2021). This not only creates additional jobs in the recycling sector but also contributes to the production of new products made from recycled materials. Furthermore, waste scavenging offers a vital source of income, particularly for those lacking formal education or job skills in developing countries with high unemployment rates (Christine, 2012). A study in Nigeria even found some waste pickers earning incomes exceeding the minimum wage (Irabor *et al*., 2017). For these individuals, waste scavenging provides a lifeline, a means to support themselves and their families.

However, the harsh realities faced by waste pickers paint a grim picture; the working conditions are often hazardous and exploitative. Scavengers typically work long hours exposed to a toxic cocktail of harmful elements – polluted dust, hazardous chemicals, and sharp objects (Kyella *et. al., 2024)*. The lack of proper safety equipment further exacerbates these health risks (Magaji & Dakyes, 2011; Afon, 2012). Respiratory diseases, skin infections, and even skeletal disorders are common health problems plaguing these workers. Adding to their woes is exploitation by middlemen who pay them low prices for the collected materials. The informal nature of their work excludes them from social security benefits, leaving them with limited bargaining power and vulnerable to manipulation.

The issue becomes even more complex with the involvement of children in waste scavenging. Poverty and lack of educational opportunities force some families to push their children into this hazardous work, jeopardizing their health, well-being, and childhood (Michael, 2014). The presence of young boys seeking Islamic education ("Almajiri") working alongside adults in waste scavenging markets further highlights the vulnerability of children in this sector (Yusuf *et al*., 2021). This practice not only robs them of their education but also exposes them to the same health risks faced by adult waste pickers.

Despite its challenges, waste scavenging emerges as a surprising source of economic empowerment in Nigeria, particularly relevant in Yola North, Adamawa State, which faces a high unemployment rate of 24.6% (Hamidu & Babangida, 2020). In the same vein, waste scavengers divert waste from dumpsites, streets, gutters, and uncompleted buildings, reducing reliance on virgin resources and feeding the recycling industry. By examining their role in Urban Yola North, this study sheds light on the economic potential of waste scavenging

and the importance of recognizing waste pickers as key players in reducing unemployment and in circular economy.

METHODOLOGY

The study was carried out at the Yola North metropolitan area (Jimeta) which is situated 616 meters above sea level in the northeastern region of Nigeria. It is situated between 9^0 12" and 9^0 20" north of the equator and between 12^0 20" and 12^0 28" of the Greenwich meridians in longitude. The population of the city is 307, 505 people (National Population Commission, 2022). The city served as a haven for refugees from Bokoharam's recent conquest of nearby Borno state cities like Chibok, Gwoza, Kwanduga, and Mubi, Michika, and Madagali in southern Adamawa state. Due to the lack of training, qualifications, or initial funding, scavenging job has become more common among the migrant population.

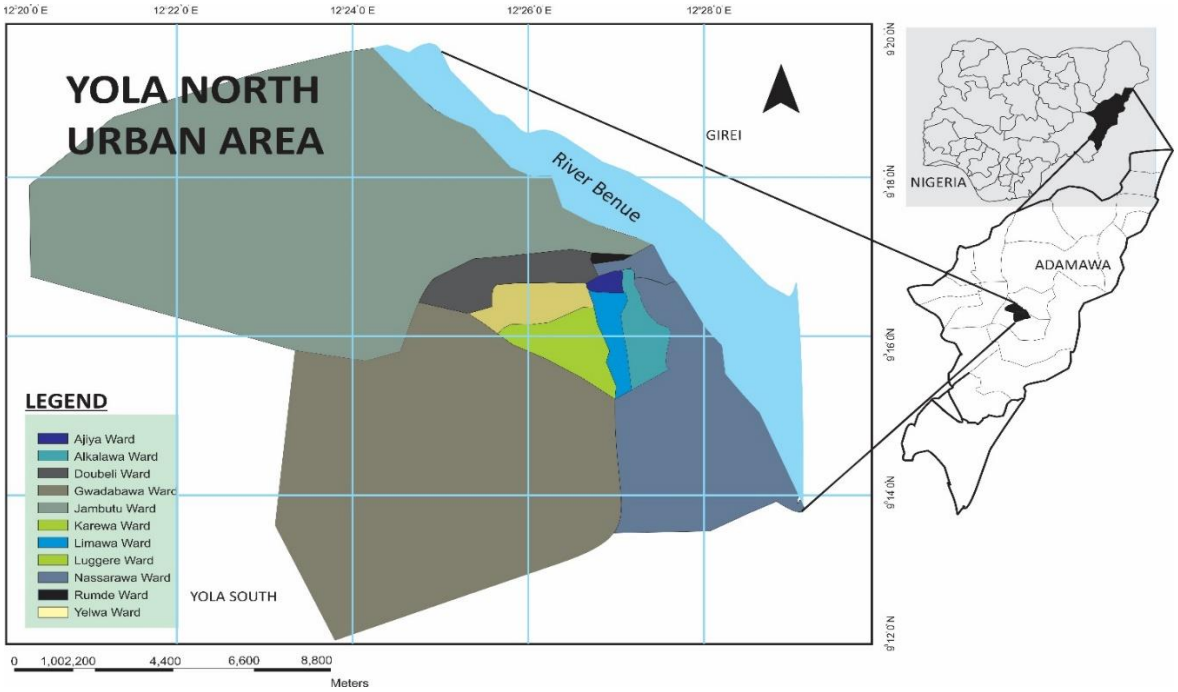

Fig 1: Map of the study Area.

