

Household Waste Management Situation in Bangladesh: An Analysis of Gazipur City Corporation's Ward 35

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Abstract

This study evaluates the current status of household waste management in ward 35 of Gazipur city corporation and explores waste management practices alongside the socioeconomic and demographic characteristics of the residents. A cross-sectional quantitative survey of 200 households was conducted through in-person interviews between February and April 2024 using a piloted structured questionnaire which captured demographics, housing and neighborhood perceptions, storage and disposal methods, access and frequency of collection and perceived environmental/health impacts. Data were analyzed with descriptive statistics and visualized in Microsoft Excel. Findings show that 30% of households store rubbish in polythene, while 81% use designated places for disposal. Most participants live within 150 meters of a collection facility, and daily collection was reported. Nearly half (48%) expressed concern about environmental impacts of open disposal. Periodic clean-ups and NGO awareness campaigns occur but remain inconsistent, leaving municipal collection as the main system. Therefore, municipal collection remains the primary system. This study contributes to existing literature by focusing on household waste management in the rapidly urbanizing context of Gazipur. The study offers valuable insights for policymakers, urban planners, and waste management authorities in Gazipur to improve household waste management systems by linking waste practices to socioeconomic factors.

Keywords: Household waste management, Gazipur City Corporation, Ward 35, Waste collection practices, Solid waste disposal, Environmental impacts

JEL Classification: Q53, Q56

1. Introduction

With the development of the economy, the growth of urbanization, and the population, the amount of waste has grown considerably and it has become a significant risk to the environment and health of people. Poor storage, collection, and disposal of waste through various causes such as lack of motivation, lack of knowledge, appropriate technology, and financial assistance are common within Bangladesh. Consequently, there have been major challenges to the environment due to these practices. According to Nwachukwu et al. (2018), poor waste disposal practices in Owerri have caused an increase in the quantity of rubbish, health effects, and environmental destruction. Therefore, it is not a problem that is specific to Bangladesh. It is replicated in fast urbanizing cities. In the same way, Sarker et al. (2024) found that people tend

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not to segregate organic and inorganic waste mainly because of ignorance, lack of awareness, and poor municipal policies, which also add to the exacerbation of the environmental issue and make it more difficult to pursue the agenda of environmentally friendly waste management system. Moreover, as it is highlighted by researchers like Malav et al. (2020) and Shahzadi et al. (2018), the management of waste cannot be successful without increasing social awareness, changing behavioral patterns, and addressing social needs. Ward 35 of Gazipur City Corporation has a population of approximately 85,226 (Bangladesh Bureau of Statistics, 2022) and is heavily impacted by waste management challenges. Due to the booming garment industry, rapid internal migration has led to a significant rise in the urban population in Gazipur, with many rural-to-urban migrants, flocking to garment factories (Sharmin & Manan, 2022). This inflow rates have caused overcrowding; geospatial data confirm that Gazipur has been experiencing a population growth higher than its land growth, increasing the densities and concentration of settlements (Das, Joye, & Ahmed, 2024). The pressure on the municipal systems makes household solid waste management difficult, and more waste per area generates pressure on collection and disposal capacity (Baker et al., 2018; Haque, Hossain, & Haque, 2023). The presence of the older residents and new migrants in Ward 35, Gazipur contributes to the escalation of the issue of waste disposal leading to overflow and improper waste disposal, which further heightens the environmental pollution and subsequent health hazards associated with odors, vectors, and leachate flow in the environment (Baker et al., 2018; Haque et al., 2023). The study intends to evaluate the waste management state in residential areas of Ward 35 of Gazipur City Corporation and determining the gaps in waste management and the possibility of improving the local waste management experiences.

2. Significance of Waste Management

Effective solid waste management in urban centers is a burning question, and many studies on this topic have been carried out. Indicatively, a study conducted by Marshall and Farahbakhsh (2013), Ogwueleka (2009), and Henry et al. (2006) revealed that the major challenges in solid waste management are ineffective methods of collection, inadequate infrastructure, political issues, adverse effects on the environment, and insufficient funding. Al-Khatib et al. (2010), Bandara et al. (2007), Ferrara and Missios (2005), Jenkins et al. (2003) and Gupta et al. (1998) all assert that recycling and resource recovery is important to the sustainability of the environment and resource conservation. Additionally, Aparcana (2017) and Gupta et al. (1998) highlighted the need for strong policies, stringent regulations, and enhanced stakeholder collaboration to address waste management difficulties effectively. The informal sector's significant role in waste management and its potential for economic benefits were discussed by Oguntoyinbo (2012) and Scheinberg et al. (2010), who advocated for its integration into formal systems.

