QLANTIC JOURNAL OF SOCIAL SCIENCES

OPEN ACCESS

Pages: 130 – 144
ISSN (Online): 2791-0202
DOI: 10.55737/qjss.vi-i.25298
Vol. 6 | No. 1 | Winter 2025

Research Article | Qlantic Journal of Social Sciences (QJSS)

# The Risk Factors and Problems of Waste Management in Developing Countries as Hurdles

Zubair Ahmad [1] Paolo Esposito [2] Muhammad Ali [3]



**Abstract:** *This study aims to analyze the risk factors and challenges in waste management in developing nations. Waste management strategies vary based on the type of waste, liquid, solid, or organic and include disposal methods such as incineration, burial, recycling, and treatment. The rapid growth of urban populations has led to increased solid waste production, adversely affecting the environment and public health, particularly in informal urban neighborhoods, tribal villages, and rural settlements, where waste management services are often inadequate. A significant barrier in these regions is the lack of education and awareness about effective waste management practices. Unauthorized dumpsites pose severe Environmental risks due to the potential presence of hazardous materials, including radioactive, infectious, and toxic waste. Wealthier individuals are generally more conscious of environmental issues and more proactive in addressing them. Waste managers must ensure public information is clear and consistent with existing knowledge to foster better practices. This study utilized descriptive analysis to assess the relationships between various factors influencing waste management. Survey results indicate insufficient efforts to mitigate odors from dump sites, suggesting a need for greater public awareness. These findings highlight the importance of improving education on comprehensive waste management strategies to reduce environmental and health risks.*

**Key Words:** Waste Management, Risk Factor of Waste Material, Lack of Awareness, Developing Countries Struggles

## Introduction

Due to the impact of the damage that improper trash disposal may do to the environment, people are becoming more conscientious about how and where they throw away their trash. Waste management processes include collecting, transporting, and disposing of trash. Wastes are handled differently depending on their composition and category. Discards are categorized by their outward characteristics and subsequently placed in distinct categories (Marshall, 2013). Wastes can be broken down into three categories: those that are liquid, those that are solid, and those that are organic. There are distinct approaches to waste management for liquid, solid, and organic wastes. Hospital wastes, for example, can be divided into three distinct categories: infectious, extremely infectious, and general. To handle garbage (Wilson, 2013), one must first gather it. Wastes must be separated at the point of collection for this process to go smoothly. The following phase is waste transportation, and this looks different for different types of trash, such as liquid, solid, organic, hazardous, and infectious wastes. The ultimate phase of trash management, waste disposal, includes activities such as burning, burial, recycling, and treatment.

## Waste Management's Significance

The primary goals of waste management are ecological preservation and the improvement of public health and animal welfare. To protect humans and animals, hazardous garbage is dumped in remote areas. If wastes are managed properly, fewer of them will find their way into the environment, hence reducing

[1] Post-Doc Researcher, Department of Law, Economy, Management and Quantitative Methods (DEMM), University of Sannio, Italy. ✉ zahmad@unisannio.it

[2] University of Naples Parthenope, Italy. ✉ paolo.esposito@uniparthenope.it

[3] Senior Lecturer, Department of Economics, Al-Madinah International University MEDIU, Kuala Lumpur – Malaysia. ✉ alimuhammad1447@gmail.com

- **Corresponding Author:** Zubair Ahmad (✉ zahmad@unisannio.it)
- **To Cite:** Ahmad, Z., Esposito, P., & Ali, M. (2025). The Risks Factors and Problems of Waste Management in Developing Countries as Hurdles. *Qlantic Journal of Social Sciences, 6*(1), 130-144. https://doi.org/10.55737/qjss.vi-i.25298

environmental pollution, a major public health concern (Ali et al., 2024). Resources can be conserved, and garbage accumulation can be avoided through recycling as a method of waste management (Thi, 2015). For decades, waste management has been an issue all around the world, but notably in poorer nations. There are a number of variables that contribute to ineffective waste management in developing-world cities. These include an ever-increasing trash output, strained municipal budgets as a result of waste management's rising costs, and a lack of insight into the interplay between waste's many phases. Although measures have been taken to address the garbage problem, many developing nations still struggle with waste management (Osibanjo, 2007).

Most human actions result in some sort of garbage, and the way that waste is often managed, stored, collected, and disposed of poses threats to human and environmental health. Solid waste management is especially important in densely populated locations like cities, where people's day-to-day lives generate enormous amounts of trash. Many governments have adopted this philosophy, and many towns are working hard to offer the most fundamental services (Kehbila, 2009). These uncollected wastes, which include both animal and human excrement, are typically dumped carelessly in streets and drains, where they contribute to flooding, insect breeding, rat vectors, and the eventual spread of diseases. Whenever it is collected, the vast majority of municipal solid garbage in Africa and other low-income nations is simply dumped on land.

## Risk Factors of Waste Management

Lack of efficient financial management and logistics, inadequate municipal infrastructures, imbalanced planning schemes, disdain for fundamental aesthetics, industrial and commercial growth, and perceptions and socio-cultural habits all contribute to the incorrect management of solid garbage (Ahmad, 2024). Community members are the primary consumers of waste management facilities; hence it is important to highlight their role, attitudes, waste handling behaviors, and interactions with other players in the waste system while discussing poor waste management (Faibil, 2022). There may be regional differences in the solutions that prove successful in tackling the obstacles to good solid waste management due to environmental effects, socioeconomic conditions, and cultural traditions (Ahmad & Esposito, 2022; Esposito et al., 2023).

Some studies have linked a person's awareness of home safety hazards or their familiarity with the negative health effects of waste to their approach to disposing of garbage at home. In order to avoid direct contamination and exposure to infectious and dangerous compounds from domestic garbage, for instance, safe practices must be followed (Kanhai, 2021). However, educating people can help them develop healthy perspectives and sound habits. There is a dearth of public education regarding the link between environmental pollution and health, and no plans have been established for a long-term study to see if these efforts are indeed saving money by reducing pollution-related health issues. Consequently, more work needs to be done in the field of waste management to advance our understanding of the facts, models, and concepts concerning the permanence of garbage disposal.

