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SOCIAL PERCEPTIONS AND ATTITUDES TOWARDS WASTE MANAGEMENT

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ABSTRACT

As the global population grows, an abundance of products are being produced to fulfill endless demands, leading to a corresponding rise in waste and associated challenges. Waste sorting is the most efficient method to decrease waste volume, and addressing waste-related issues requires universal recognition of the significance of waste sorting and its integration into daily routines - recycling waste and repurposing items that may be unwanted by some but valuable to others. Waste education is crucial in raising awareness about the importance of reducing, reusing, and recycling waste.

This study explores public perceptions and attitudes toward waste management in Mongolia, focusing on Ulaanbaatar. The increase in waste generation due to population growth, urbanization, and industrialization has made effective waste management a crucial issue.

The research examines citizen's awareness, knowledge, and practices related to waste sorting and recycling using survey data. Results show that majority of respondents sometimes sort their waste, while some of them do not sort at all, indicating limited awareness and infrastructure challenges. A majority of participants rated Ulaanbaatar's waste management as poor, but most of them acknowledged recycling as an effective waste processing method.

The study highlights gaps in education and information dissemination, with more than sixty present of citizens reporting minimal exposure to waste separation education. The study underscores the need for early childhood education on waste management, ongoing training for citizens and producers, targeted information campaigns, and increased public involvement to establish sustainable waste management practices.

Recommendations include improving waste collection infrastructure, implementing educational programs, and promoting community participation in waste management planning.

Introduction

As a result of population growth, urbanization, and industrialization, there has been a significant increase in the volume of waste generated. The composition and characteristics of this waste vary depending on the economic structure of each country. In our country, for instance, agricultural, healthcare, household, and industrial waste from centralized areas were predominant before 1990. However, the types and structures of waste have since expanded. This increase in waste types has led to a rise in overall waste volume, posing challenges for waste recycling technology.

Various technologies are employed globally to categorize, gather, handle, and eliminate waste according to its composition and characteristics, taking into account economic capacities, societal practices, legal requirements, and policy initiatives. In our nation, waste incineration and landfilling are prevalent methods.

In 2022, Mongolia has 396 waste collection points, spanning a total area of 3,811.6 hectares. This represents 9 waste collection points or 2.3 percent increase in the number of waste collection points and a 2.8 percent increase in the area compared to 2021.

The number of waste collection points grew by 9 points, representing a 2.3% increase, while the area of these points expanded by 104.7 hectares, a 2.8% rise compared to 2021.[1]

Over half of the participants rated their knowledge about waste as average, indicating that there may be a lack of information and awareness campaigns on waste separation (Figure 1).
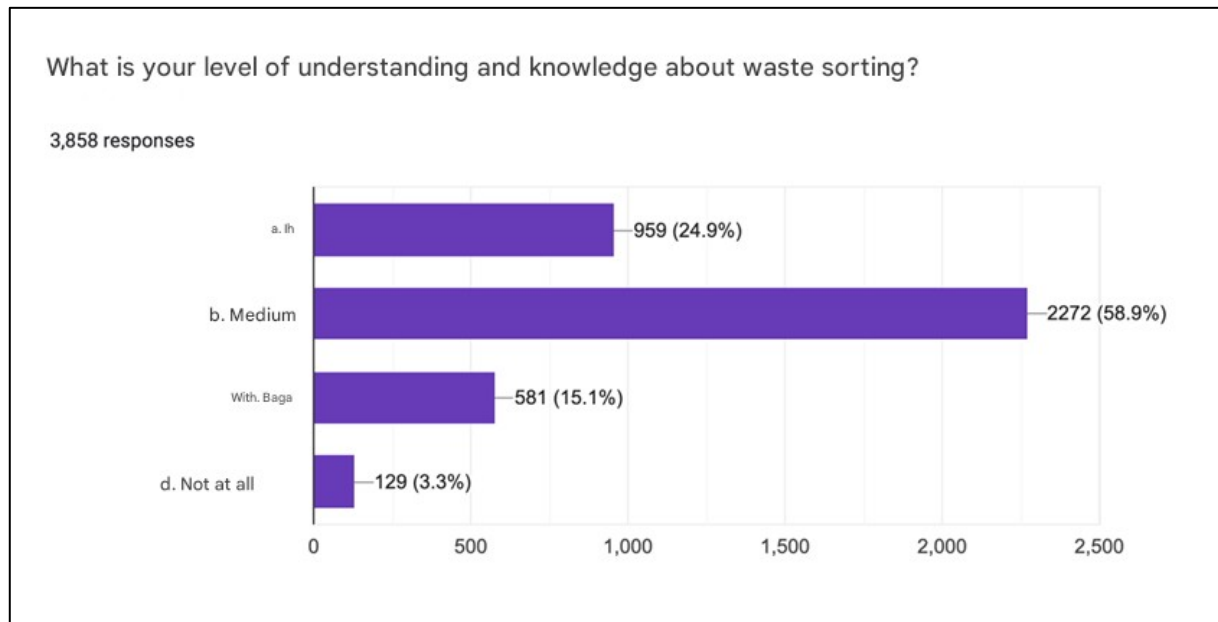