Community engagement and public awareness campaigns are also crucial for supporting sustainable waste management practices, as emphasized by Haider & Riaz (2021), Saphores et al. (2006) and Martin et al. (2006). Zaman & Lehmann (2011), Chowdhury & Afza (2006) and Zurbrugg (2002) advocate for the use of cutting-edge technologies and legislative interventions

to address contemporary challenges and achieve sustainable waste management goals. In the context of urban waste management, customized approaches and public-private collaborations are essential for efficiently handling growing waste streams, as noted by Ahsan and Zaman (2014), Bhuiyan (2010) and Chowdhury & Afza (2006). Furthermore, the involvement of communities, NGOs, and the private sector, as recommended by Asnani & Zurbrugg (2007), is crucial for successful urban solid waste management.

Research by Guerrero et al. (2013) and Hoornweg and Bhada-Tata (2012) has utilized various methods to assess stakeholders and factors affecting waste management performance, identifying key system failure causes for effective planning and implementation. Pires et al. (2011) portray the significance of regulatory and economic changes, stakeholder involvement, and integrative methodologies in enhancing the efficiency and sustainability of waste management practices. Barr et al. (2001) discovered that household waste reduction, reuse, and recycling behaviors vary based on demographic, attitudinal, and situational factors. Similarly, Afroz et al. (2011) and Afroz (2011) established that factors such as household size, income, environmental awareness, and waste storage availability are also key determinants of waste generation and recycling behavior. In addition, Sidique et al. (2010) found that household size, age, education, and income significantly influence the use of drop-off recycling locations, with attitudes and convenience playing crucial roles. These studies demonstrate how often overlooked factors have a substantial impact on individuals' attitudes toward waste management, thereby influencing the state of the environment.

Along with recycling, Cecere et al. (2014) focus more on altruistic attitudes and less on social orientation or peer pressure, whereas Sujauddin et al. (2008) talk about the promise of transformed domestic waste as a resource in the condition of understanding of the role of individuals in the process of waste management. The purpose of the present study is to examine the household waste management scenario in Ward 35 of Gazipur City Corporation in terms of the issues and prospects of enhancing the waste management activities. The literature review aims to establish the existing situation in waste management and utilizes the local and global experience and skills in order to give some practical recommendations on improving environmental sustainability and health in the area.

3. Rationale of the Study

Poor waste management causes pollution that negatively impacts the quality of the air, water and soil causing serious health hazards. The threats include health complications like respiratory problems, waterborne diseases, and other health-related problems. Also, it may equally impact negatively on local plants and animals, interfering with ecosystems and causing biodiversity to reduce. The problem is also aggravated by the high rate of urbanization and expansion in Gazipur especially in Ward 35, which leads to the increased level of wastes and various other negative impacts. It requires a proper waste management system to deal with the increasing amount of waste. Waste management infrastructure should be improved to facilitate the high rate of urbanization that may overwhelm the existing systems and create unhealthy environments and ineffective methods of garbage collection. Poor management of waste may

also cause the environmental cleanup, human health, and tourism earnings to be increased (Zohoori and Ghani, 2017). The effective waste management through recycling and composting can convert waste to resources and can create a financial gain. Clean and hygienic living conditions are crucial to improving the quality of life of the residents and the waste management plays a significant role in it. Haider and Raza (2021) reveal that community engagement in waste disposal processes is essential to achieve cooperation and the feeling of responsibility among the locals. Such research may be used to inform legislators about the existing opportunities and challenges in waste management to help them develop specific and effective regulations concerning waste management. The study is micro level and it follows the case study research method that particular situation regarding the household waste management within ward 35 of Gazipur City Corporation and what needs to be done to improve the practice of waste management will be examined. The detailed knowledge of the socio-economic and cultural issues affecting waste management in Ward 35 will facilitate the provision of the tailored, efficient, and sustainable solutions. Moreover, it is possible to investigate the new methods of waste management, which include public-private partnerships and community-based waste management systems that can result in more practical and sustainable waste management. Hence, research on the household waste management in Ward 35 is critical in regard to solving environmental, economic, social and policy challenges, improving the health of the population, and improving the overall life quality. This holistic methodology guarantees that solutions derived are region-specific, sustainable and can help in tackling the complex nature of challenges of waste management in the area.

