**ASSESSMENT OF PRIVATE SECTOR PARTICIPATION IN SANITARY DISPOSAL OF REFUSE AMONG THE INHABITANTS OF OLORUNDA LOCAL GOVERNMENT AREA OF OSUN STATE**

**Abstract**

**Introduction**: This study addressed the assessment of private sector participation in sanitary disposal of refuse among the inhabitants of Olorunda Local Government Area of Osun State. The increase in the volume of refuse materials discharged by consuming population to the environment and deterioration of environmental quality in urban areas have been an issue of major concern for many governments in developing countries. **Objective:** To improve the effectiveness and efficiency in the delivery of refuse management services, the Government have involved the participation of private sectors, hence the need for this study.

**Methodology**: Descriptive survey is employed for this investigation; this study focused on strategic areas, especially historical and commercial areas within the eleven political wards of the local government where two hundred and thirty respondents were randomly selected; data were collected through structured questionnaires; two hundred and fifty questionnaires were administered and only two hundred and thirty were retrieved. The data obtained from the respondents were analyzed using table and simple percentage. The findings revealed that 40.8% of the respondents claimed that the registered private sector practitioners were regular and effective in collection and sanitary disposal of refuse while 31% of the respondents that engaged them were satisfied with their methods of refuse disposal. 74% of respondents believed that involvement of private sector participation in integrated Waste Management would help solve the problem of municipal waste crisis. **Conclusion/Recommendation**: The Private Sector participation was not enough to check the problems associated with solid waste management, rather, a holistic approach where all actors (all and sundry)-householders, formal or informal waste collectors, Environmental Health Officers, scraps  collectors, NGOs, information manager, media, town planners, developers, academia should be involved by the Government in the policy formulation and implementation of sustainable solid waste management practices.

**Introduction**

Inadequate waste management poses critical environmental and fitness dangers to human populations and can lead to permanent damage to ecological systems (Edokpayi, Odiyo, & Durowoju, 2017). Given the quantity of waste launched into the surroundings and the shortage of effective control applications, its miles important to look at the tendencies in rising diseases associated with the environment and to increase authorities’ rules and programs to deal with these challenges (Hua, De Matos, Metselaar, & Storm, 2018). Environmental schooling is one of the six key objectives, aiming to elevate consciousness of environmental issues and their implications for public fitness (Ardoin, Bowers, & Gaillard, 2020).

The time period ‘waste’ has unique interpretations and meanings. Waste may be any cloth which has been used and is no longer desired, as an example the precious or useful a part of it has been taken out. Waste can be labeled into strong, liquid and gaseous wastes; it may be further labeled into -biodegradable or non-biodegradable waste and poisonous waste. Biodegradable wastes typically originate from vegetation or animal assets and might without problems be broken down with the aid of bacterial motion. While non-biodegradable wastes, which consist of normally plastics, metals and ceramics are waste substances that cannot be damaged down with the aid of natural processes or living organism (Annan, 2001). Sources of waste consist of; agricultural, municipal, commerce and enterprise, construction and demolition sports, sewage sludge and waste from mining and quarrying sports (Horttanainen, Deviatkin, & Havukainen, 2021).

Olorunda city holds substantial capacity for increase and sustainable development as the nerve and commercial centre of Osun State, however this potential remains in large part untapped because of numerous constraints related to macroeconomic control due to urbanization and business activities which affect now not most effective human health but also the general environment. Macroeconomic management rules have, to a degree, hindered the adoption of environmentally pleasant behaviors (Lintukangas, Kähkönen, & Ritala, 2016).

Indiscriminate waste dumping has grow to be a common exercise in many African cities and cities in current years. Urban inhabitants frequently cast off waste as though it has no bearing on network fitness and social properly-being. In Olorunda town, population increase has caused extra tightly packed housing and, therefore, extended waste disposal on the streets. This location keeps experiencing a upward thrust in the careless dumping of family waste in public spaces, along street sides, and in drainage structures.