In addition to contributing to severe global warming, the methane released during the decomposition of organic materials is a known fire and explosive hazard. For instance, in the Mexican city of Tampico, located on the coast of the Gulf of Mexico, a fire burned in an open dump for more than six months (Jayakrishnan, 2013). Dump managers in areas that aren't serviced by garbage collection facilities sometimes resort to starting periodic fires at the dumps as a means of reducing trash accumulation. This makes room for more garbage to be dumped, which in turn increases the dumps' useful lifespan.

The current global environmental and climatic changes that have direct effects on health and well-being are now widely understood to be mostly caused by human activities and their products. Similarly, many human activities produce trash at the city level, which is a major cause of environmental and health concerns, such as the spread of infectious diseases like malaria, cholera, dysentery, respiratory complications, and injuries. The increasing urban population has a multiplier effect on environmental and public health due to the increased production of solid waste (Ho, 2018).

## Research Objectives

- Determine the potential environmental impacts of the generation of waste at the site.
- Recommend Appropriate Waste Handling and Disposal Measures.
- Classify Waste Material Where Possible (Inert Material / Waste Fractions) for efficiency.
- Providing the benefit of reclaiming fertilizer and natural manure that can be put to use in farming.
- Protecting ecosystems and human health by lessening the impact of wastes of all kinds.

## Research Questions

RQ1. Determine the potential environmental impacts ofof the generation of waste at the site..
RQ2. What is the recommendation for appropriate waste handling and disposal measures?
RQ3. Which classification for waste material,, where possible (inert material/waste fractions) for efficiencyefficiency?
RQ4. Which benefit of reclaiming fertilizer and natural manure can be put to use in farming?
RQ5. What is protecting ecosystems and human health by lessening the impact of wastes of all kinds?

## Problem Statement

Due to the ever-increasing numbers of people and the expanding economy, garbage production has risen accordingly. This increases the strain on an already overburdened waste-handling infrastructure. Waste streams have become more complicated as a result of urbanization and industrialization. The difficulty of managing waste increases in proportion to the complexity of the waste stream and this problem is exacerbated when hazardous materials are thrown in with regular garbage. There is a long-standing backlog in garbage services for all regions, particularly for informal urban neighbourhoods, tribal communities, and formal rural settlements. Since the reporting of waste data is voluntary and where data is available, it is often incorrect and conflicting, and and there is limited awareness of the primary waste flows and national waste balance. Lack of support for the waste management hierarchy is also included in policy and regulation. The garbage removal and recycling sectors both currently contribute significantly to employment and GDP, and both have room for growth. Lack of a recycling infrastructure that directs trash away from population centrescentres and instead into recycling centrescentres. An increasing burden is being placed on a waste management system that has seen a decline in both capital expenditure and upkeep. There is a widespread under-pricing of waste management, which means that the costs of trash management are not completely realized by consumers and industry, and thus, waste disposal is favoured over other solutions. Waste management choices are limited, making waste treatment more expensive than landfill disposal. There aren't enough complying landfills or hazardous waste management facilities, which threatens the efficiency of properly discarding all types of garbage.

## Literature Review

Waste management processes include collecting, transporting, and disposing of trash. Wastes are handled differently depending on their composition and category. There are distinct approaches to waste management for liquid, solid, and organic wastes. The ultimate phase of trash disposal includes activities such as burning, burial, recycling, and treatment (Ishtiaq, 2018). Most municipal solid garbage and other low-income nations are simply dumped on land.

These uncollected wastes contribute to flooding, insect breeding, rat vectors, and the spread of diseases. Methane released during the decomposition of organic materials is a known fire and explosive hazard. There is a dearth of public education regarding the link between environmental pollution and health. The increasing urban population has a multiplier effect on environmental and public health due to the increased production of solid waste. Many human activities produce trash at the city level, which is a major cause of environmental and health concerns, such as the spread of infectious diseases like malaria, cholera, dysentery, respiratory complications, and injuries.

There is a long-standing backlog in garbage services for all regions, particularly for informal urban neighbourhoods, tribal communities, and formal rural settlements. Lack of support for the waste management hierarchy is also included in policy and regulation (Joshi, 2019). An increasing burden is being placed on a waste management system that has seen a decline in both capital expenditure and

upkeep. Managing solid waste is becoming increasingly difficult in several of Africa's rapidly urbanizing regions. Currently, it is believed that the increase in urban solid waste is occurring at a rate greater than that of urbanization.

One of the main reasons why solid waste management is such a big environmental and public health issue is the fact that its effects on health are well-documented (Sharma, 2020). Though there are numerous well-established causal links between exposure to garbage and health outcomes for specific forms of waste, others remain unclear or are not highlighted as public health issues. Even when the causal linkages are established, it may be impossible to determine the full extent of the health burden related to exposure. The uncertainty in identifying the exposure type (Sotelo, 2019), dose, and duration is a significant barrier to causal inference. When it comes to health consequences, it might be difficult to rule out other possible causes, as many different types of environmental exposure could lead to the same effects. Loss to follow-up of exposed persons is a typical difficulty, and some clinical effects, like cancer and other forms of degenerative illnesses, take a long time to appear after exposure (Mangla, 2018).

The phenomenon of urbanization in the region should be considered briefly because of the close relationship between solid waste generation and urbanization. Nearly one-third of the world's population was concentrated in metropolitan regions in 1950. Approximately 66% of the global population is projected to reside in urban areas by the year 2050 (Kul, 2020). The rate of urbanization in Sub-Saharan Africa is unprecedented worldwide. While Africa now has the lowest urbanization rate (40%), projections show that by 2050, almost 56% of the continent's inhabitants will be residing in urban areas.

According to current trends, urbanization is a fast-expanding phenomenon, and urban areas will continue to drive economic expansion and accompanying garbage accumulation. Moreover, in the next decades, inefficient waste management will place a significant strain on urban residents' health. While affluent nations produce more garbage per person than any others, they also have better garbage collection and disposal systems in place, reducing the likelihood of any negative health effects. China and India, two countries that are rapidly urbanizing and rising economically, face particularly severe health concerns from improper garbage management and the resulting accumulation of waste.

