Public Awareness Survey on Waste Segregation in Selected Areas of Silang, Cavite

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Abstract: This study investigates public awareness and attitudes toward waste segregation in selected barangays of Silang, Cavite, using a mixed-methods approach that combines a descriptive survey of 200 residents and a focus group discussion (FGD). The research is grounded in the context of Republic Act 9003, the Ecological Solid Waste Management Act of 2000, and aims to assess community understanding, satisfaction with waste services, and willingness to contribute financially to improved waste management. Findings reveal high general awareness of waste segregation and its environmental benefits, but limited familiarity with specific provisions of RA 9003 and access to educational initiatives. While most respondents express satisfaction with current services and a strong willingness to participate in waste-related activities, financial constraints and concerns about transparency affect their readiness to pay for enhanced services. The study highlights the critical role of local government units, community trust, and consistent leadership in sustaining effective waste management systems. This research contributes to the development of more inclusive, transparent, and community-driven waste management strategies in the Philippines by providing localized insights into public engagement and barriers to participation.

Keywords: waste segregation, public awareness, solid waste management.

INTRODUCTION

Solid waste generation is a growing challenge in urban communities, driven by daily consumption and rapid population growth. In 2016, cities worldwide produced 2.01 billion tonnes of solid waste a figure expected to rise to 3.4 billion tonnes annually by 2050 (World Bank, 2019). Financial burdens are also increasing, with global waste-related expenditures projected to reach $375 billion per year by 2025 (Population Matters, 2016).

To address this, the Philippines enacted Republic Act 9003, the Ecological Solid Waste Management Act of 2000, mandating proper segregation, collection, and disposal of waste. Despite this legal framework, many Local Government Units (LGUs) continue to face implementation gaps (DILG, 2019).

Public awareness is essential for effective waste segregation. This study evaluates the current level of awareness and attitudes toward waste management in selected areas of Silang, Cavite, with a focus on community participation and financial willingness to support collection

services. By providing localized insights, the findings aim to help LGUs design more inclusive, transparent, and community-driven waste management systems aligned with RA 9003.

LITERATURE REVIEW

Research across various educational contexts has consistently highlighted the multifaceted nature of student attrition. Academic performance, program type, and admission criteria significantly influence completion rates, as shown by Almenaie (2018), with students in medical fields outperforming those in humanities. Bermudo (2017) and Loriens (2016) emphasized institutional shortcomings such as lack of support, rigid structures, and poor engagement as major contributors to drop-out, especially in distance education. Premacio et al. (2020) and Reech (2019) further stressed the impact of technological barriers and academic isolation, advocating for stronger virtual support and early intervention. Gelso (2001) introduced a psychological perspective, suggesting that emotional connection and supportive faculty relationships are vital for student persistence. Hako et al. (2019) reinforced this by identifying poor study habits, mental health challenges, and unsupportive environments as key obstacles. Rice et al. (2014) highlighted the value of quantitative tools like mail surveys in understanding student experiences and informing retention strategies. Collectively, these studies underscore the need for holistic, student-centered approaches that address academic, psychological, and institutional factors to improve degree completion.

MATERIALS AND METHODS

1. Research Design: This study utilizes a mixed-methods approach, integrating quantitative and qualitative techniques to examine public awareness and behavior regarding waste segregation in Silang, Cavite. A descriptive-survey design will be employed for quantitative data collection, while a Focus Group Discussion (FGD) will provide qualitative insights into community attitudes and suggestions.

2. Participants/Data Sources: The study will involve 200 survey respondents, with 40 participants selected from each of five barangays using quota sampling to ensure equal representation. Additionally, one FGD will be conducted with 8–10 participants from various community sectors, including youth, parents, senior citizens, and barangay officials, to capture diverse perspectives.

3. Tools and Instruments: A survey questionnaire adapted from the Public Awareness Survey by the Department of Environment and Natural Resources and the Asian Development Bank will be used. It covers topics such as awareness of waste segregation, household practices, satisfaction with waste services, and preferences for future improvements.