3.1 Objectives

The primary objective of this study was to analyze the current practices, challenges, and awareness of households regarding solid waste management in Ward 35 of Gazipur City Corporation. To achieve this, the study employed a structured household survey as the main research method. A sample of 200 households were selected from a total population of 85,226 using random sampling techniques. Face to face interviews involving a pre-tested questionnaire on household demographics, patterns of waste generation, waste disposal and attitudes to waste management were conducted to collect data.

The specific objectives were as follows:

- i. Examine the types and disposal methods of household waste.
- ii. Assess household awareness, attitudes, and challenges in waste management.
- iii. Provide recommendations for improving household waste practices.

4. Data Analysis

4.1 Survey Instrument

Surveys are most commonly conducted using questionnaires, also referred to as inventories, tests, batteries, checklists, scales, schedules, indexes or indicators (Young, 2015). The researchers adopted the use of a structured questionnaire survey as the most suitable research tool due to the descriptive objective, diversity in literacy, and to confirm local service characteristics among other research methods (e.g., interviews, observations). What is more,

such method has the capability to collect standardized data on a considerable scale, offering a convenient format of standardized questions and answer choices, which allows to easily collect and analyze data (Bryman, 2016). A pilot study was conducted involving 50 participants to test reliability and clarity of the survey questions before the actual administration of the survey. Pilot testing is a very important stage of questionnaire development, as it allows researchers to point out and resolve any ambiguities, inconsistencies, and comprehension problems in the survey instrument (Dillman et al., 2014). The questionnaire was then refined to make it clear and comprehensible in accordance with the cultural context of the target population on the basis of the feedback obtained during the pilot study. According to Fowler (2013), the validation and reliability of the collected data is improved through the repetitive improvement of questionnaires which strengthens the study results. Thus, in this study, a structured questionnaire was used to collect data on solid waste management practices and perceptions of people living in the Ward 35 of Gazipur City Corporation to guarantee the validity and reliability of the information by consulting the relevant literature and conducting a pilot study of 50 individuals.

4.2 Sample Selection and Data Collection Procedure

This study aims to gather data from 200 respondents from a population size of approximately 85,226 in Ward 35 of Gazipur City Corporation (Bangladesh Bureau of Statistics, 2022). The sample size was first determined using Yamane's (1973) simplified formula,

$$n = \frac{N}{1 + Ne^2}$$

where $N=85,226$ and the desired precision $e = 0.07$. This gives $n = \frac{85,226}{1 + 85,226 * 0.07^2} \approx 204$

Based on this, 200 respondents were selected as a feasible sample. To verify adequacy, Cochran's (1977) formula for the Margin of Error (MoE) with finite population correction was applied:

$$\text{MoE} = Z \sqrt{\frac{p(1-p)}{n} \cdot \frac{N-n}{N-1}}$$

with $Z=1.96$, $p=0.5$, $n=200$, and $N=85,226$. Substitution yields $\text{MoE} \approx 0.069$, i.e., $\pm 6.9\%$ at the 95% confidence level. This precision is acceptable for descriptive research. Additionally, Roscoe (1975) recommended that behavioral studies typically require samples between 30 and 500 respondents, a guideline within which the chosen sample of 200 comfortably falls.

This approach ensures that the study can generate accurate and broadly applicable results, especially in exploring the connections and variations in attitudes and practices related to solid waste management across different demographic groups. To accurately reflect the population of Ward 35, it is crucial to select a representative sample that encompasses age, gender, education, marital status, occupation, and family size.

A pilot study was conducted over 10 days in December 2023. Followed by this, the main data collection period continued from February 2024 to April 2024, conducted over 60 days. In-person interviews were conducted to maximize response rates and clarify any ambiguities in the survey questions. This method emphasizes human interaction and was chosen over mail or

internet surveys to allow interviewers to address unclear questions directly. In-person interviews are preferred for their emphasis on human interaction compared to methods like mail or internet surveys, allowing interviewers to promptly address any unclear questions, thereby enhancing the completeness and accuracy of respondents' responses (Bryman, 2016 and Dillman et al., 2014). This study adopted meticulous data collection techniques, in-person interviews, and a household-based unit to ensure precision, optimize response rates, and accurately represent household behaviors and attitudes.