## The Attitude and Behavior Gap

People have various definitions of what constitutes garbage (Moore, 2012). Trash pickers in Ghana are only one example of a group of individuals who view "waste" not as garbage but as a potential source of money in a country with a relatively scarce job market. On the other hand, the vast majority of people in the developing world view trash as an obstacle and an issue that must be solved. It's not true that people in impoverished countries don't see waste as a problem. The inverse is usually the case. Recognizing the issue of trash, however, does little to curb littering or other poor waste management habits (Arya, 2020). Convenience, societal conventions, a lack of public participation, and a lack of education and understanding of appropriate waste management practices are all factors that contribute to this attitude-behavior gap.

It's an incongruity between one's stated values and their shown behaviour that makes up the attitude/behavior gap. This is a reference to the gap that exists between people's concern about the environmental harm caused by household waste and their limited action to minimize waste or engage in other pro-environmental behaviors (O'Connell, 2011). When observing communities in the underdeveloped world, several researchers saw this disparity firsthand.

## Lack of Education and Awareness

Lack of education and awareness of efficient waste-management procedures is another key barrier encountered throughout the developing globe. Even while people in Gaborone, Botswana, were aware of recycling and other sustainable waste-management strategies, they weren't particularly interested in taking part in recycling initiatives, according to one study. Their lack of familiarity with waste management appears to be a factor in their reluctance to adopt new policies. Communities' lack of concern for the environment fosters a norm of abstaining from environmental decision-making. This attitude makes people less likely to take action to reduce pollution and waste. In the end, this leads to societies

where people are uninformed about, and care little about, their effect on the natural world (Kanhai, G., Fobil, J. N., Nartey, B. A., Spadaro, J. V., & Mudu, P., 2021). Ultimately, it may boil down to the distinction between data and insight. The information may not be as helpful in bringing about change if it is delivered to someone who is unfamiliar with the topic. These communities may be more receptive to new information and changes if it is combined with what they already know about trash management.

## Public Participation

Researchers agree that raising public awareness and encouraging community involvement in trash management is essential for developing long-term solutions to waste management and encouraging environmental citizenship among local residents. The influence of greenwashing on public perceptions and waste management practices is commonly used (Ahmad, 2022). When people see others engaging in waste management activities like recycling, they are more likely to join in themselves. Since formal recycling programmes are uncommon in underdeveloped nations, the wealthy often resort to informal recyclers as the de facto standard of behaviour. Most environmental hazards can be traced back to careless trash disposal by humans. Uncovered and unauthorized dumpsites constitute a significant threat to the environment since they may house hazardous materials like toxic, infectious, and radioactive garbage.

According to a 2002 study conducted in Malaysia, "conscience of the person needs to be elevated through environmental knowledge and concern, inculcation of sustainable consumption patterns, and education on waste management" to resolve the current waste management problem. Green human resource management practices will play a vital role in sustainable waste management performance (Khan, 2021).

There was a positive correlation between environmental awareness and knowledge about environmental conservation and recycling attitude, but this correlation did not always hold, suggesting that waste managers should take measures to ensure that the information presented to the public is consistent with the knowledge these individuals already possess.

Another issue is that people often feel powerless to change things, and so they avoid filing formal complaints with the proper authorities. This outlook varies significantly across income brackets. Those from more affluent backgrounds are more likely to believe that their actions will have an impact on environmental issues and to take action to resolve them. According to the literature provided by (Sotelo, 2019), some researchers claim that people from lower socioeconomic classes pay less attention to environmental issues since they focus more on finding gainful jobs and a safe place to live.

## Lack of Accountability

The lack of accountability is typically displayed by the buildup of massive amounts of litter 12 in public spaces like parks, highways, and recreational facilities, as well as in private locations like workplaces (Scarlett & Shaw, 1999). The concept of ownership is useful in explaining this phenomenon. What this means is that private property owners have more of an interest in maintaining their assets than those who rent or occupy public spaces. It looks like we're dealing with a "tragedy of the commons" situation. According to this idea (Abu Hajar, 2021), people act rationally and autonomously in their own self-interest, which might lead them to act against the best interests of the group as a whole, such as by polluting a river or dumping trash in a public park.

One study noted that in the past, South Africans tended to view waste management as a purely technical matter, placing less emphasis on the involvement and cooperation of individual households. Careless and reckless trash disposal in public streets, along roads and highways, and near community bins for residential trash was the result of communities not participating in waste management. The urgency of the situation calls for widespread community engagement and the rollout of intensive public education initiatives (Mangla, 2018).

## Methodology

This paper used data from major scientific journals to examine waste management techniques and important factors in over thirty megacities across twenty-two developing countries. Scientific literature, publicly available datasets, city visits, expert interviews, and stakeholder surveys all contributed to the

compilation of this data. The writers conducted an an extensive study and offered a a critical analysis of the factors that have a detrimental impact on trash management. Determinations were arrived at through the use of inferential and explanatory methods.

## Defects in the Procedure's Layout

They claim that citizens in developing countries were given very similar questions when their waste management systems were evaluated. The difficulty, however, lies among the questionnaires that were delivered through interview surveys. If the authors had distributed the questionnaires equally, countries for each continent, it would have been easier to assume the genuine depiction of the waste management system.

**Table 1**

*Questionnaire*

| Questions | Options |
|---|---|
| How frequently do members of the waste management team make trips to your neighborhood to remove trash? | ▸ Once in week<br>▸ Once in 2 week<br>▸ Twice in month<br>▸ Once after a month |
| Where do you take your trash to be disposed of? | ▸ Bury in ground<br>▸ Burn it<br>▸ In the bushes<br>▸ In Dustbin |
| When it comes to garbage, what do you throw away the most frequently? | ▸ Food waste<br>▸ Plastic waste<br>▸ Paper waste<br>▸ Other |
| How has the waste management in your area dealt with the problem of noxious odors coming from the dumps? | ▸ Recycle<br>▸ Provide waste disposal<br>▸ None<br>▸ Biological treatment |
| Is there a targeted application for the garbage people in your area produce? | ▸ Revenue generation<br>▸ Composting<br>▸ Biogas<br>▸ None |
| Could you tell me what role MSW has in the degradation of public health and the environment? | ▸ Yes<br>▸ No |
| What are some noticeable consequences that MSW has brought to your area? | ▸ Flood<br>▸ Air pollution<br>▸ Distance<br>▸ None |
| How would you rank the effectiveness of garbage management in your area? | ▸ Good<br>▸ Better<br>▸ Bad<br>▸ Worst |
| At what frequency do environmental cleanups take place where you live? | ▸ 1 to 2<br>▸ 3 to 4<br>▸ 5 to 6<br>▸ None |
| Does your community have many drop-off locations for trash? | ▸ Never<br>▸ Once per weeks<br>▸ Once in 2 weeks<br>▸ Once in 3 weeks |

## Results and Analysis

The researcher shows the results which is obtained from data analyzed with the help of using different methods discussed in the previous chapter. In this chapter, we present the results of the data analysis using methods described in the previous chapter. Now, it will be explained that our principal consideration was to examine the risk factors and problems of waste management in developing countries as hurdles.