Fig. 1. Public awareness and comprehension of waste

The data shows that 54.5% of respondents occasionally sort their waste, while 26.9% do not sort it at all. This indicates a lack of awareness among citizens about waste sorting, possibly exacerbated by limited access to sorting bins. Environmental factors, infrastructure, and the availability of designated bins and tools are crucial in promoting regular waste sorting habits (Figure 2).
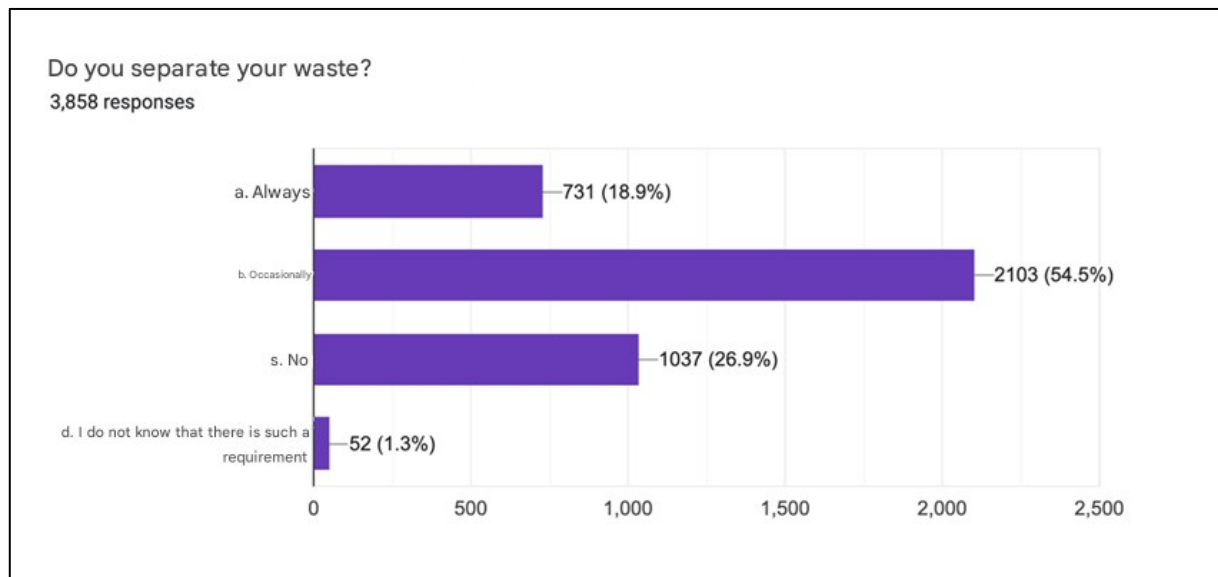

Fig. 2. Research on the habits and practices of waste sorting among citizens

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[1] Solid Waste Account-2022, https://downloads.1212.mn/CnDXenDYFO6eT1-Ess9US_yIn-Kp9QLgj-CnP9-.pdf