4.3 Data Management and Analysis

Microsoft Excel is a tool that is effective in sorting, cleaning and conducting preliminary data analysis efficiently so that the researchers can easily identify and correct any discrepancy or error (Nathans et al., 2012). With its powerful data management features and easy to use interface, it can be argued that Excel is the subject of choice when it comes to initial data entry and organization in this study. The study had been presented rigorously and understandably through the use of data entry and statistical analysis as well as through the visual aids such as several charts and tables in Microsoft Excel, thereby increasing the impact of the research, its reliability, and its comprehensibility.

5. Results & Discussion

5.1 Socio-economic and demographic data

The study explored the socio-economic and demographic characteristics of the respondents, providing insights into the community's makeup and its relationship with waste management practices. The study achieved a balanced gender representation, with 51% male and 49% female respondents. This near-equal distribution ensures diverse perspectives on household waste management practices (Figure-1).

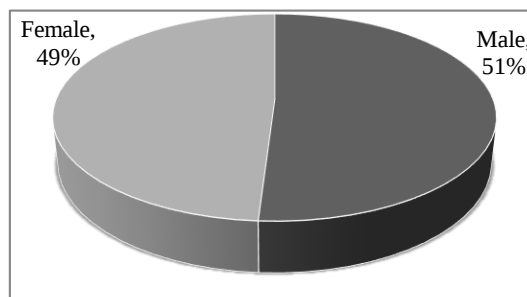


Figure 1 Percentage distribution of the respondents by gender

Participants ranged in age, with the largest group (29%) between 30 and 39 years. Younger adults (20–29 years) and middle-aged individuals (40–49 years) were also well-represented at 24% and 21%, respectively. A smaller portion of respondents was above 50 years (Figure 2).

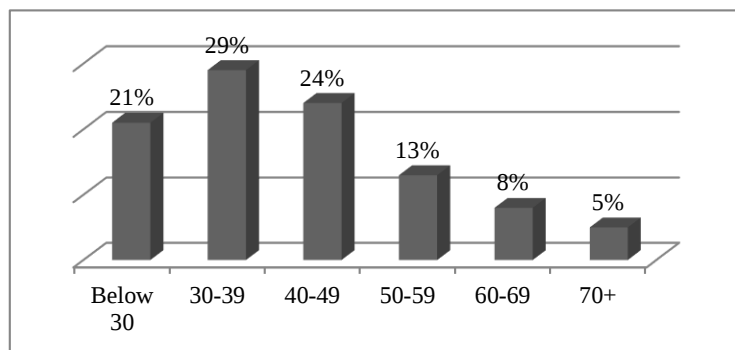


Figure 2 Percentage distribution of the respondents by age structure

Education levels varied significantly. The majority had completed secondary education, with 24% reaching SSC and 26% HSC levels. Nine percent had completed graduate studies, and 3% had postgraduate qualifications. Thirteen percent of participants were illiterate, highlighting a potential barrier to understand proper waste management practices (Figure- 3).

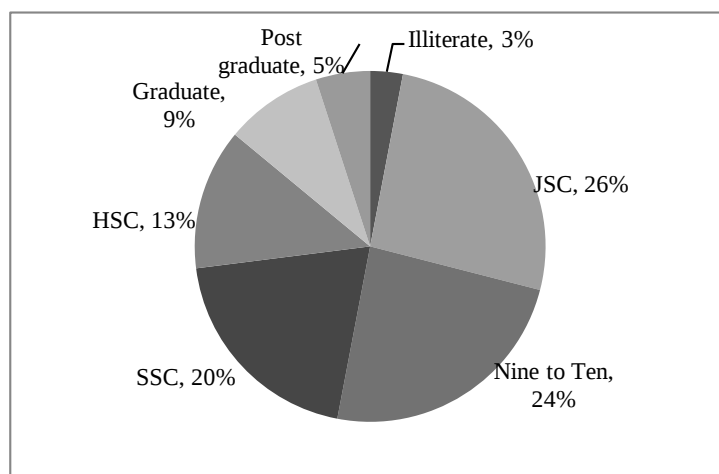


Figure 3 Percentage distribution of the respondents by level of education

Over half (57%) of the respondents were married, while 26% were unmarried. Smaller proportions included widowed individuals (12%) and divorced individuals (5%) (Figure-4). Families with 5–6 members were most common (30%), followed closely by families with 3–4 members (29%). Smaller (2-member) and larger families (7+ members) were less common (Figure-5).