## Descriptive Analysis

Research has implemented descriptive analysis to check whether the relations between variables are present or not and to check the significance of the variables.

**Table 2**

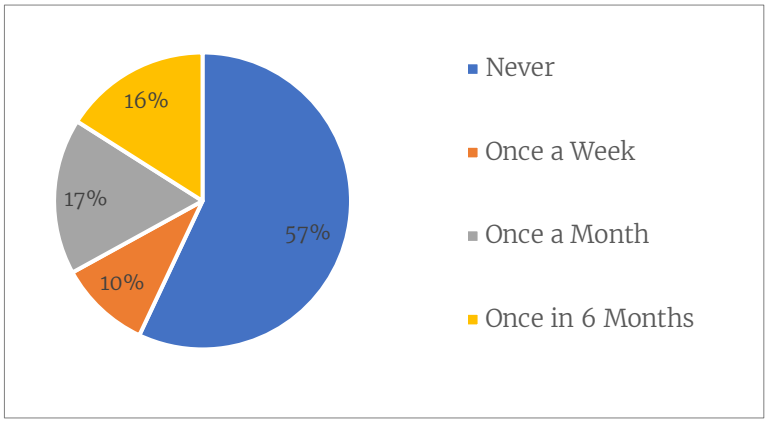
*Descriptive*

| Questions | Options | Percentage |
|---|---|---|
| How frequently do members of the waste management team make trips to your neighborhood to remove trash? | ▸ Once in week<br>▸ Once in 2 week<br>▸ Twice in month<br>▸ Once after a month | 10%<br>17%<br>16%<br>57% |
| Where do you take your trash to be disposed of? | ▸ Bury in ground<br>▸ Burn it<br>▸ In the bushes<br>▸ In Dustbin | 14%<br>20%<br>37%<br>29% |
| When it comes to garbage, what do you throw away the most frequently? | ▸ Food waste<br>▸ Plastic waste<br>▸ Paper waste<br>▸ Other | 51%<br>42%<br>7%<br>0% |
| How has the waste management in your area dealt with the problem of noxious odours coming from the dumps? | ▸ Recycle<br>▸ Provide waste disposal<br>▸ None<br>▸ Biological treatment | 0%<br>0%<br>0%<br>100% |
| Is there a targeted application for the garbage people in your area produce? | ▸ Revenue generation<br>▸ Composting<br>▸ Biogas<br>▸ None | 0%<br>0%<br>0%<br>100% |
| Could you tell me what role MSW has in the degradation of public health and the environment? | ▸ Yes<br>▸ No | 34%<br>66% |
| What are some noticeable consequences that MSW has brought to your area? | ▸ Flood<br>▸ Air pollution<br>▸ Distance<br>▸ None | 50%<br>25%<br>25%<br>0% |
| How would you rank the effectiveness of garbage management in your area? | ▸ Good<br>▸ Better<br>▸ Bad<br>▸ Worst | 0%<br>0%<br>55%<br>45% |
| At what frequency do environmental cleanups take place where you live? | ▸ 1 to 2<br>▸ 3 to 4<br>▸ 5 to 6<br>▸ None | 59%<br>0%<br>0%<br>41% |
| Does your community have many drop-off locations for trash? | ▸ Never<br>▸ Once per weeks<br>▸ Once in 2 weeks<br>▸ Once in 3 weeks | 19%<br>12%<br>16%<br>53% |

## Graphical Representation

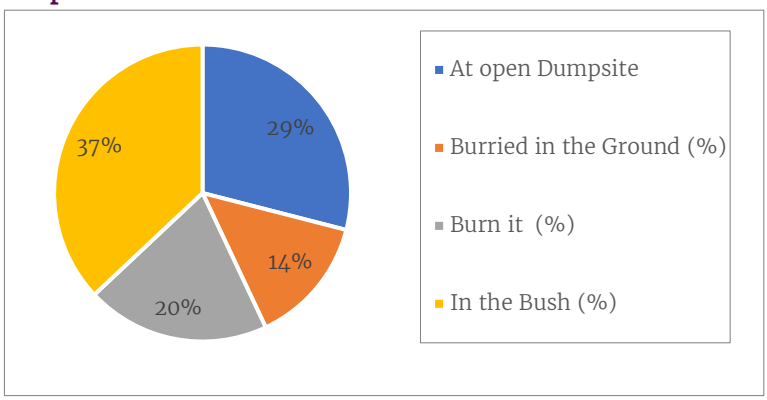
The purpose of the first question was to gauge people's perceptions of the effectiveness of waste collectors. According to a statistical survey, 57% of respondents said that waste collectors had never gone to their locality, 17% said that it was visited once a month, 16% said it was visited once every six months, and 10% said that rubbish collection happened once a week in their particular locality. As depicted to the respondents' responses and reactions reflect their unhappiness with the waste collectors' services.

**Graph 1**



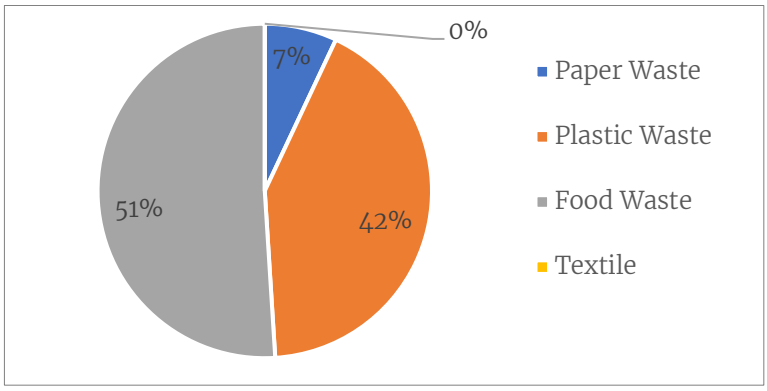

Determine how residents dispose of their home waste by answering the second question. According to a statistical poll, 37% of people prefer to dispose of their home waste in the bush, 29% prefer an open landfill, 20% prefer burning their rubbish, and 14% prefer to bury it in the ground. According to the respondents' comments and interviews, none of these trash disposal techniques are used in waste management, suggesting that the respondents don't engage in waste management.