Participants also assessed Ulaanbaatar's waste management performance as poor by 46.2 percent and very poor by 25.3 percent (Figure 3).
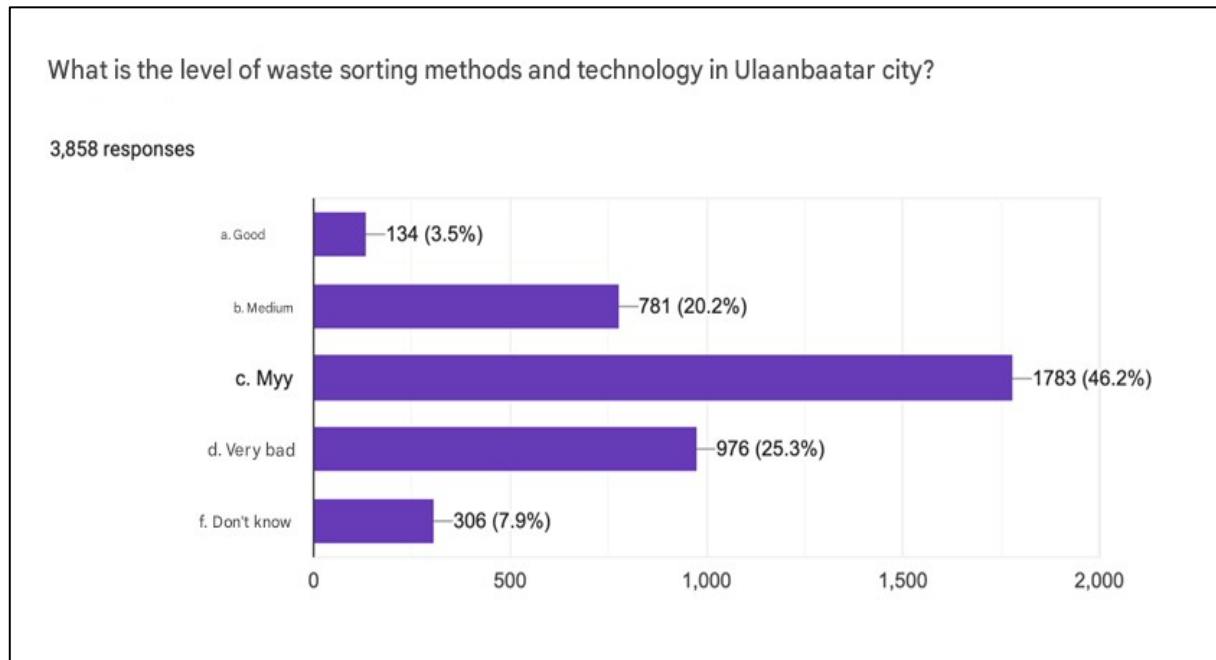

Fig. 3. Quality of waste management operations in the city of Ulaanbaatar

Based on the above research, 79.1 percent of participants indicated that recycling is a more efficient option. Furthermore, 31.1 percent of participants expressed their willingness to use recycled products, showing a readiness to understand waste sorting and separation methods (Figure 4).
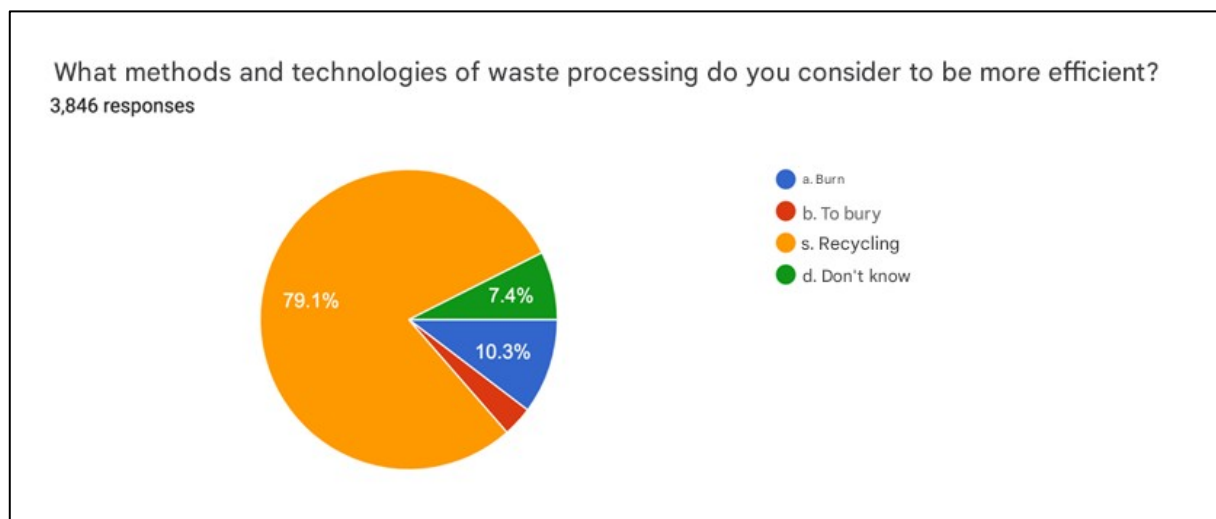