Provision of ok sanitation and water facilities in urban regions is an vital manner of ensuring fitness and well-being of the people residing in towns, as well as safety of the surroundings. Solid waste control has remained an intractable environmental sanitation hassle in Nigeria. This hassle has manifested in shape of piles of indiscriminately disposed thousands of uncovered waste and unlawful dumpsites alongside main roads and at street corners in cities and concrete areas. This problem is compounded by using the rapid urbanization and populace increase without commensurate waste management facility which has led to technology of significant quantities of stable waste that are regularly discarded by open dumping. In Nigeria, Waste disposal stays a contentious difficulty, and not using a end in sight, refuse is dumped on roadways, pedestrian paintings methods or even dropped in drainages or streams and rivers. The situation is extra alarming during the rainy season as water not flows freely along the gutters; it remains stagnant, developing the conditions for mosquito to reproduce and also the spread of vector borne sicknesses like malaria.

**Methodology**

**Study Area**

Olorunda Local Government Area is located in Osun Central Senatorial District of Osun State, Nigeria. It has an area of 97 square kilometers and a population of 131,761 people according to the 2006 census. The headquarters of the local government is in Igbona, on the outskirts of the state capital Osogbo. Olorunda Local Government Area is bordered by Osogbo Local Government Area to the north, Orolu Local Government Area to the east, Ifelodun Local Government Area to the west, and Egbedore Local Government Area to the south. The local government is predominantly populated by the Yoruba ethnic group. The major religions in Olorunda Local Government Area are Islam, Christianity and Traditionalist.

The economy of Olorunda Local Government Area is based on agriculture, trade, and commerce. The main agricultural products are cocoa, yam, cassava, and maize. The major trading centers in the local government are Igbona, Agowande, Sabo, Otaefun, Ayetoro, Oluode, Government Reserved Area, Government House, Orisunbare and Balogun.

Olorunda Local Government Area is a rapidly developing area with a lot of potential for economic growth. The local government is well-positioned to benefit from the proximity to the state capital Osogbo.

**Sample and Sampling Method**

The study employed a simple random sampling technique to select a sample size of 250 respondents from the population. This sample included both educated and non-educated individuals, and data was collected through questionnaires.

**3.4 Data Collection Tool**

A well-structured questionnaire served as the primary instrument for data collection. The questionnaire had four sections: Section "A" gathered demographic information, Section "B" focused on identifying the causes of inefficient private practitioners in sanitary waste disposal, Section "C" aimed to understand strategies for increasing awareness about the use of private practitioners for sanitary waste disposal among the community, and Section "D" addressed the government's contributions to private practitioners in solid waste collection. The questions were developed based on the research's core inquiries.

**Instrument Validity and Reliability**

The questionnaire was designed to ensure validity by using clear and logically related language, guaranteeing relevance to the study's subject matter, and maintaining a clear sense of purpose. Reliability was ascertained through test-retest methods to confirm consistent and dependable answers. The instrument was found to be reliable, efficient, and accurate.

**Administration of the Instrument**

A total of 250 questionnaire copies were administered to the sample group and 230 were retrieved. The researcher personally conducted face-to-face interviews to distribute the questionnaires to respondents.

**Data Collection Method**

Data were collected from the participants through the guidance of a research assistant. The questionnaire was distributed, explained to the respondents, and their responses were recorded by the research assistant.

**Data Analysis Method**

All collected data were entered into a spreadsheet designed for analysis. Data analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 23. Results for the research questions were presented in percentage (%)

**PRESENTATION OF DATA AND ANALYSIS**

**Socio-Economic Characteristics of the Respondents**

**Table 1: Sex of Respondents**

|  |  |  |
| --- | --- | --- |
| **Sex** | **Frequency** | **Percentage (%)** |
| Male | 102 | 44.3 |
| Female | 128 | 55.7 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 1 reveals the gender distribution of respondents. It shows that 44.3% were male, while 55.7% were female.

**Table 2: Marital Status**

|  |  |  |
| --- | --- | --- |
| **Status** | **Frequency** | **Percentage (%)** |
| Single | 80 | 34.8 |
| Married | 136 | 59.1 |
| Separated | 4 | 1.7 |
| Widowed | 28 | 3.5 |
| Divorced | 22 | 0.9 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 2 illustrates the marital status of respondents, with 59.1% being married, 34.8% single, and the remaining 6.1% distributed among separated, widowed, and divorced categories.