**Graph 2**



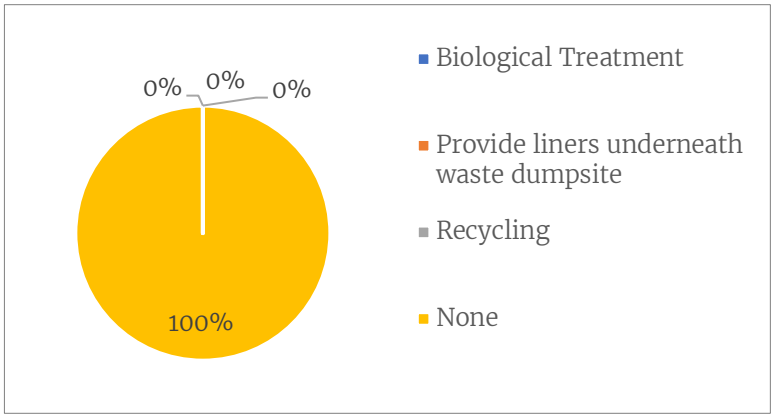

The final query is to identify the main type of trash produced in residential dwellings. According to a statistical analysis, 51% of the waste produced in residential dwellings is made up of food waste. Other wastes produced include paper and plastic garbage, which together make up 42% and 7% of all waste produced, respectively. According to the responses and the interview, the majority of the garbage produced was domestic in nature, with no evidence that any industrial waste was also produced. The percentile is displayed. Food waste is a problem that society is starting to take seriously. This is due to the regular consumption of food and the the production of food waste, both of which createcreate environmental degradation and provideprovide food for rodents, flies, and other animals that can spread diseases to humans.

**Graph 3**



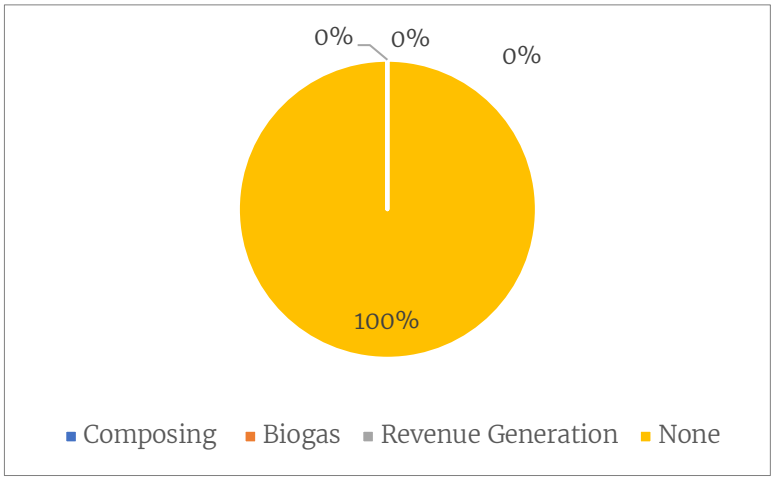
The fourth question asked respondents if they were aware of the waste management board's activities in containing the offensive materials from dumpsites. A survey conducted found that there is no attempt taken to reduce the smell produced by garbage dumpsites (in terms of treating or recycling the material placed at the dumpsite). This may not be the case, as the majority of respondents gave their comments based on the waste management situation in their immediate area and may not have a clear understanding of the measures in place to address this issue.

**Graph 4**




The fifth question asks about the specific or general waste treatment strategy used by residential homes. The results of a questionnaire-based survey showed that respondents had little to no awareness about the dollar value of the waste produced since all the alternatives in this area had 0% individual and/or communal implementation. The treatment alternatives offered under this heading included generating cash, composting, and producing biogas, which is used in nations where trash is viewed as a resource rather than just a waste product.

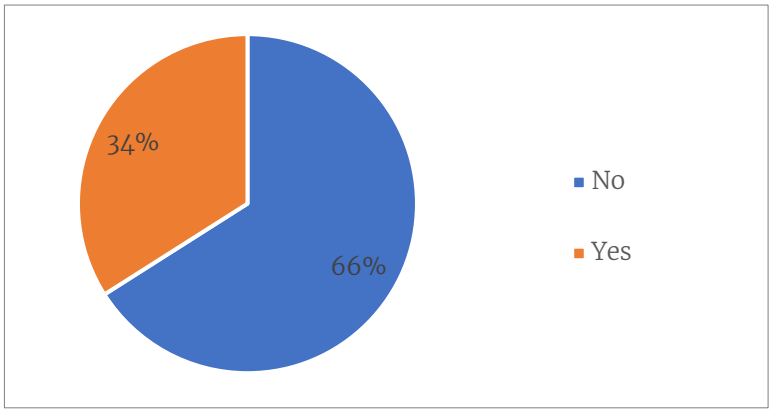
**Graph 5**




The sixth question asked respondents how much they knew about waste management and the advantages it had for their health. According to a survey, 34% of respondents are aware of how Municipal Solid Waste (MSW) affects the environment and public health, whilst 66% of respondents are unaware of these effects. This suggests that one of the elements influencing people's perspectives on solid waste management is their ignorance of the issues caused by the mismanagement of MSW.