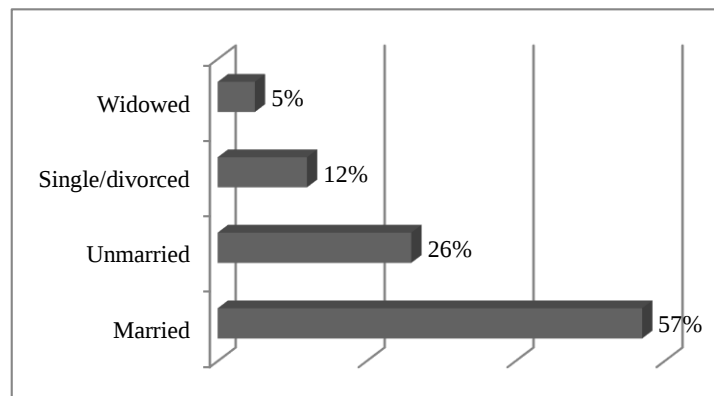


Figure 4 Percentage distribution of the respondents by marital status

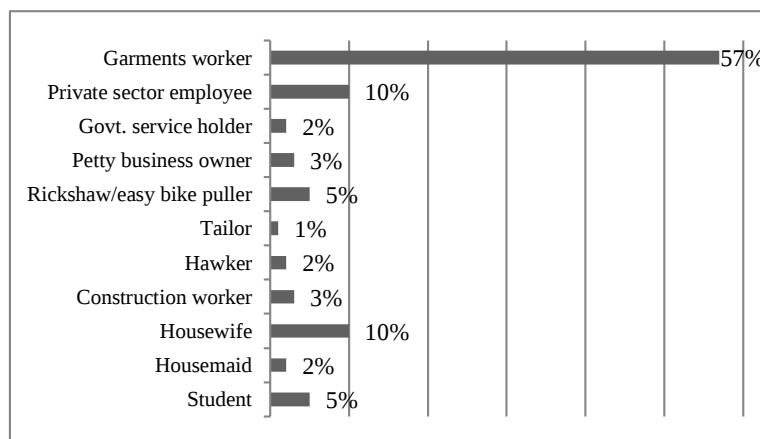


Figure 5 Percentage distribution of the respondents by family member

The community exhibited diverse employment sectors. Significant groups included garment workers (21%), housewives (18%), and private sector employees (15%). Other participants worked in small businesses, construction, rickshaw/easy-bike driving, and as tailors or housemaids (Figure-6).

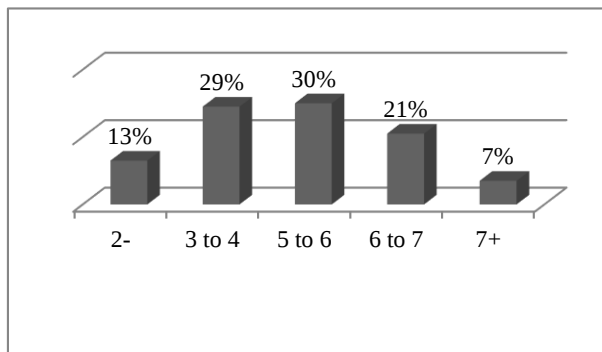


Figure 6 Percentage distribution of the respondents by occupation

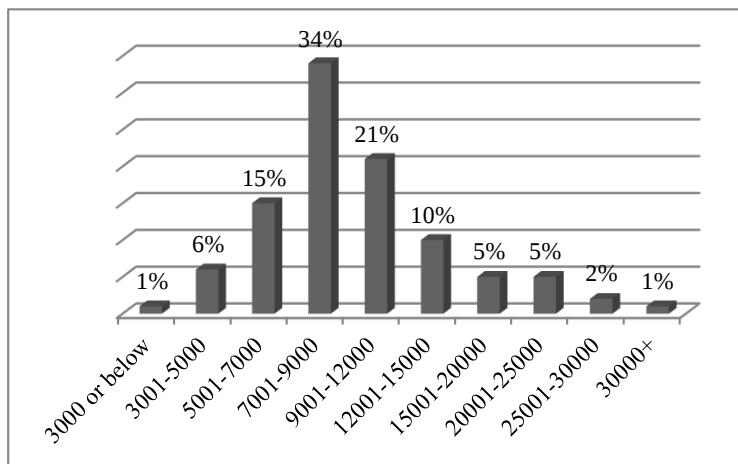


Figure 7 Percentage distribution of the respondents by monthly income level (in Taka)