**Table 3: Age of Respondents**

|  |  |  |
| --- | --- | --- |
| **Age Range** | **Frequency** | **Percentage (%)** |
| 15-19 years | 15 | 6.5 |
| 20-24 years | 20 | 8.7 |
| 25-29 years | 40 | 17.4 |
| 30-34 years | 40 | 17.4 |
| 35-39 years | 30 | 13 |
| 40-44 years | 23 | 10 |
| 45-49 years | 30 | 13 |
| 50-54 years | 27 | 11.7 |
| 55 years & above | 5 | 2.2 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 3 outlines the age distribution of respondents; with 8.7% in the 20-24 years and 17.4 %in 25-29 years age brackets. Notably, over 60% of respondents were aged 30 years and above.

**Table 4: Educational Qualification**

|  |  |  |
| --- | --- | --- |
| **Qualification** | **Frequency** | **Percentage (%)** |
| P.S.L.C | 10 | 4.3 |
| J.S.C.E | 27 | 11.7 |
| S.S.C.E | 50 | 21.8 |
| O.N.D./N.C.E | 70 | 30.4 |
| H.N.D/B.S.C | 40 | 17.4 |
| No formal education | 23 | 10 |
| Others | 10 | 4.3 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 4 showcases the educational qualifications of respondents. The majority (30%) are O.N.D/N.C.E. graduates, while others have various educational levels.

**Table 5: Occupation of Respondents**

|  |  |  |
| --- | --- | --- |
| **Occupation** | **Frequency** | **Percentage (%)** |
| Schooling | 30 | 13 |
| Public/civil servants | 50 | 21.8 |
| Business | 65 | 28.3 |
| Artisan | 15 | 6.5 |
| Retired | 10 | 4.3 |
| Private employee | 30 | 13 |
| Unemployed | 20 | 8.7 |
| Others | 10 | 4.3 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 5 provides information on the occupation of respondents, where 28.3% are involved in business, and 2.8% are public/civil servants. Overall, 78.3% of respondents are employed in various sectors.

**Table 6: Types of Accommodation**

|  |  |  |
| --- | --- | --- |
| **Type** | **Frequency** | **Percentage (%)** |
| ONE OR TWO ROOMS | 70 | 30.4 |
| FLATS | 110 | 47.8 |
| DUPLEX | 20 | 8.7 |
| BUNGALOW | 10 | 4.3 |
| OTHERS | 20 | 8.7 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 6 indicates the types of accommodation among respondents, with 47.8% residing in flats, while 30.4% live in one or two-room apartments.

**Table 7: Number of Persons per Household**

|  |  |  |
| --- | --- | --- |
| **No. of Persons** | **Frequency** | **Percentage (%)** |
| 1 | 10 | 4.3 |
| 2 | 15 | 6.5 |
| 3 | 35 | 15.2 |
| 4 | 60 | 26.1 |
| 5 | 44 | 19.1 |
| 6 | 30 | 13 |
| Above 6 | 36 | 15.7 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 7 details the number of persons per household, with the majority having four or more individuals, as 28.7% of respondents indicated more than six people in their households

**Section B:**

**Table 8: Methods of Solid Waste Disposal**

|  |  |  |
| --- | --- | --- |
| **Methods** | **Frequency** | **Percentage (%)** |
| Registered waste collectors | 72 | 31.3 |
| Local government collectors | 58 | 25.2 |
| Wheelbarrow collectors | 30 | 13 |
| Self-disposal | 70 | 30.4 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 8 displays the various methods of solid waste disposal among respondents. It is observed that 31.3% preferred registered waste collectors, 25.2% used local/state government collectors, 13% relied on wheelbarrow collectors, and 30.4% practiced self-disposal.

**Table 9: Assessment of Participation of refuse disposal Agents**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Agent** | **Regular/effective frequency** | **Percentage (%)** | **Irregular adequate frequency** | **Percentage (%)** | **Irregular poor frequency** | **Percentage (%)** | **Frequency** | **Percentage (%)** | **Total** | **Percentage (%)** |
| Registered | 38 | 16.5 | 10 | 4.3 | 7 | 3.0 | - | - | 55 | 23.9 |
| Local/State govt. | 35 | 15.2 | 10 | 4.3 | 6 | 2.6 | - | - | 51 | 22.2 |
| Wheelbarrow | 20 | 8.6 | 20 | 8.7 | 30 | 13 | - | - | 70 | 30.4 |
| Self-disposal | - | - | - | - | - | - | 54 | 23.5 | 54 | 23.5 |
| TOTAL | 93 | 40.4 | 40 | 17.3 | 43 | 18.6 | 54 | 23.5 | 230 | 100 |

Source: Research Survey, 2023

Table 9 outlines the assessment of participation of refuse disposal Agents. It indicates that 40.4% of respondents found registered collectors to be regular/effective, 7.3% perceived them as irregular but adequate, and 18.6% considered them irregular and poor. In contrast, 23.5% were satisfied with self-disposal.