4. Procedures: Data will be collected through door-to-door interviews using the structured survey questionnaire. To complement the survey, one FGD will be held with selected participants from different sectors. A semi-structured guide will facilitate the discussion, which will be recorded and transcribed with consent to capture community experiences and suggestions.
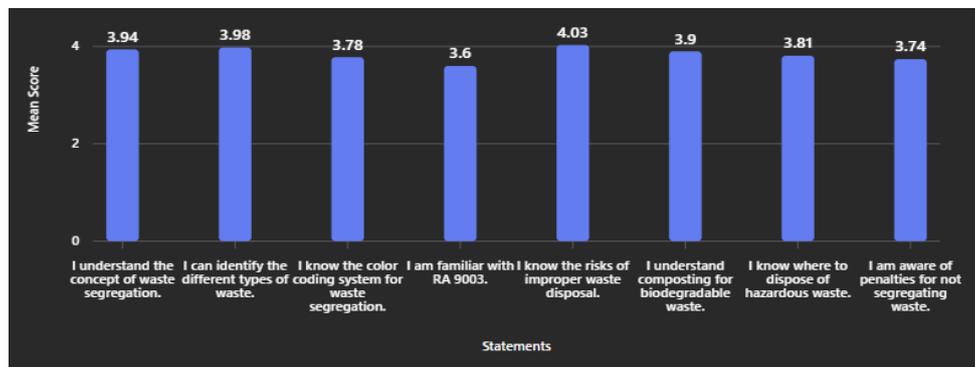
5. **Analysis Techniques**: Survey data will be analyzed using basic statistical tools like counts, percentages, and averages. FGD responses will undergo thematic analysis, categorizing shared ideas and concerns to provide deeper insights into community perspectives and uncover patterns beyond the survey findings.

RESULTS AND DISCUSSION

This part of the study shows what was gathered from the survey and FGD on waste segregation in selected barangays in Silang, Cavite.

Profile of the Respondents

The occupational profile of the 200 survey respondents. The most frequently reported occupation was housewife, accounting for 24.9% of the total. This was followed by government employees (9.6%), laborers (8.1%), and both students and drivers, each comprising 7.6% of the sample. The diversity in occupations reflects a broad representation of community members. Additionally, the mean age of respondents was 45.4 years, with a median age of 45, indicating that the majority were middle-aged adults. Likewise, a majority, 55%, reported earnings below ₱10,000, indicating that most participants come from low-income households. Smaller portions fall within the ₱10,001–₱20,000 (16%), ₱20,001–₱30,000 (14%), and ₱30,001–₱50,000 (13%) income brackets. Only 1% of respondents earn above ₱50,000 monthly.
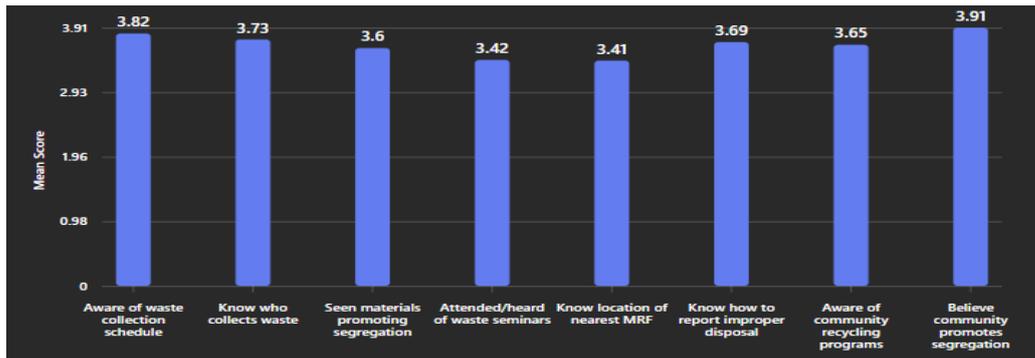

Figure 1: Level of Knowledge on Waste Segregation

Figure 1 indicates that respondents have a generally high level of awareness regarding waste management, with an overall mean score of 3.65. Most were aware of the waste collection schedule (mean = 3.82), who collects waste (mean = 3.73), and how to report improper disposal (mean = 3.69), suggesting that public information efforts are effectively reaching the community.