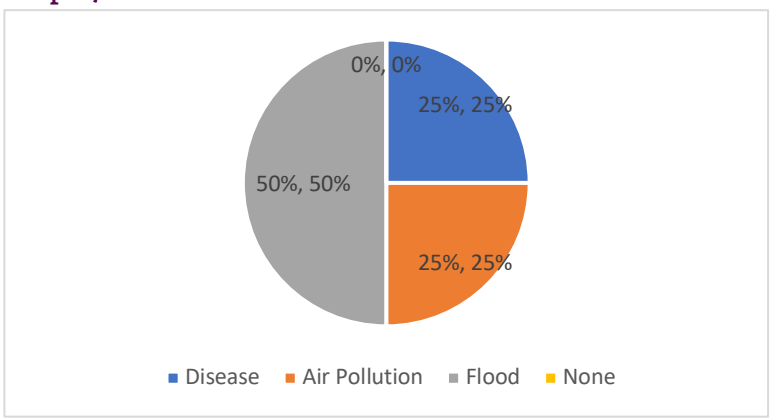
However, because garbage collectors are rarely able to collect the waste produced, individuals who are aware of the negative effects on public health caused by indiscriminate waste disposal have also participated in open dumping.

**Graph 6**



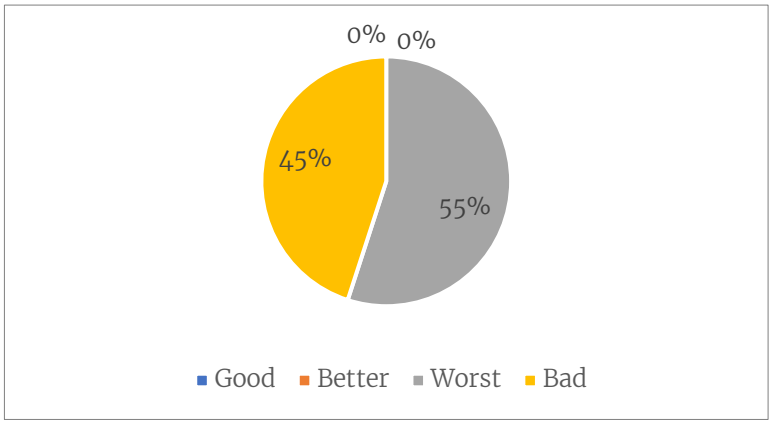

The purpose of the seventh question was to ascertain how the presence of an uncontrolled and poorly managed open dumpsite affected the economic and social activities of the locals. According to a statistical survey, almost 50% of respondents said that flooding is the main result of poor management of MSW. This is a result of waste products clogging drainage systems and water channels during the rainy season, which causes floods. The remaining 50% of respondents stated that unpleasant odors and potential infectious diseases had a detrimental influence on social and economic activity. These are probable repercussions of MSW since they include germs, flies, insects, and animals that are drawn to trash dumps and can pollute the ecosystem as organic waste decomposes there.

**Graph 7**



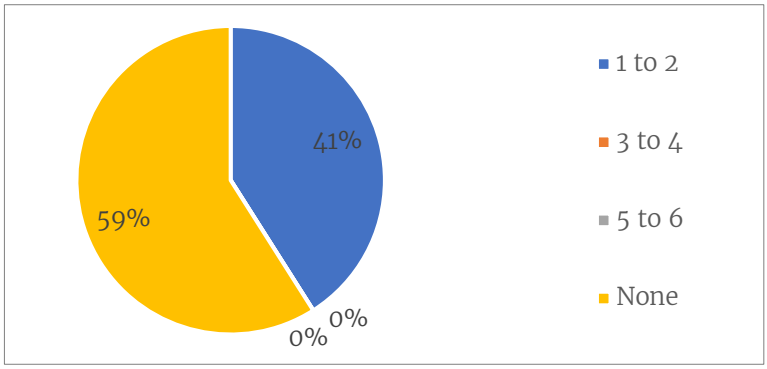

The seventh question examined waste management effectiveness from the viewpoint of home users. According to a statistical poll, 45% of respondents ranked the waste management situation in their community as terrible, and 55% of respondents rated it as the worst. "Good" and "Better" were the other alternatives offered in this category; however, none of the two received a rating from the respondents. Given that "Bad" and "Worst" received high ratings from respondents.

**Graph 8**



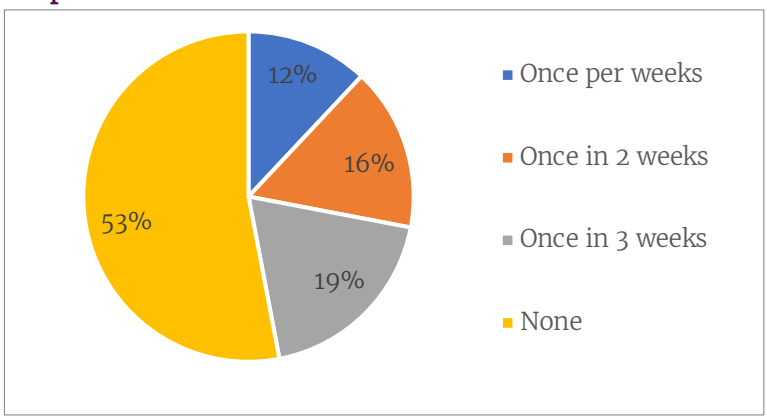
A waste collection point's existence in several neighborhoods was the subject of the ninth question. According to the survey, 59% of respondents do not have a local waste collection site and use alternative waste disposal methods, while 41% felt that their community should have one to two waste collection locations. Due to a paucity of garbage collectors to collect waste products from people, a random study of the existing waste collection places also found that some of these points eventually develop into dumps. People then consider it normal to dispose of whatever rubbish they have at the collection places, and because waste collectors are inconsistent, this gradually accumulates.

### Graph 9




The purpose of the tenth question was to ascertain how frequently environmental sanitation is carried out in various areas. According to a survey of respondents, 53% of those surveyed said environmental sanitation is nonexistent in their community, 19% said it occurs once every three weeks, 16% said once every two weeks, and 12% said once a week. According to the data from respondents from various localities on the frequency of environmental sanitation, this practice is not given a high priority, which can lead to environmental pollution, deterioration, and possible harm to the environment and public health.

### Graph 10




## Conclusion and Discussion

### Discussion

The visual outlooks of the immediate and surrounding environments of open dumpsite locations have been severely damaged by open rubbish dumping. The pungent odor coming from the garbage has exposed nearby individuals to health concerns including shortness of breath, headaches, eye irritation, and perhaps death when large amounts of such pungent odor are inhaled. Additionally, the deteriorated road networks are seen as a result of floods brought on by eroded garbage from dumpsites that prevent floodwaters from freely flowing into the drainage system.