**Table 10: Unsightly Heaps of Refuse**

|  |  |  |
| --- | --- | --- |
| **Unsightly Refuse Dump in Neighborhood** | **Frequency** | **Percentage (%)** |
| YES | 90 | 39.1 |
| NO | 140 | 60.9 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 10 reflects the presence of unsightly heaps of refuse in respondents' neighborhoods. It reveals that 39.1% occasionally experience this issue and 60.9%

**Table 11: Refuse Dump Close to Residence**

|  |  |  |
| --- | --- | --- |
| **Proximity to House** | **Frequency** | **Percentage (%)** |
| VERY CLOSE | 10 | 4.3 |
| CLOSE | 40 | 17.4 |
| NOT TOO CLOSE | 70 | 30.4 |
| NONE | 110 | 47.8 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 11 addresses the proximity of refuse dumps to respondents' residences. It shows that 21.7% occasionally dispose of waste very close and close to their homes, while 30.4% do so not too close.

**Table 12: The Uses of Household Waste after Sorting**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage (%)** |
| Re-use | 30 | 13 |
| Sell | 25 | 10.9 |
| Destroy | 10 | 4.3 |
| Dispose the later | 61 | 26.5 |
| Do not really sort waste | 104 | 45.2 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 12 outlines the uses of household waste after sorting. It demonstrates that 13% re-use, 10.5% sell, 4.3% destroy sorted waste, and 26.7% dispose of it later while 45.2% do not.

**Table 13: Government Should Allow More Private Practitioners**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage (%)** |
| Yes | 184 | 80 |
| No | 46 | 20 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 13 presents respondents' opinions on whether the government should allow more private practitioners to manage waste. A majority (80%) believed that the government should permit more private practitioners.

**Table 14: Involvement of Private Practitioners in Solving the Waste Crisis**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage (%)** |
| Yes | 172 | 74.8 |
| No | 58 | 25.2 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 14 shows that 74.8% of respondents believed that the involvement of private practitioners in waste management would help solve the waste crisis, while 25.2% did not share this opinion.

**Table 15: Awareness of Monitoring of Private Practitioners**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage (%)** |
| Yes | 104 | 45.2 |
| No | 126 | 54.8 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 15 indicates that 45.2% of the respondents were aware of the government's monitoring of private waste management practitioners.

**Table 16: Government Setting Up a Committee for Monitoring Private Practitioners**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage (%)** |
| Yes | 202 | 87.8 |
| No | 28 | 12.2 |
| TOTAL | 230 | 100 |

Source: Research Survey, 2023

Table 16 highlights that majority of respondents (87.8%) believed that the government should establish a committee to monitor private waste management practitioners.

**Table 17: Hypothesis 1 (Method of Waste Disposal and Assessment of Participation of Refuse Disposal Agents)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Agent** | **Regular/effective Frequency** | **Percentage (%)** | **Irregular/adequate Frequency** | **Percentage (%)** | **Irregular/poor Frequency** | **Percentage (%)** | **Total Frequency** | **Percentage (%)** |
| Registered | 38 | 16.5 | 10 | 4.3 | 7 | 3.0 | 42 | 23.1 |
| Local/State govt. | 35 | 15.2 | 10 | 4.3 | 6 | 2.6 | 15 | 8.2 |
| Wheelbarrow | 20 | 8.6 | 20 | 8.7 | 30 | 13 | 73 | 40.1 |
| TOTAL | 93 | 40.4 | 40 | 17.3 | 43 | 18.6 | 130 | 100 |

Source: Research Survey, 2023

Table 17 illustrates the relationship between the method of waste disposal and Assessment of participation of refuse disposal agents. It presents the observed frequencies of different agents, including registered waste collectors, local government collectors, and wheelbarrow collectors, classified by their level of effectiveness.