Household incomes reflected varying economic statuses. A large segment earned between Tk. 7,001 and Tk. 9,000 (34%), while 21% earned Tk. 9,001–12,000. Lower-income groups earning Tk. 5,001–7,000 comprised 15% of respondents. A small fraction earned above Tk. 12,000, indicating limited economic diversity (Figure-7). Most participants rated their living conditions as “average” (56%). However, a significant proportion reported “bad” (20%) or “very bad” (7%) living environments, indicating dissatisfaction with urban infrastructure and services (Figure-8).

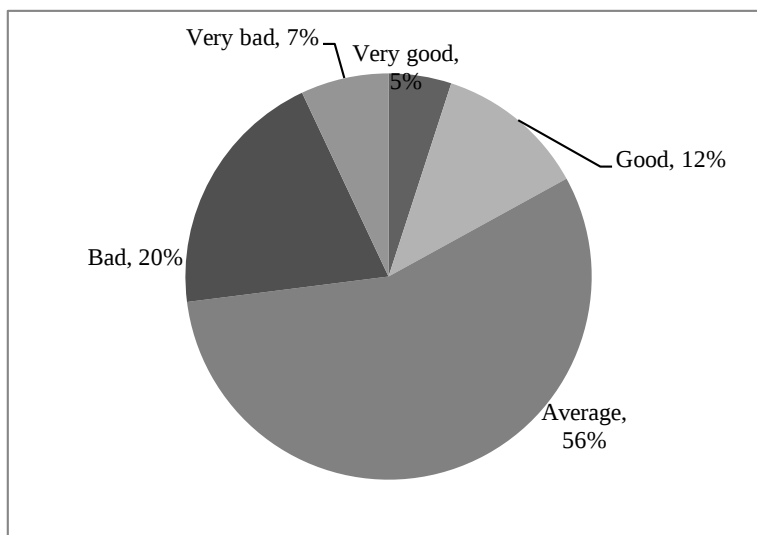


Figure 8 Percentage distribution of the respondents by environment of residential area

5.2 Situation of the Household Waste Management

The study examined waste management practices, preferences, and issues encountered by residents. Thirty percent of the respondents disposed of waste using polythene, which is a common yet harmful environmental practice. Twenty-four per cent stored waste at home, and fifteen per cent stored it outside. Only seven percent used designated dustbins. Only a small percentage discarded waste through the window (5%) or corridors (6%) (Table- 1). Majority of the respondents (81%) discarded waste in designated dustbins. Ten percent discarded waste directly to collectors of city corporations, and others on roadsides (6%) or open places (3%) (Table- 2). Thirty one percent were residing within 150 meters to waste collection points. A quarter of them (25 %) lived within 200 meters, with smaller proportions residing within 250 meters (15 %) and above 300 meters (4 %) (Table- 3). Fifty-three percent of the respondents said they picked up waste daily. Others were collected every two days (28%), or every three days (19%) and there were differences in service reliability (Table-4). Waste collection was done mostly at noon (78%), followed by smaller proportions in the morning (13%) and evening (9%) (Table-5). The most frequent form of waste transportation was non-motors semi-open vehicles (57%). Motorized open vehicles (14%) and motorized semi-open vehicles (12%) were used less frequently. Manual transportation, involving waste wrapped in polythene, accounted for 8% (Table- 6). Respondents reported severe environmental and health impacts. All respondents (100%) noted the spread of bad odors. Ninety-five percent identified air pollution, and 87% reported disease spread. Seventy-six percent highlighted the creation of unhygienic conditions (Table- 7). Most participants (48%) believed the City Corporation held primary responsibility for waste management. Others saw waste management as welfare work (22%) or

service-oriented (19%), while 7% were unaware of proper processes (Table- 8).