This causes waste water to accumulate on the road surface, which lowers the road's strength and, as a result, its design life. The proliferation of water-borne infections from contaminated waste water flowing through the dumpsite to residential and business areas is another effect brought on by the eroding garbage. Malaria, a frequent disease in the area where an open landfill is located, is a leading cause of infant death.

The results of the interviews and discussions with locals showed that open waste dumping is a viable option for getting rid of waste produced, which is consistent with the answer from the questionnaires that were recovered. The majority of respondents, however, admitted that they were unaware of malaria as one of the consequences of open waste dumping. Some dumpsites were observed flowing to an unidentified location, indicating that industrial waste is also being disposed of carelessly and indiscriminately in the dumpsites.

The results of the poll showed that waste is typically referred to and understood to be a material that has no economic value after being used for its intended function, as the definition implies. No trash produced is ever utilized for economic purposes, contrary to what the questionnaire claims, as the garbage produced is inappropriately dumped in unapproved environments. The study also found that the waste managers and individuals who produce the majority of the waste do not interact to share ideas about how to improve the waste management situation, despite the fact that most people reported receiving subpar service from the waste managers. The findings showed that waste collectors are ineffective because more than 50% of residents only have a few options for disposing of their waste. This makes it possible for rubbish to be dumped openly on illegal and unauthorized sites.

A waste-filled environment that has the conditions that encourage and support the growth and spread of disease, contaminated mice, flies and insects, etc. interacts with inhabitants who live close to open dumpsites to demonstrate that personal hygiene is challenging.

Additionally, it is challenging to maintain good personal hygiene when there are no intentional and consistent general environmental cleanliness procedures. According to the response, there is little to no use of the waste management method (Reduce, Reuse, and Recycle) in both residential and business regions. However, the open dumpsite's centre was where scavenging was observed. The majority of the scavengers were seen to be completely exposed to bacterial contamination in all open dumpsites that were visited, and no safety precautions, such as protective clothing or practice, were seen to be done by these individuals. This demonstrated how "uncontrolled" the open dumpsites are. Along with rodents and insects, such uncontrolled open dumpsites give humans the opportunity to spread disease. When some of the scavengers were questioned, it became clear that the majority of them were unaware of the risk of contracting a disease or becoming ill when scavenging in open landfills. The economic impacts of regime changes and administrative decisions also damage waste management practices (Ali, 2023). Social and demographic awareness is required to address waste management issues (Aljounaidi et al., 2023; Joiya et al., 2023). The role of good governance and citizen trust in effective waste management is very important to improving the waste management system (Ahmad & Esposito, 2022)

## Conclusion

The major objective of these organizations, as revealed by interviews and discussions with some of the workers of select waste management companies, was to collect and transport waste from the place of collection to the point of disposal, or permitted dumpsite. The personnel of several of the companies also disclosed that there are no imminent plans to recycle, treat, or add value to the waste collected, citing finances and bureaucracy as barriers, when asked what form of waste recycling or treatment is carried out before disposal. Some people lacked knowledge about garbage treatment or recycling methods. According to conversations with certain Edo state waste management board employees, no formal plans or regulations have been developed to turn waste into a useful resource.

The tremendous economic risk associated with improper garbage disposal has resulted in diminished road networks, lost tourism earnings, and threats to the public's health. It was discovered that the existence of an open waste dumpsite has caused the locals to lose out on both economic opportunities and the value of their homes. The risk connected with a specific practice is determined by a number of factors, including opinions from experts in the field, the volume of complaints regarding the danger associated with the practice, and the number of persons impacted by the practice. The suggestion that the opinion of experts can be used as a tool to quantify the risk level was rejected by this study, which instead used the opinion of the general population of a metropolis, who are the victims of the region's waste management practices, to determine the risk level.

It is impossible to overstate the detrimental effects of open dumping, open dumpsites, and the careless disposal of waste as a waste management technique. Aside from the loss of cash, some of the few bad effects of such waste management practices include flooding, health concerns, environmental degradation, and contamination of ground and surface water. The lack of expertise, technology, and funding for proper and adequate waste management contributes to the perspective of individuals and waste managers. Thus, policymakers should support the development of pilot-scale recycling facilities for particular types of garbage. The maintenance of the environmental conditions required for the support of human existence, as well as the protection of public health and safety, depends on proper and adequate waste management.

## References


Abu Hajar, H. A., Al-Qaraleh, L. A., Moqbel, S. Y., & Alhawarat, A. M. (2021). Prospects of sustainable waste management in developing countries: A case study from Jordan. *Environmental Monitoring and Assessment*, *193*(11), 1-14. https://doi.org/10.1007/s10661-021-09522-z

Ahmad, Z. & Esposito, P. (2022). The Influence Of Greenwash On Green Purchace Intentions; The Mediating Role Of Green Brand Loyalty. In *15th Annual Conference of the EuroMed Academy of Business*.

Ahmad, Z. (2024). CRITICAL APPRAISAL OF SOLID WASTE MANAGEMENT IN DEVELOPING COUNTRIES: MYTHS AND CHALLENGES. *International Journal of Advanced Research*, *12*(10), 622–636. https://doi.org/10.21474/ijar01/19680.

Ahmad, Z. (2024). Current Trends and Pressing Issues of Solid Waste Management in Developing Countries with Special Reference to Pakistan. *Qlantic Journal of Social Sciences and Humanities*, *5*(3), 241–248. https://doi.org/10.55737/qjssh.330997556.

Ahmad, Z., & Esposito, P. (2022). GOOD GOVERNANCE AND CITIZENS'TRUST IN DEVELOPING COUNTRIES: A RESEARCH NOTE FROM PAKISTAN. In *15th Annual Conference of the EuroMed Academy of Business*.

Ahmad, Z., & Esposito, P.(2022) THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITIES ON EMPLOYEES'GREEN BEHAVIOR: THE MODERATING ROLE OF ORGANIZATIONAL TRUST. In *15th Annual Conference of the EuroMed Academy of Business*.