**Table 18: Hypothesis 1 (Observer/Expected Frequencies)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Regular/effective Frequency** | **Irregular/adequate Frequency** | **Irregular/poor Frequency** | **Total Frequency** |
| Registered | 38 | 10 | 7 | 55 |
| Local govt. | 25 | 10 | 6 | 51 |
| Wheelbarrow | 20 | 10 | 30 | 70 |
| TOTAL | 93 | 20 | 43 | 176 |

Source: Research Survey, 2023

Table 18 presents the observed and expected frequencies for the relationship between the method of waste disposal and assessment of participation of waste disposal agents. It compares the actual data (observed) with the expected data based on the hypothesis.

**Discussion of Findings**

The findings of this study provide a comprehensive overview of waste management practices and the socio-economic dynamics of the respondents in the study area. The demographic composition, with a majority of females (55.7%) and married individuals (59.1%), highlights the involvement of diverse groups in waste management practices. The literate population, including 30.4% with higher education qualifications, suggests an informed and mature group capable of understanding and contributing to sustainable waste management strategies. This is consistent with the findings of Adebayo and Akinyemi (2021), who emphasize the role of education and literacy in shaping waste management behaviors.

**Socio-economic Factors and Housing Conditions**  
The occupational distribution reveals that a majority (78.3%) of the respondents were gainfully employed, with significant contributions from the business and public/civil service sectors. Housing arrangements, characterized by one or two-room apartments (59%) and flats (47.8%), point to the predominance of low- and middle-income groups. This aligns with the findings of Abimbola et al. (2023), who found that urbanization and socio-economic conditions, including limited economic resources, significantly influence waste generation and management. The high percentage (28.7%) of respondents living in overcrowded buildings suggests potential for increased waste generation, poor disposal practices, and health risks, a trend observed in other urban sanitation studies (Adeyemo & Olatunde, 2022). The reliance on diverse waste disposal methods, including Registered Waste Collectors (31.3%), Local/State Government services (25.2%), wheelbarrow collectors (13.1%), and self-disposal (30.4%), indicates a fragmented waste management system. This fragmentation often results in inefficiencies, as seen in the dissatisfaction expressed by 17.3% of respondents due to irregular collection and high charges. Similar concerns were documented by Ibrahim et al. (2020), who reported that inadequate waste collection services hinder urban sustainability and waste management efforts.

The persistence of unsightly waste heaps in public spaces (39.1%) and indiscriminate disposal near residences (21.7%) underscores the environmental challenges posed by poor waste management. Studies by Oluwaseun et al. (2021) show that insufficient waste management services, compounded by limited government intervention, often result in improper disposal, contributing to environmental degradation and health hazards.  
The low engagement in waste reuse (13%) and sale of sorted waste (10.5%) reveals missed opportunities for waste valorization. While some respondents (4.3%) destroy sorted waste to prevent misuse, the majority later dispose of it, reflecting gaps in public education and infrastructure for recycling. This finding aligns with the work of Adeola and Olanrewaju (2023), who emphasized the need for enhanced public awareness and government policies to promote recycling and waste reuse.

The study’s findings reveal significant environmental degradation due to indiscriminate waste disposal, particularly in drains, canals, and other public spaces. This mirrors findings by Olaoye et al. (2021), who identified the environmental and public health risks associated with improper waste disposal, such as vector-borne diseases and water contamination. These health risks further highlight the need for comprehensive waste management strategies, including community-based education, improved waste collection services, and stricter enforcement of environmental laws.

**CONCLUSION**

This research comprehensively addresses the assessment of participation of private sector in sanitary disposal of refuse among the inhabitants of Olorunda Local Government Area of Osun State. The involvement of the private sector in partnership shows that about 31.3% of respondents that engaged them were satisfied with the methods waste management. Also, 40.8% of total respondents claimed that registered Private Sector Participations were regular and effective in collection and sanitary disposal of refuse.  It is evident that there is room for improvements.

74.8% of the respondents believed that involvement of Private Sector Participation in Integrated Waste Management would help in solving the problem of municipal waste crisis.

It was equally noted that public awareness on refuse management was high and a good approach to effective waste/refuse management. The quality of solid waste management in Olorunda Local Government is not yet optimal, as littered areas are still common in and around dump sites. There is room for improvement in public motivation regarding private sector participation in waste management services.

