

Assessing Community Awareness, Implementation, and Compliance to RA 9003 Towards Sustainable Waste Management Practices: The Case of San Pascual, Batangas

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ABSTRACT

This study examined the implementation of Republic Act No. 9003, focusing on the level of community awareness, extent of implementation, and level of compliance with solid waste management practices in the Municipality of San Pascual, Batangas. Anchored on the growing challenges of waste management despite existing legal frameworks, the research aimed to determine how awareness and implementation influence household compliance. A correlational research design was employed, involving 209 respondents composed of households and municipal officials. Data were gathered through a researcher-made questionnaire and analyzed using mean, Pearson's correlation, and multiple linear regression. Findings revealed that respondents demonstrated high awareness of practical waste management practices such as segregation and proper disposal, but had limited knowledge of RA 9003 as a legal framework. The implementation of the law was generally weak, particularly in terms of policy enforcement, institutional mechanisms, capacity and resources, and tracking systems. Community compliance was moderate, with consistent practices observed in segregation but inconsistencies in recycling and adherence to collection schedules. The study further found that awareness and implementation do not significantly predict compliance. Instead, compliance is largely influenced by external and logistical factors, particularly the reliability of waste collection services. The research concludes that effective solid waste management depends not only on knowledge and policy enforcement but also on consistent institutional support and service delivery. Based on these findings, the study proposes a community-based educational campaign and strategic recommendations to strengthen waste management practices, emphasizing improved collection systems and sustained public engagement.

Keywords: Solid Waste Management, RA 9003, Community Compliance, Environmental Awareness, Policy Implementation

INTRODUCTION

Solid waste management remains a critical environmental governance challenge in many developing countries, particularly in rapidly urbanizing communities where increasing population growth and consumption patterns generate substantial volumes of municipal waste. Effective waste management systems are essential for environmental protection, public health, and sustainable development, requiring coordinated efforts among government institutions, communities, and other stakeholders. In the Philippines, the enactment of Republic Act No. 9003, otherwise known as the Ecological Solid Waste Management Act of 2000, established a comprehensive framework for waste reduction, segregation, recycling, composting, and environmentally sound disposal. The law further decentralized implementation responsibilities by assigning local government units (LGUs) a central role in planning, enforcing, and monitoring solid waste management programs.

Despite the existence of this legislative framework for more than two decades, compliance with RA 9003 remains uneven across the country. Previous assessments have indicated that many LGUs continue to encounter challenges in fully implementing the provisions of the law, particularly in areas related to waste segregation, operation of materials recovery facilities, enforcement mechanisms, and community participation. Studies have identified multiple barriers to effective implementation, including inadequate technical capacity, insufficient financial resources, weak institutional coordination, limited public awareness, and inconsistent policy

enforcement. These constraints hinder the achievement of the law's objectives and contribute to persistent waste management problems at the local level.

The challenges associated with solid waste management are particularly evident in rapidly developing regions such as CALABARZON, where population growth and economic expansion have intensified pressure on local waste management systems. In Batangas Province, municipalities face increasing demands for efficient collection, segregation, recycling, and disposal services while balancing resource limitations and institutional capacities. Although some local governments have introduced initiatives to improve compliance with RA 9003, implementation outcomes vary considerably among communities, highlighting the need for context-specific assessments of local solid waste management practices.

San Pascual, Batangas represents a relevant case for examining these issues. The municipality has experienced continued population growth and increasing household numbers, resulting in a corresponding rise in waste generation. While local authorities have adopted measures aligned with RA 9003, several operational and institutional concerns remain evident. Variations in policy enforcement across barangays, limited waste service coverage, underutilized materials recovery facilities, and the absence of a fully operational sanitary landfill suggest gaps between policy requirements and actual implementation practices. Furthermore, limitations in waste monitoring and tracking systems constrain the ability of local authorities to assess compliance and evaluate the effectiveness of waste segregation and recycling initiatives.