Ali, M., Naeem, M. W., Ahmed, Z., & Iftikhar, M. H. (2023). Stagnate Economic Analysis of Regime Change & Administration shuffling Impact on Pakistan economy. *Pakistan Journal of Economic Studies (PJES)*, *6*(1), 1-19. https://journals.iub.edu.pk/index.php/pjes/article/view/1556

Ali, M., & Ahmad, Z. (2024). Weighty matters: Exploring the economic ramifications of obesity, abdominal bloating, and spinal deformities in Pakistan. *sjesr*, *7*(1), 20-29. https://doi.org/10.36902/sjesr-vol7-iss1-2024(20-29)

Ali, M., Ameer, W., Ahmad, Z., Aljounaidi, A., & Atiek, A. (2024). Exploring the quality of care and the nursing practice environment in Saudi Arabia. *Qlantic Journal of Social Sciences*, *5*(4), 182-196. https://doi.org/10.55737/qjss.v-iv.24095.

Aljounaidi, A., Ali, M., Ahmad, Z., Atiek, A. H., & Khan, I. H. (2023). Knowledge and awareness of Zakah among the people of Pakistan: Implications for Islamic economics. *Qlantic Journal of Social Sciences*, *4*(4), 346-356. https://doi.org/10.55737/qjss.533988046

Arya, S., & Kumar, S. (2020). E-waste in India at a glance: Current trends, regulations, challenges and management strategies. *Journal of Cleaner Production*, *271*, 122707. https://doi.org/10.1016/j.jclepro.2020.122707

Esposito, P., Ahmad, Z., Riso, V., & Mustafa, N. (2023). Beyond the business case? Retracing the walk of Corporate social responsibility and financial performance relationship in the Oil and Gas sector. *Corporate Social Responsibility and Environmental Management*, *31*(3), 2211-2224. https://doi.org/10.1002/csr.2676

Faibil, D., Asante, R., Agyemang, M., Addaney, M., & Baah, C. (2022). Extended producer responsibility in developing economies: Assessment of promoting factors through retail electronic firms for sustainable E-wastE management. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, *41*(1), 117-142. https://doi.org/10.1177/0734242x221105433

Ho, C., & Chen, M. (2018). Risk assessment and quality improvement of liquid waste management in Taiwan University chemical laboratories. *Waste Management*, *71*, 578-588. https://doi.org/10.1016/j.wasman.2017.09.029

Ishtiaq, P., Khan, S. A., & Haq, M. (2018). A multi-criteria decision-making approach to rank supplier selection criteria for hospital waste management: A case from Pakistan. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, *36*(4), 386-394. https://doi.org/10.1177/0734242x18755894

Jayakrishnan, T., Jeeja, M., & Bhaskar, R. (2013). Occupational health problems of municipal solid waste management workers in India. *International Journal of Environmental Health Engineering*, *2*(1), 42. https://doi.org/10.4103/2277-9183.122430

Joiya, S. A., Danish, M. H., Ahmad, Z., & Ijaz, H. (2023). Unveiling the shadows: Understanding social and demographic awareness of migrant smuggling in Pakistan. *Qlantic Journal of Social Sciences*, *4*(4), 285-296. https://doi.org/10.55737/qjss.794632661

Joshi, C., Seay, J., & Banadda, N. (2018). A perspective on a locally managed decentralized circular economy for waste plastic in developing countries. *Environmental Progress & Sustainable Energy*, *38*(1), 3-11. https://doi.org/10.1002/ep.13086

Kanhai, G., Fobil, J. N., Nartey, B. A., Spadaro, J. V., & Mudu, P. (2021). Urban municipal solid waste management: Modeling air pollution scenarios and health impacts in the case of Accra, Ghana. *Waste Management*, *123*, 15-22. https://doi.org/10.1016/j.wasman.2021.01.005

Kehbila, A. G., Ertel, J., & Brent, A. C. (2009). Strategic corporate environmental management within the South African automotive industry: Motivations, benefits, hurdles. *Corporate Social Responsibility and Environmental Management*, *16*(6), 310-323. https://doi.org/10.1002/csr.188

Khan, M. S., Ahmad, Z., & Khan, F. (2021). The effects of green human resource management practices on sustainable performance: the mediating role of green climat and green employee. *Turkish Online Journal of Qualitative Inquiry*, *12*(10).

Kul, C., Zhang, L., & Solangi, Y. A. (2020). Assessing the renewable energy investment risk factors for sustainable development in Turkey. *Journal of Cleaner Production*, *276*, 124164. https://doi.org/10.1016/j.jclepro.2020.124164

Mangla, S. K., Luthra, S., Mishra, N., Singh, A., Rana, N. P., Dora, M., & Dwivedi, Y. (2018). Barriers to effective circular supply chain management in a developing country context. *Production Planning & Control*, *29*(6), 551-569. https://doi.org/10.1080/09537287.2018.1449265

Marshall, R. E., & Farahbakhsh, K. (2013). Systems approaches to integrated solid waste management in developing countries. *Waste Management*, *33*(4), 988-1003. https://doi.org/10.1016/j.wasman.2012.12.023

Osibanjo, O., & Nnorom, I. (2007). The challenge of electronic waste (E-wastE) management in developing countries. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, *25*(6), 489-501. https://doi.org/10.1177/0734242x07082028

Sharma, M., Joshi, S., Kannan, D., Govindan, K., Singh, R., & Purohit, H. (2020). Internet of things (IoT) adoption barriers of smart cities' waste management: An Indian context. *Journal of Cleaner Production*, *270*, 122047. https://doi.org/10.1016/j.jclepro.2020.122047

Sotelo, T. J., Satoh, H., & Mino, T. (2019). Assessing wastewater management in the developing countries of Southeast Asia: Underlining flexibility in appropriateness. *Journal of Water and Environment Technology*, *17*(5), 287-301. https://doi.org/10.2965/jwet.19-006

Thi, N. B., Kumar, G., & Lin, C. (2015). An overview of food waste management in developing countries: Current status and future perspective. *Journal of Environmental Management*, *157*, 220-229. https://doi.org/10.1016/j.jenvman.2015.04.022

Wilson, D. C., Velis, C. A., & Rodic, L. (2013). Integrated sustainable waste management in developing countries. *Proceedings of the Institution of Civil Engineers - Waste and Resource Management*, *166*(2), 52-68. https://doi.org/10.1680/warm.12.00005