However, awareness was lower in areas requiring active engagement, such as attending seminars (mean = 3.42) and knowing the location of the nearest Materials Recovery Facility (mean = 3.41), both rated as "Neutral." Focus Group Discussions (FGDs) confirmed this gap,

with participants expressing uncertainty and a lack of clear information, consistent with Madrigal's (2018) findings on the limits of general awareness.

Despite these gaps, community-level initiatives appear to be making a positive impact. One FGD participant affirmed, "Yes, our barangay promotes segregation," supporting the highest-rated item, "I believe my community promotes waste segregation" (mean = 3.91). This suggests that while individual awareness varies, collective efforts are visible and influential.
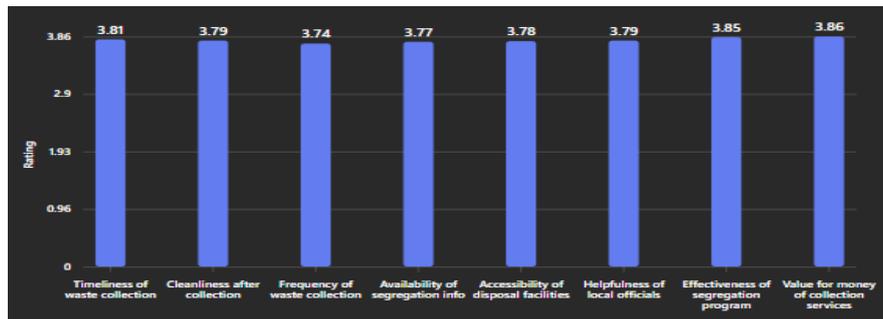

Figure 2 : Level of Awareness of Waste Management Systems

Figure 2 shows that respondents have a high level of awareness regarding waste management in their communities, with an overall mean score of 3.65. Most were aware of the waste collection schedule (mean = 3.82), who collects waste (mean = 3.73), and how to report improper disposal (mean = 3.69). These findings suggest that public information campaigns are effectively reaching the community, supporting the Department of Environment and Natural Resources' (2003) emphasis on the importance of educational outreach.

However, awareness was lower in areas requiring more active engagement. Scores for attending seminars (mean = 3.42) and knowing the location of the nearest Materials Recovery Facility (mean = 3.41) were both neutral, indicating uncertainty. Focus Group Discussions (FGDs) echoed this, with participants citing a lack of clear information and limited exposure to structured learning opportunities, consistent with Madrigal's (2018) findings on the depth of public awareness.

Despite these gaps, community-level efforts appear effective. One FGD participant affirmed, "Yes, our barangay promotes segregation," supporting the highest-rated item, "I believe my community promotes waste segregation" (mean = 3.91). This suggests that while individual awareness varies, collective initiatives are visible and impactful.
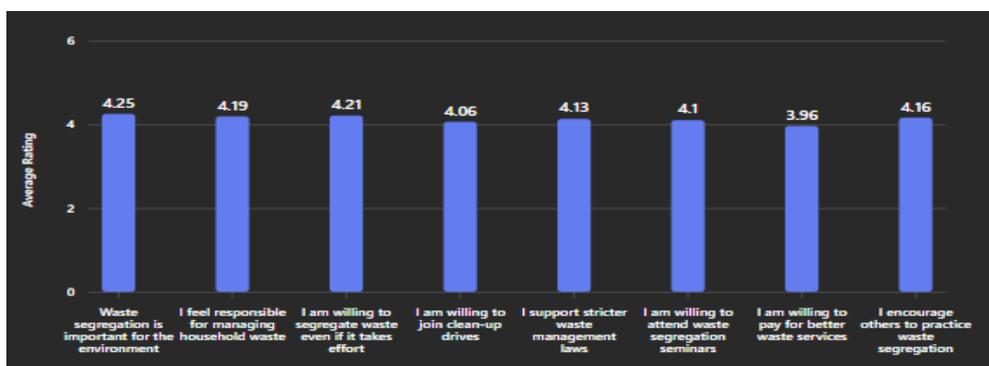
Figure 3: Level of Satisfaction with Waste Management Services