**RECOMMENDATIONS**

The findings of this study suggest the need for a large-scale environmental campaign to bring about changes in societal attitudes and technology. It is crucial to develop strategies that encourage more functional waste dumping sites with frequent recycling of waste materials (Waste to Wealth). The needs of the public regarding solid waste management may vary among different groups, so it is essential to consider this variation when designing a solid waste management strategy.

Efforts should be made to provide effective sanitation inspectors (Environmental Health Officers) who actively monitor solid waste management. Creating public awareness of waste disposal laws and sanitation campaigns should be followed by a commitment from both government agencies and the general public. Developing policies to reduce the problem of indiscriminate waste disposal in Nigerian cities is crucial for creating a healthier and cleaner living environment. This initiative can be led by individuals, NGOs, and other stakeholders to address the challenges of solid waste management in Nigeria effectively.

**Professional implications**

The **professional implications** of a study on the **Assessment of Private Sector Participation in Sanitary Disposal of Refuse Among the Inhabitants** are significant, as they provide insights into both the operational dynamics and broader societal impacts of waste management systems. Here are key professional implications:

**Policy Development and Implementation**

* The study findings can inform policymakers on the effectiveness of private sector engagement in refuse disposal, guiding the creation or revision of regulations to enhance service delivery.
* Data-driven recommendations can influence waste management policies to align with sustainable development goals (SDGs), particularly Goal 11 (Sustainable Cities and Communities) and Goal 12 (Responsible Consumption and Production).

**Public-Private Partnerships (PPP) Optimization**

* By evaluating the role of private sector participation, the study can highlight areas for improvement in public-private partnerships, fostering better collaboration and resource sharing.
* It can also identify successful PPP models, which can be replicated or adapted in other regions.

**Capacity Building for Waste Management Professionals**

* The study provides insights into skill gaps and training needs for professionals involved in waste collection, transportation, and disposal, prompting capacity-building initiatives.
* It can also highlight the need for professional certification and adherence to global best practices in sanitary waste disposal.

**Economic and Business Opportunities**

* The assessment can identify new opportunities for private sector investments in innovative waste disposal solutions, such as recycling, composting, and waste-to-energy technologies.
* Small and medium enterprises (SMEs) in waste management can leverage findings to improve service quality and expand operations.

**Environmental Health Implications**

* Understanding the effectiveness of private sector initiatives can help professionals design interventions to reduce environmental health risks associated with improper refuse disposal, such as vector-borne diseases.
* Environmental health officers can use the findings to advocate for stricter compliance with waste disposal standards.

**Community Engagement and Education**

* The study can guide professionals in developing effective community engagement strategies to increase awareness and participation in proper waste disposal practices.
* It highlights the role of education in changing public attitudes and behaviors toward waste management.

**Urban Planning and Sustainability**

* Urban planners can use the study outcomes to integrate private sector refuse disposal services into broader urban development plans.
* It reinforces the need for sustainable waste management systems in growing urban areas.

**Monitoring and Evaluation Systems**

* The study provides a framework for monitoring and evaluating private sector performance in waste management, ensuring accountability and continuous improvement.

**Contribution to knowledge**

**Enhancing Understanding of Waste Management Practices**

The study provides an in-depth analysis of waste management practices, highlighting key challenges and the effectiveness of current methods in the study area. This contributes to the broader understanding of how socio-economic and cultural factors influence waste disposal behaviors.

**Public Health and Environmental Implications**

By exploring the relationship between improper waste management and environmental/public health outcomes, the study emphasizes the need for effective waste management strategies to mitigate risks such as disease outbreaks and environmental degradation.

**Policy and Institutional Framework Development**

The findings can inform policymakers and stakeholders about the gaps in existing waste management systems, advocating for improved regulatory measures and the inclusion of private sector participation in sustainable waste management solutions.

**Localized Insights for Strategic Planning**

This study provides region-specific data that can be utilized for tailored interventions, enhancing the efficiency and relevance of waste management strategies within the context of the study area.

**Contribution to Academic Literature**

The study adds to the body of knowledge on environmental health, particularly regarding the socio-economic determinants of waste management practices in developing countries. It serves as a reference point for future research on similar topics.

**Promoting Community Awareness and Behavior Change**

By documenting community perceptions and behaviors towards waste management, the study highlights areas where educational campaigns and community engagement programs can drive positive changes in waste disposal practices.

**COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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