These implementation challenges may also influence community compliance with prescribed waste management practices. Existing literature suggests that public participation in environmental programs is shaped not only by individual knowledge and awareness but also by the effectiveness of local governance systems, service delivery mechanisms, and institutional support. Consequently, understanding the relationship among policy implementation, public awareness, and community compliance is essential for identifying strategies that can strengthen local solid waste management outcomes. However, empirical studies examining these interrelated factors at the municipal level remain limited, particularly within the context of rapidly growing communities in Batangas Province. This gap highlights the need for localized evidence that can inform policy improvements and community-based interventions.

Addressing this gap, the present study investigates the implementation of RA 9003 in San Pascual, Batangas by examining key dimensions of implementation, including policy enforcement, institutional mechanisms, capacity and resource availability, and waste tracking systems. The study further assesses residents' awareness of the provisions of RA 9003 and evaluates their compliance with essential solid waste management practices such as waste segregation, recycling, proper disposal, and adherence to collection schedules. More importantly, it analyzes the relationships among implementation, awareness, and compliance to determine whether awareness and implementation levels significantly predict community compliance.

By providing empirical evidence on the factors influencing solid waste management compliance at the local level, this study contributes to the growing body of literature on environmental governance and public participation. The findings are expected to inform the development of evidence-based policy recommendations and community-based educational interventions aimed at strengthening solid waste management practices in San Pascual and similar municipalities. Ultimately, the study offers practical insights for local governments seeking to enhance the effectiveness of RA 9003 implementation and promote sustainable environmental behavior within their communities.

Objectives of the Study

This study aims to assess the implementation, awareness, and community compliance with sustainable waste management. More specifically, it seeks to: identify the respondents' level of awareness of the provisions of RA 9003; assess the extent of implementation of RA 9003 in terms of policy enforcement, institutional mechanisms, capacity and resources, and tracking; determine the respondents' perceived level of community compliance with RA 9003 relative to household waste segregation practices, recycling and recovery behavior, proper disposal, and collection schedules; examine whether there are significant relationships among the level of implementation of RA 9003, the level of awareness, and community compliance with the law; determine whether awareness and

implementation levels predict the level of compliance; and, lastly, propose community-based education campaigns for sustainable waste management practices.

MATERIALS AND METHOD

Research Design

The researchers used a correlational research design. Correlational research is a methodological approach that aims to identify and analyze the relationship between two or more variables without manipulation. It aims to comprehensively explain the basic concepts of correlational research, its objectives, characteristics, design types, and limitations (Hermina et al. 2025). To further analyze these relationships, linear regression was utilized to determine whether awareness and implementation significantly predict compliance and to measure their influence on compliance levels. By combining correlational and regression analyses, the study provided a comprehensive understanding of how awareness and implementation relate to and affect community compliance with RA 9003.

Respondents of the Study

The study involved 209 respondents from San Pascual, Batangas, comprising household residents, Municipal Environment and Natural Resources Office (MENRO) employees, and selected barangay officials. Household respondents were selected using a multi-stage sampling approach, which included Slovin's Formula for sample size determination, stratified random sampling for proportional representation across the 29 barangays, interval sampling for household selection, and the Kish Grid method for identifying eligible respondents within households. Meanwhile, MENRO employees and barangay officials were chosen through purposive sampling due to their direct involvement in solid waste management and the implementation of Republic Act No. 9003. The final sample consisted of 116 household respondents and 93 government personnel and officials.

Data Gathering Instrument

The study utilized a researcher-made survey questionnaire as the primary data-gathering instrument to assess the implementation of Republic Act No. 9003, community compliance with solid waste management practices, and environmental awareness among respondents in San Pascual, Batangas. The questionnaire included sections on policy enforcement, institutional mechanisms, capacity and resources, tracking systems, household compliance practices, and environmental awareness. Responses were measured using a four-point Likert scale. To ensure validity and clarity, the instrument underwent multiple reviews by the thesis adviser, was evaluated by experts from the College of Teacher Education of Batangas State University–TNEU Pablo Borbon Campus, and was pilot-tested through a dry run before its actual administration.

RESULTS AND DISCUSSION

This presents the result, the analysis and the interpretation of data gathered from the answers of two groups of respondents about the awareness, compliance and implementation of the provisions of RA 9003. The said data were presented in a tabular form in accordance with the specific statement of the problem.