Table 1 Percentage distribution of the respondents by the nature of waste management in the household

Nature of waste management in the household	Frequency	%
Keep outside of the household	30	15
Keep inside the household	48	24
Keep in bucket in the household	26	13
Keep in polythene	60	30
Throw into the window	10	05
Throw from the corridor	12	06
Keep in the assigned dustbin	14	07

Table 2 Percentage distribution of the respondents by the existing waste discharge from the household

Existing waste discharge from the household	Frequency	%
Keep in open place beside the household	06	03
Keep on the road beside the household	12	06
Keep into the dustbin in the assigned place	162	81
Give directly to the waste collector from city corporation	20	10

Table 3 Percentage distribution of the respondents by the distance between existing waste gathering places of City Corporation from household

Distance between existing waste gathering places of City Corporation from household	Frequency	%
Between 100 meters	24	12
Between 150 meters	62	31
Between 200 meters	50	25
Between 250 meters	30	15
Between 300 meters	34	17
More than 300 meters	08	04

Regarding living situation, the data show that a significant portion of respondents rated their living conditions as "bad" or "very bad", highlighting dissatisfaction with urban services. Poor waste management can be one of the sources of these negative perceptions. Ensuring better

Table 4 Percentage distribution of the respondents by the frequency of existing waste collection by City Corporation

Frequency of existing waste collection	Frequency	%
Everyday	106	53
Once per two days	56	28
Once per three days	38	19

Table 5 Percentage distribution of the respondents by the time of waste collection

Time of waste collection	Frequency	%
Morning	26	13
Noon	156	78
Evening	18	09

Table 6 Percentage distribution of the respondents by the way of carrying out the gathered waste

Carrying out of gathered waste	Frequency	%
Using motorized open vehicle	28	14
Using motorized semi open vehicle	24	12
Using non-motorized open vehicle	18	09
Using non-motorized semi open vehicle	114	57
Carrying manually by rapping with polythene	16	08

Table 7 Percentage distribution of the respondents by the impacts of openly carrying out the waste

Impacts of openly carrying out the waste*	Frequency	%
Spread out of bed smell	200	100
Spread out of disease	174	87
Air pollution	190	95
Create unhygienic environment	152	76

***Multiple response**

Table 8 Percentage distribution of the respondents by the type of waste management activity

Type of waste management activity	Frequency	%
Service oriented	38	19
Welfare work	44	22
Responsibility of City Corporation	96	48
None of them	08	04
Don't know	14	07

waste collection and sanitation infrastructure would therefore have a direct positive impact on

the living standards of residents in Ward 35. Fifty-six percent perceiving their living standards as average, twenty percent as bad, seven percent as good, five percent as very bad and five percent as very good. The perceptions of urban residents on their living conditions may have great influence on their quality of life and satisfaction with their urban environment. Research indicates that subjective assessment of living conditions is very important because it indicates the socioeconomic and environmental determinants of the quality of life (Marans and Stimson, 2011; Phillips, 2010 and Pacione, 2003). A typical definition of an average rating is a moderate life quality determined by factors like housing and safety. On the other hand, low ratings indicate the areas where change is required and may offer useful information to focus the effort in improving the living standards. In addition, other studies (Ruth and Franklin, 2014; UN-Habitat, 2010) also suggest the significance of inclusive urban development in the context of the equitable allocation of living benefits, the development of resilient communities, and the maintenance of high quality of life among all inhabitants.

Regarding waste management, thirty-percent of the respondents said that they kept the waste in polythene and eighty-one percent kept the waste in waste disposal areas. Research (Pruss-Ustun et al., 2016; UN-Habitat, 2010; Hopewell et al., 2009 and Njeru, 2006) has determined that polythene bags are commonplace in waste disposal in urban centres because they are affordable and easily accessible. They are instrumental in the control of household wastes, pests, and provision of an efficient collection of garbage, as plastic garbage has hazards to the environment. Closeness of waste collection sites is a major determinant of waste management efficiency and community health since short distances facilitate appropriate waste disposal and lessens illegal dumping, which is consistent with the urban waste management principles of efficient services delivery (Guerrero et al., 2013 and Hoornweg and Bhada-Tata, 2012).

According to the studies carried out by Kaza et al. (2018) and Henry et al. (2006), the regular collection of waste in urban settings is important to reduce the health risk, waste-related hazards, including pest infestation and unpleasant odors, and environmental pollution. Furthermore, the number of times that the waste is collected is an indicator of how well the city handles waste. Also, research by Guerrero et al. (2013) and Katusiimeh et al. (2012) indicate that regular collection of waste in urban areas is not only essential in preventing cases of harm to human health and reduction of the environment, but also enhancing awareness and engagement in waste management services. In other studies, UN-Habitat (2010) and Wilson et al. (2013) emphasize the importance of city corporations in collecting and disposing of waste as it is a critical step towards long-term sustainability and a limited impact on the environment.