Sample and Sampling Procedure

Waste scavengers in everywhere are hard to reach hustlers due to their mobile nature, difficult to be located at specific time and dumpsites (Ali *et al*., 2021). This has left the researcher with no option than to target them at their middlemen shops (secondary scavengers) where the recyclables are weighed and bought, known as middlemen shops. Middlemen act as intermediaries in the recycling chain, buying and storing waste recyclables before transferring them for final recycling. The markets include Jimeta byepass, Rumde baru, Bayan Shopping Complex and Jambutu.

The challenge in finding the record of the scavengers necessitate the employment of non-probability sampling techniques, involving the purposive and snowball sampling technique used in locating recyclable materials collection depots, and in identifying scavengers for questionnaire administration.

However, the inclusion of each category of scavengers such as aluminum and cables, carton boxes, Leather and Rubber has been considered. Within these categories, 205 waste scavengers were sampled for questionnaire and interview. The visits to the sampled locations were between 3pm and 6pm, when waste scavengers arrived at the middlemen markets to sell their recyclable items. Subsequently, the results were presented in simple frequency and percentages table.

RESULTS AND DISCUSSION

According to Table 3.1 findings, every responder was male. This indicates that waste scavenging is a male-dominated activity in the research area, which may be explained by the northern Nigerian people's cultural ban on women engaging in this kind of informal work (Ali *et al*, 2021). Children and teenagers make up the majority of those who work at scavenging rubbish (50%). Given that the majority of these kids don't attend school at all and are constantly exposed to risks at work and in the environment, this is cause for concern. It was found that a sizable portion of waste scavengers' 46.86% are illiterate and lack the fundamental skills needed to work in the official economy, leaving them with little choice but to participate in waste.

Table 3.1: socio-economic background of the respondents

Characteristic	Frequency	Percentage	Characteristic	Frequency	Percentage
Sex			**Working Experience**		
Male	205	100	1 year below	71	34.63
Female	0	0	2-5 years	74	36.10
Total	*205*	*100*	6-10 years	26	12.68
Age			11 and above	34	16.59
18 and below	101	49.27	*Total*	*205*	*100*
19-29	71	34.63	**Working Season**		0.00
30-39	18	8.78	All Seasons	117	57.07
40 and above	15	7.32	Dry season	76	37.07
Total	*205*	100.00	Rainy Season	12	5.85
Educational Level			*Total*	205	100¬
None	96	46.83	**Working Hours**		
Primary	76	37.07	1-5 Hours	102	49.76
Secondary	33	16.10	6-11 Hours	101	49.27
Tertiary	0	0.00	12 and above Hours	2	0.98
Total	*205*	100.00	*Total*	*205*	100.00

Table 3.2 explored the socio-economic benefits that were derived by waste scavengers in the study area where it revealing that 88.78% of the respondents confirmed that they derived economic benefit from the scavenging job, while 1.95% appreciate that they are doing contributing their quota towards environmental sustainability. 7.80% confirmed that they are doing this for both economic and environmental benefits. Surprisingly 1.46% of the scavengers do it for Out of Joy only.

Probing further, 77.56% of the scavengers affirm to have acquired personal properties from scavenging income. 12.20% opined that said they have never acquired any reasonable form of personal property with the little income generated from scavenging. While the remaining 10.24% cried that they could not appreciate the fact that they have little to eat out the earnings.

But nothing good more comes out of the business. The classes or types of materials acquired from the income generated from scavenging according to respondents are;
The first class of waste scavenger who possessed some properties such as clothes, phones and shoes and food out of the little savings from the business account for 61.95%. While class two which is higher in earnings claimed to have possessed bicycles, motorcycles and grinding machines among others, stand at 29.27%. Class three which account for 7.32% earned as much as more than just necessities. They afford to have purchase fixed assets like land, houses. Finally, the least earned (1.46%) only afford to buy feet for themselves.

Furthermore, the lucrativeness of resource recovery by scavengers is exhibited in the estimated monthly income of the respondents. Most scavengers (54.15%) fall within the income range of N11, 000 - N20, 000 per month, followed by (10.24%) who fall within the monthly income range ofN21, 000 - N30, 000. In the same vein 6.34% acknowledged their monthly income falls between N31, 000-N40, 000 while 1.46% are within the ranges of 41,000-50,000. None with more than 50,000.

It is interesting to know that majority of the respondents affirmed the fact that scavenging has provided or partially provided them with a gainful employment where they derived their livelihood, in the face of unemployment that characterises the community, and hence, the larger Nigerian society.