Fig. 4. Public opinion on waste processing methods and technologies

The survey indicates that there is a lack of awareness and education regarding waste separation and recycling, with 67.3% of citizens stating they have received minimal or no information on waste separation, and 15.3% reporting receiving no information at all (Figure 5).
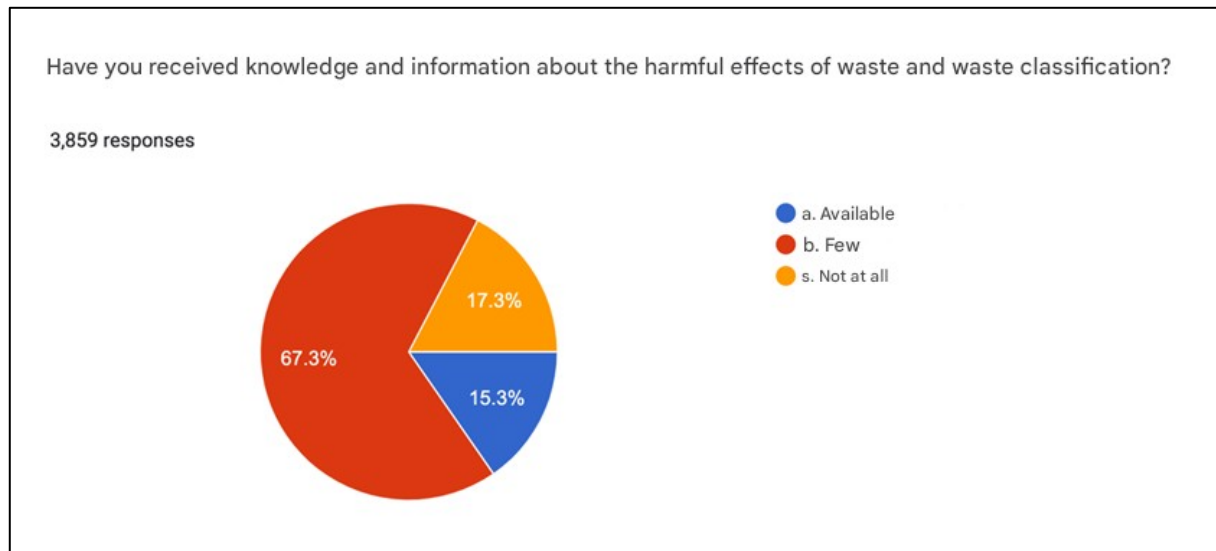
Fig. 5. *Providing knowledge, information, and educational activities on waste separation*

Training and education are crucial in tackling the issues that citizens face in managing waste. Waste training and education help raise awareness about waste management, enhance understanding of its intricacies, empower individuals, communities, and organizations to make informed choices and investments in waste management, and promote a more sustainable future. Based on the survey results from Ulaanbaatar city residents on waste management, 86% of participants rated the four primary municipal waste management issues as "poor" (Figure 6).
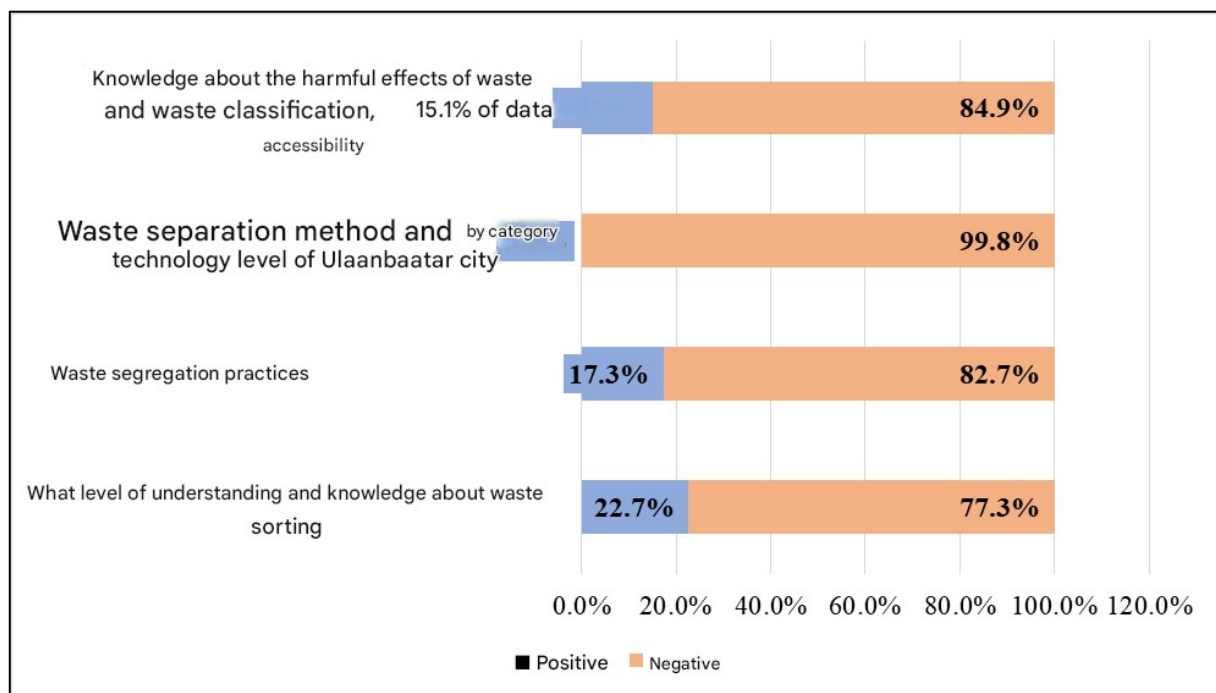
Fig. 6. *Opinions and feedback from residents of Ulaanbaatar city on important waste management issues.*