1. Level of the awareness on the provisions of RA 9003

Indicators	WM	SD	VI
1. I know that there is a law on proper waste management (RA 9003).	1.85	1.14	Slightly Aware
2. I know that biodegradable and non-biodegradable waste should be separated.	3.95	0.22	Highly Aware
3. I know that burning of waste is prohibited under RA 9003.	3.88	0.51	Highly Aware
4. I know that there are penalties or fines for not following proper waste management.	3.83	0.64	Highly Aware
Composite Mean	3.38		Aware

Legend: Highly Aware - 3.50-4.00; Aware - 2.50-3.49; Slightly Aware - 1.50-2.49; Not at All - 1.00-1.49; WM - Weighted Mean; and VI - Verbal Interpretation; SD - Standard Deviation

The findings revealed that respondents were generally aware of the provisions of Republic Act No. 9003, as reflected in the composite mean of 3.38. The results indicate high awareness of key solid waste management practices, particularly waste segregation, which obtained the highest weighted mean of 3.95 and the lowest standard deviation of 0.22, suggesting a strong and consistent understanding among households. Awareness of the prohibition on waste burning and the existence of penalties for non-compliance was also high, with weighted means of 3.88 and 3.83, respectively. These findings suggest that respondents are familiar with the practical aspects of proper waste management and that such practices have become widely recognized and adopted within the community. The relatively low levels of variability in these indicators further indicate a shared understanding of environmentally responsible behaviors among households.

In contrast, awareness of RA 9003 as a national law was notably lower. The statement regarding knowledge of the existence of a law on proper waste management obtained the lowest weighted mean of 1.85 and the highest standard deviation of 1.14, indicating substantial differences in respondents' levels of awareness. This finding suggests that while households are knowledgeable about specific waste management practices, many remain unfamiliar with the legal framework that mandates these actions. The greater variability in responses reflects inconsistencies in the dissemination and understanding of the law itself. This finding is supported by the study of Verzosa et al. (2024), in which it was noted that residents of coastal communities often lacked familiarity with legal and regulatory frameworks, including RA 9003 and local ordinances, thereby limiting effective compliance.

The results demonstrate that respondents are more aware of the practices associated with proper waste management than the legislative basis underlying them. This highlights the need for enhanced information and education initiatives that not only promote proper waste management behaviors but also increase public understanding of the provisions and significance of RA 9003 to support long-term compliance and environmental stewardship.

2. Extent of the Implementation of RA 9003

Table 2. Extent of the Implementation of RA 9003 relative to Policy Enforcement

Indicators	Household			Officials		
	WM	SD	VI	WM	SD	VI
1. Ordinance or directive of our town regarding waste.	2.84	1.18	Moderately Implemented	2.92	1.13	Moderately Implemented
2. Contract between Greentech Inc. and the municipal government.	1.95	1.22	Slightly Implemented	1.90	1.21	Slightly Implemented
3. Penalty or fine for non-compliance with RA 9003.	1.91	1.28	Slightly Implemented	2.15	1.27	Slightly Implemented
Composite Mean	2.24		Slightly Implemented	2.33		Slightly Implemented

Legend: Fully Implemented - 3.50-4.00; **Moderately Implemented** - 2.50-3.49; **Slightly Implemented** - 1.50-2.49;

Not at All - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

The assessment of RA 9003 enforcement reveals that implementation is visible but weak, reflecting systemic gaps between policy design and household-level practice. Household responses yielded a composite mean of 2.24, while officials reported a slightly higher mean of 2.33, both indicating moderate enforcement. This divergence underscores that while ordinances exist, their tangible enforcement remains inconsistent. Officials tend to adopt a more optimistic view of enforcement, whereas households perceive limited impact in daily life, highlighting a gap between institutional intent and community experience.

Households rated ordinances at a weighted mean of 2.84 and standard deviation of 1.18, while officials provided a marginally higher mean of 2.92 and standard deviation of 1.13, both reflecting moderate enforcements. Perceptions of the Greentech contract were uniformly low, with households reporting a mean of 1.95 and standard deviation of 1.22 and officials with a mean of 1.90 and standard deviation of 1.21. High variability in responses suggests weak communication and transparency regarding public-private partnerships, undermining trust and accountability. Similarly, enforcement of penalties revealed the widest discrepancy: households rated sanctions at 1.91 and standard deviation of 1.28, while officials rated them at 2.15 and standard deviation of 1.27. These results indicate uneven and selective application of fines, with households skeptical of actual enforcement and officials more confident in its existence.