Waste collection in developing countries is done using non-motor vehicles owing to the state of infrastructure and economy, even though there are environmental and health risks associated with the use of non-motor vehicles because of the potential trash spills (Hoornweg and Bhada-Tata, 2012 and Henry et al., 2006). Open dumping of wastes in urban centers poses environmental and health hazards, including settlement of rodents, polluting water, and releasing of toxic gases. To reduce these negative effects, good waste management should be practiced by means of proper disposal and treatment and the city corporation bears the burden

of waste management (Kaza et al., 2018; UN-Habitat, 2010 and Wilson et al., 2006).

6. Conclusion

The study shows that 56% of participants describe their living situation to be "typical," which implies that the quality of life is moderately satisfactory. Nevertheless, 27% of respondents said that they live in bad or Very Bad conditions, with the room to improve the quality of housing and the safety of the neighborhood. This underscores the areas that require to be done better like building quality, accessibility of services, and the safety of neighborhoods. The public opinions about the living standards in urban areas are needed to identify the areas that are lacking the urban infrastructure and services and to guide the policy makers to those initiatives that are geared towards improving the living standards in urban areas (UN-Habitat, 2006). The positive feedback indicates that they can be best practices in living in the city. The social perceptions offer a good idea about the effectiveness of the existing infrastructure and services, which is crucial in the development of policies and urban planning. Whereas, negative ratings indicate areas that require improvement, positive ratings demonstrate effective strategies that may be advantageous to the whole community.

Since 75 percent of the population resides within a 150-meter radius of a waste collection station, the distance is important in improving the efficiency of the waste disposal and minimizing the illegal dumping. Proper management of waste does not only reduce health risks but also enables the environment to be sustainable (Henry et al., 2006) but also assist in addressing the illegal dumping activities (Sarkar, 2003).

To create an inclusive approach to waste management in the municipality, there is a dire need to do away with an open dumping of garbage. This is a universally unacceptable approach because of the numerous related issues which impact the whole community. Proper waste management practices that involve collection, storage, and disposal are vital in ensuring that the city is clean, diseases are minimized, and the environment does not get polluted (Troschinetz and Mihelcic, 2009).

Essentially, although average living standards are generally agreed, much of the population lives in a challenging condition, which brings to the fore the role of urban development. Regardless of the existence of proper waste management procedures, certain problems are still lingering particularly with regard to the kind of vehicles used and the role that municipal authorities play in ensuring that the environment and people are clean. These experiences are essential towards creating sustainable and habitable cities. Thus, the research proposed spreading awareness among the Ward 35 residents, promoting household waste collectives, and offering necessary training to waste collectors.

7. Recommendations

- Concentrate in the areas where the locals were not satisfied with their living conditions and describe it as bad or very bad. This may involve the enhancement of the quality, safety and availability of residential and major services.
- Target the underlying socioeconomic and environmental factors that affect the

perception of average living conditions by people. This includes improving career opportunities, medical care and education as well as green spaces.

- Promote inclusive cities to ensure that resources are evenly distributed and that the living standards of all populations are increased. Engage the community in the process of planning to have a better insight into their needs and priorities.
- Polythene bags, though economical, are harmful to the environment. It is essential to promote alternatives based on biodegrading and recycling programs and educate people about their environmental impact.
- Streamline the location of waste collection sites based on population density and waste production trends to encourage proper disposal of its waste and reduce illegal dumping.
- To avoid health risks and environmental pollution, the City Corporation should regularly finance and organize the services of waste collection daily.
- Replacement of semi-open, non-motorized transport with motorized, closed transportation to reduce health risks and environmental spills, and make waste collection vehicles appropriate to the urban infrastructure and economic status.
- Tougher laws, well-built waste handling units, and awareness of health and environmental hazards of open dumping are needed to discourage open dumping and encourage community participation in cleanliness.
- Ensure that the roles of City Corporation in the development of the comprehensive waste management strategies, consult residents and create resilient communities with the help of open communication and inclusion in decision-making processes.

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