As seen from the above research, due to a lack of awareness, information, and education on waste, as well as insufficient infrastructure for waste collection and sorting, the general public has not fully grasped the negative impacts of waste.

Consequently, the practice of sorting waste has not been consistently established. To effectively prepare urban residents for proper waste management, it is crucial to focus on educating children early on and investing

resources in educational and awareness campaigns. Regular training sessions for citizens and producers are also essential. Providing informational materials at waste disposal sites, on community notice boards, in local newspapers, and other public gathering places can help promote better waste management practices.

Education on waste management should begin at the primary level to instill zero waste habits early on. Schools and educational institutions are key in teaching children about recycling and the impacts of improper waste disposal. This foundational knowledge can empower future generations to actively engage in waste management efforts, leading to a significant reduction in waste.

On the other hand, dividing the map into categories, placing markers without overlapping, organizing and sharing in institutions, companies, and public organizations, optimizing routes, time for receiving, delivering, and collecting, and making points, routes, and markers accurate and precise will greatly facilitate correct and efficient navigation for individuals and the general public.

The benefits of public participation in mapping management education will be enhanced. Seminars, workshops for public engagement will provide valuable information, share best practices, and create a platform for discussing issues related to mapping. Collaborating with the local community to improve mapping, re-implementing projects with public participation will be crucial for the success of the initiatives.

Conclusions

This study highlights significant challenges in Mongolia's waste management system, particularly in Ulaanbaatar, due to insufficient public awareness, inadequate education, and underdeveloped infrastructure. Survey findings indicate that while 79.1% of respondents acknowledge recycling as an effective waste processing method, only 54.5% occasionally sort their waste. The majority of participants (71.5%) rated Ulaanbaatar's waste management system poorly, emphasizing the urgent need for comprehensive improvements.

To address these challenges effectively, a comprehensive approach is required. First, there is a need to prioritize educational initiatives, starting from primary education to instill proper waste management practices early on. Schools and educational institutions can play a vital role in educating children about recycling and the environmental consequences of improper waste disposal. This foundational knowledge will empower future generations to actively engage in waste reduction efforts.

Secondly, regular training programs for citizens and producers should be introduced to enhance awareness and practical knowledge of waste sorting and recycling. Placing informational materials at waste disposal sites, community notice boards, local newspapers, and public spaces can significantly improve public understanding of appropriate waste management practices.

Infrastructure development is also crucial. Existing waste collection and sorting facilities need to be expanded and optimized, with improved mapping and route planning to increase efficiency. Establishing clearly marked waste collection points, optimized collection routes, and precise markers will make it easier for individuals and the public to navigate the system.

Lastly, public participation in waste management planning and implementation is essential for sustainable solutions. Organizing seminars and workshops for community engagement can provide valuable platforms for sharing information, discussing best practices, and collectively addressing challenges. Collaborative efforts between local authorities, communities, and waste management organizations will be key to developing effective and sustainable waste management systems.

By addressing these key areas simultaneously, Mongolia can progress towards establishing a more sustainable and efficient waste management system that not only reduces environmental impact but also contributes to public health and urban sustainability.

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