Both groups agree that RA 9003 enforcement is only partially implemented, though perspectives diverge. Households emphasize limited visibility and weak deterrence, while officials highlight policy presence but acknowledge resource constraints. The findings point to the need for stronger transparency, accountability, and community-centered enforcement mechanisms to bridge household skepticism and official optimism. This aligns with prior studies noting that enforcement is most effective in contexts with strong leadership, adequate resources, and active community engagement.

Table 3. Extent of the Implementation of RA 9003 relative to Institutional Mechanism

Indicators	WM	SD	VI
1. There is a designated committee or group in the barangay focused on waste management.	2.63	0.86	Moderately Implemented
2. The barangay collaborates with schools or organizations for proper waste management.	3.60	0.55	Fully Implemented
3. The municipality has a 10-year Solid Waste Management Plan.	3.44	0.95	Moderately Implemented
4. There is a program for recycling plastics, bottles, and paper.	3.29	0.68	Moderately Implemented
5. Training and awareness campaigns on RA 9003 are conducted under the leadership of MENRO officials.	2.17	0.76	Slightly Implemented
Composite Mean	3.03		Moderately Implemented

Legend: Fully Implemented - 3.50-4.00; Moderately Implemented - 2.50-3.49; Slightly Implemented- 1.50-2.49;

Not at All - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

The overall assessment of Republic Act 9003 implementation at the barangay level shows a moderate composite mean of 3.03, which implies that institutional mechanisms are present but not fully optimized. The highest indicator, collaboration with schools, NGOs, and community stakeholders, obtained a weighted mean of 3.60 with a low standard deviation of 0.55, signifying consistent practices across barangays. This result means that partnerships are the most reliable institutional mechanism, as they foster accountability, resource-sharing, and sustainability. The consistency of collaboration suggests that barangays rely heavily on external actors to strengthen waste management, which reflects the law's dependence on collective action rather than purely internal governance. Evidence from the LGU–Municipality of Gerona, Tarlac (2024) supports this, showing that MENRO-led IEC campaigns build community trust and translate awareness into ecological behavior. Thus, sustaining and institutionalizing these partnerships is crucial for systemic compliance and long-term effectiveness.

In contrast, capacity-building and public education registered the lowest weighted mean of 2.17 with a moderate standard deviation of 0.76, highlighting weak and inconsistent efforts in awareness campaigns and training programs. This result means that while some barangays conduct educational initiatives, many do not, leading to fragmented compliance and undermining the law's ability to instill long-term behavioral change. The variability indicates uneven prioritization of education, which weakens institutional accountability and risks reducing

compliance to sporadic rather than systemic action. Strengthening education campaigns through barangay assemblies, school symposiums, and multimedia platforms is therefore essential to standardize awareness and foster consistent behavioral change. Lacang et al. (2025) emphasize that sustained IEC programs are critical for long-term sustainability, reinforcing the need for institutionalized education.

The findings reveal that while collaborative networks are strong and consistent, the weak implementation of training and awareness activities exposes a structural imbalance that must be addressed to enhance public participation, improve compliance with RA 9003, and secure the long-term sustainability of solid waste management efforts.

Table 4. Extent of the Implementation of RA 9003 relative to Capacity and Resources

Indicators	Household			Officials		
	WM	SD	VI	WM	SD	VI
1. There are enough trash bins for biodegradable and non-biodegradable waste.	2.00	1.29	Slightly Implemented	2.49	1.28	Slightly Implemented
2. There are enough trucks or vehicles for garbage collection.	2.13	1.23	Slightly Implemented	1.80	1.17	Slightly Implemented
3. There are sufficient funds allocated for the waste program.	N/A	N/A	N/A	2.45	0.95	Slightly Implemented
4. Information is provided to residents about proper waste management.	3.44	1.03	Moderately Implemented	3.73	0.68	Fully Implemented
5. There is a designated MRF (Materials Recovery Facility) in the barangay used for waste segregation and processing.	3.67	0.89	Fully Implemented	3.83	0.64	Fully Implemented
Composite Mean	2.81		Moderately Implemented	2.86		Moderately Implemented