Figure 3 shows that respondents are generally satisfied with waste management services in their communities, with an overall mean score of 3.80. All items were rated "Satisfied," indicating positive perceptions of service quality. The highest-rated aspects were "Value for money of collection services" (mean = 3.86) and "Effectiveness of segregation program" (mean = 3.85), suggesting that residents appreciate the efficiency and affordability of the system. Other areas like timeliness, cleanliness, and facility accessibility also received favorable ratings, supporting Aquino et al.'s (2013) view that reliable services foster public cooperation.

Despite these positive ratings, Focus Group Discussions (FGDs) revealed concerns about infrastructure and communication. Participants noted the lack of proper facilities and shared that waste is sometimes disposed of outside the locality, raising cost and efficiency issues. One participant commented on the limited availability of information, which aligns with the survey score for "Availability of segregation info" (mean = 3.77), indicating a need for clearer guidance on waste procedures.

Implementation consistency also emerged as a concern. A participant remarked, "Implementation is possible, but…" suggesting that while systems exist, they are not always executed effectively. This reflects Atienza's (2014) findings on challenges in sustaining waste programs due to leadership changes and resource limitations. Overall, while satisfaction is high, improvements in infrastructure, communication, and program consistency are needed.

Figure 4: Level of Attitudes and Willingness to Act on Waste Segregation

Figure 4 shows a strong positive attitude toward waste segregation, with an overall mean score of 4.10. Respondents agreed on all items, reflecting high environmental responsibility and readiness to act. Top-rated statements such as the importance of segregation (4.25), willingness to exert effort (4.21), and personal responsibility (4.19) indicate deep commitment, consistent with Chakraborti et al. (2003) on the role of education in shaping behavior.

Focus Group Discussions (FGDs) confirmed active community participation, though financial support for improved services was more complex. The lowest-rated item, willingness to pay (3.96), suggests economic constraints. FGDs echoed this, with participants expressing support but citing affordability issues, aligning with Population Matters (2016).

Survey data identified clogged drainage as the most common waste-related issue, followed by health risks and pollution. FGDs linked these to uncollected plastic waste, especially labo and sando bags. Residents showed strong willingness to help primarily through segregation, composting, clean-up drives, and seminars though time and information limited seminar participation, supporting Madrigal's (2018) emphasis on education.

Most respondents were open to paying for better services, preferring small contributions under ₱50. FGDs stressed the need for affordable, transparent systems and raised concerns about fund management. Barangay Collection was the most trusted payment method, followed by direct and utility-based options. Aquino et al. (2013) highlighted the importance of LGU involvement, and while local government was the preferred provider, FGDs noted that inconsistent leadership affects program continuity. Stable governance remains key to effective waste management (Aquino & Atienza, 2014).

CONCLUSION

The study's localized approach reveals that while public awareness and willingness to act are high, financial limitations and concerns about transparency hinder broader participation. These findings indicated the importance of trust-building and affordability in waste management program. Local governments can use these insights to tailor programs that are both community-driven and policy-compliant. Future research may expand this model to other municipalities to validate and refine strategies for sustainable waste management.

AUTHORS' CONTRIBUTIONS

The conceptualization and methodological design of this study were jointly undertaken by Edna T. Mercado and Carmela Z. Reyes. Both authors were responsible for the acquisition of data via survey questionnaires and contributed equally to the initial drafting of the manuscript. Data analysis was conducted by Carmela Reyes.

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