The data analysed on the mode of payment of recruited scavengers showed that 59.51% are paid on daily basis. A total of 10.24% are paid on weekly basis, 2.93% monthly, while the remaining 27.32% are been paid base on their demand for money.

Table 3.2: Socio-Economic Benefits of Resource Recovery from Solid Waste to Practitioners

	Frequency	**Percentage**
Benefit Derive		
Economical	182	88.78
Environmental	4	1.95
Both (Economical & Environmental)	16	7.80
Out of Joy	3	1.46
Others	0	0.00
Total	*205*	*100.00*
Acquisition of Materials		
Yes	159	77.56
No	25	12.20
Neutral	21	10.24
Total	*205*	*100.00*
Materials Acquired		
Class I (Basic Necessities)	127	61.95
Class Il (Improved Living Standards)	60	29.27
Class Ill (Fixed Assets)	15	7.32
Class IV (Limited Income)	3	1.46
Total	*205*	*100.00*
Estimated Monthly Income of Scavengers		
N1,000 -10,000	57	27.80
NI 11000 - N20000	111	54.15
N21000 - N30000	21	10.24
N31000 - N40000	13	6.34

N41000 - N50000	3	1.46
N51000 and above	0	0.00
Total	*205*	*100.00*
Mode of Payment		
Daily	122	59.51
Weekly	21	10.24
Monthly	6	2.93
Payment on request	56	27.32
Total	**205**	100.00

When digging further the results of the study alongside the findings of Nuhu *et al*. (2022), Vimtim *et al*. (2018), and Kodia *et al*. (2023), several noteworthy insights emerge, offering a deep understanding of the socioeconomic dynamics within this occupational sphere. The study portrays a landscape where waste scavengers predominantly earn moderate incomes, with the majority falling within the range of N11,000 to N40,000 per month. This aligns closely with the broader picture painted by Vimtim *et al*. (2018), who also noted comparable income brackets among scavengers in Mubi town of Adamawa state. However, Nuhu *et al*. (2022) presents a somewhat higher income range, with scavengers potentially earning up to N40,000 per month, although through weekly wages ranging from N6,000 to N10,000 in Rigasa, Kaduna state. This discrepancy suggests varying economic realities across different study areas or demographic profiles within the scavenger community.

In terms of asset possession, the study reveals a complex narrative. While a minority of scavengers achieve financial stability, enabling them to acquire fixed assets such as land or houses, the prevalence of such ownership remains relatively low. This contrasts with the findings of Nuhu *et al*. (2022), who report a significantly higher proportion of scavengers owning their houses, indicating potentially divergent socioeconomic circumstances or local economic conditions. Moreover, the ownership of motorcycles, a significant asset for mobility and livelihood enhancement among scavengers, exhibits notable disparities between studies. In the same vein, Nuhu *et al*. (2022) highlights a substantial ownership rate of motorcycles among scavengers, suggesting variations in resource access and economic opportunities across different research contexts. The findings shows similar trend in regard of posing assets and mobility in the study area.

Motivationally, the study underscores financial gain as the primary driving force behind waste scavenging, resonating with the overarching theme of economic necessity prevalent among marginalized communities. This emphasis on financial incentives aligns with the broader discourse on informal economies and livelihood strategies adopted by vulnerable populations to meet their basic needs.

Finally, the payment modalities employed within the scavenging ecosystem exhibit notable variability across studies. The study's findings indicate a prevalent reliance on daily wage structures, reflecting the precarious nature of scavengers' employment arrangements and the immediate financial demands they face. In contrast, Nuhu *et al*. (2022) highlights a more structured payment system with weekly disbursements, potentially offering greater stability for scavengers.

Essentially, although there are similarities in income levels and the overall socioeconomic aspects of waste scavenging found in different studies, the differences in how assets are owned, what motivates scavengers, and how they are paid highlight the complex influence of

local factors on scavengers' livelihoods. Recognizing these details is critical for developing specific interventions to improve the economic stability and welfare of waste scavengers in various socio-environmental settings.

CONCLUSION

While unveiling a surprising solution in Yola North, this study explores how primary waste scavenging tackles poverty and waste management challenges simultaneously. It found that waste picking offers significant economic benefits, with majority earning between N11,000 and N20,000 monthly by transforming waste into recyclables. This income generation, coupled with environmental motivations, contributes to a more sustainable city. To maximize this positive impact and empower waste pickers, the study recommends actions like social security programs, legal protections, and formalizing the occupation. Additionally, improvements to working conditions are crucial, including providing personal protective equipment (PPE) and safety training. Furthermore, establishing a strong waste pickers' union from the bottom would allow them to advocate for their rights and secure fair compensation. Microfinance strategies like mobile money accounts and savings groups can also offer financial security for waste pickers. Finally, a program rewarding responsible waste collection with financial incentives could further enhance waste management and picker well-being. By implementing these recommendations, Yola North and other Nigerian cities can harness the full potential of waste-to-wealth initiatives, creating a more sustainable future for both waste management and waste pickers.

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