Legend: Fully Implemented - 3.50-4.00; **Moderately Implemented** - 2.50-3.49; **Slightly Implemented**- 1.50-2.49;

Not at All - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

The assessment of household and official responses underscores that while basic systems for waste management are present, their implementation remains unstable and insufficiently felt in daily practice. Households reported a composite mean of 2.81, while officials provided a slightly higher mean of 2.86, both reflecting limited capacity and resource availability. Divergences emerged across specific indicators: households perceived trash bins as present mean of 2.00 and standard deviation of 1.29, while officials rated adequacy at 2.49 and standard deviation of 1.28, both indicating weak infrastructure support. Waste collection vehicles were similarly rated low, with households reporting 2.13 and standard deviation of 1.23 and officials 1.80 and standard deviation of 1.17, reflecting logistical challenges and resource constraints. Fund allocation was assessed only by officials, yielding a mean of 2.45 and standard deviation of 0.95, underscoring inadequate financial support. These findings align with Vanguardia (2023) and Dela Cruz et al. (2023), who emphasized persistent gaps in manpower, equipment, and funding as barriers to effective implementation.

Despite these limitations, stronger ratings were observed in information dissemination and Materials Recovery Facilities (MRFs). Households rated information campaigns at 3.44 and standard deviation of 1.03, while officials rated them higher at 3.73 and standard deviation of 0.68, revealing a communication gap where officials perceive dissemination as fully implemented but households experience uneven reach. Both groups agreed on the presence of MRFs, with households rating 3.67 and standard deviation of 0.89 and officials 3.83 and standard deviation of 0.64, highlighting MRFs as a strong point in RA 9003 implementation. These results suggest that while infrastructure for segregation exists, weak funding, uneven resource distribution, and communication gaps

hinder full compliance. Strengthening infrastructure, ensuring consistent fund allocation, and bridging communication gaps are essential to elevate waste management from partial to full implementation. This resonates with Buenaflor (2024), who underscores the critical role of LGUs in fostering transparency, accountability, and responsiveness to sustain collaborative solid waste management practices.

Table 5. Extent of the Implementation of RA 9003 relative to Tracking

Indicators	WM	SD	VI
1. Listing how many households comply with waste segregation.	1.94	0.92	Slightly Implemented
2. Regular evaluation of the effectiveness of the waste program.	2.30	0.85	Slightly Implemented
3. Reports or information on the results of RA 9003 implementation.	2.43	0.87	Slightly Implemented
4. Monitoring the condition of the municipality's Sanitary Landfill.	1.61	0.87	Slightly Implemented
5. Reports from the barangay on the operation of the MRF (Materials Recovery Facility).	2.88	1.00	Moderately Implemented
Composite Mean	2.23		Slightly Implemented

Legend: Fully Implemented - 3.50-4.00; Moderately Implemented - 2.50-3.49; Slightly Implemented- 1.50-2.49;

Not at All - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

The overall assessment of Republic Act 9003 implementation relative to tracking yielded a composite mean of 2.23, which indicates that monitoring and reporting systems are present but not consistently enforced or systematically integrated into local governance. This weak performance suggests that accountability and evidence-based decision-making are undermined, as reliable tracking is essential for evaluating program success and identifying areas for improvement. The strongest indicator within tracking was the reporting on the operation of Materials Recovery Facilities (MRFs), which recorded a weighted mean of 2.88. However, the high standard deviation of 1.00 reveals wide variability, meaning that while some barangays consistently report, others rarely comply. This inconsistency reflects both promise and challenge: reporting mechanisms exist and are more applied than other tracking activities, but weak enforcement, inadequate coverage, and resource limitations restrict their effectiveness. As Andayal (2025) noted, MRF policies suffer from insufficient budget allocations and limited facility space, which weaken their role in supporting waste management tracking. These findings highlight that while MRF reporting shows potential, it remains uneven and requires institutional strengthening to become a reliable governance tool.

On the other hand, the weakest indicator was the monitoring of household compliance with waste segregation, which obtained a weighted mean of 1.94 and a relatively high standard deviation of 0.92. This result reveals a critical weakness, as segregation at source is the cornerstone of RA 9003. The variability suggests that while some households comply, many do not, reflecting inconsistent enforcement and a lack of reliable data for policymakers to measure progress. Similarly, landfill monitoring scored very low at 1.61, with uneven practices that pose risks to environmental safety and public health. These weaknesses demonstrate systemic gaps in enforcement and resource allocation, undermining the law's capacity to foster accountability and sustainability. Supporting literature from Vanguardia (2023), DENR (2020), and Sowers (2021) emphasizes that weak monitoring mechanisms hinder intended outcomes and that poorly monitored landfills deteriorate chemically and biologically, producing hazards that compromise both infrastructure and ecological stability.

Overall, the results show that the highest variability lies in MRF reporting, while the lowest variability is found in program evaluation. This contrast indicates localized disparities and systemic gaps, underscoring the urgent need to institutionalize tracking mechanisms. By strengthening monitoring, reporting, and evaluation systems,

local governments can transform tracking into a proactive governance tool that fosters accountability, supports evidence-based decision-making, and ensures long-term environmental sustainability.

3. Level of the Community Compliance with RA 9003

Table 6. Level of Community Compliance with RA 9003 relative to Household Waste Segregation Practices

Indicators	WM	SD	VI
1. Separating household waste (Biodegradable, Recyclable, and Residual).	3.23	1.24	Compliant
2. Proper disposal of hazardous or special waste (e.g., batteries, medicines).	3.16	1.26	Compliant
3. Following the belief that waste segregation is important for cleanliness.	3.94	0.30	Highly Compliant
4. Other neighbors also practice waste segregation.	2.93	1.23	Compliant
Composite Mean	3.31		Compliant

Legend: Highly Compliant - 3.50-4.00; **Compliant** - 2.50-3.49; **Rarely Compliant** - 1.50-2.49; **Not at All** - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation

The findings indicate that households in San Pascual, Batangas generally comply with the waste segregation provisions of Republic Act No. 9003, as reflected in the composite mean of 3.31. Among the indicators, the belief that waste segregation is important for cleanliness obtained the highest weighted mean of 3.94 and the lowest standard deviation of 0.30, demonstrating a strong and highly consistent recognition of the importance of waste segregation among respondents. Households also reported compliance in separating biodegradable, recyclable, and residual waste, which obtained a weighted mean of 3.23 and a standard deviation of 1.24, indicating that while the practice is generally observed, the level of implementation varies across households. These findings suggest that residents possess positive attitudes toward proper waste management and recognize the environmental value of waste segregation, reflecting the community's overall commitment to the objectives of RA 9003.

However, the results also reveal notable inconsistencies in actual waste segregation practices. Proper disposal of hazardous or special waste obtained a weighted mean of 3.16 and a standard deviation of 1.26, indicating compliance but also highlighting considerable variation in household practices. Likewise, the perception that other neighbors practice waste segregation recorded the lowest weighted mean of 2.93 with a standard deviation of 1.23, suggesting differing observations regarding community-wide participation. The relatively high standard deviations for these indicators imply that compliance is not uniformly practiced throughout the community.

In general, while households demonstrate awareness and generally comply with waste segregation requirements, the findings suggest that positive attitudes do not always translate into consistent behavior. This finding is supported by Bistayan et al. (2025), who found that high awareness among residents leads to increased willingness to practice waste segregation, although lack of awareness and other barriers still limit consistent compliance. Strengthening waste management facilities, improving access to proper disposal systems, and enhancing community-based information and education campaigns may help promote more uniform compliance with the provisions of RA 9003.

Table 7. Level of Community Compliance with RA 9003 relative to Recycling and Recovery Behavior

Indicators	WM	SD	VI
1. Recycling and reusing bottles, plastics, and paper.	2.24	1.40	Rarely Compliant
2. Our community's compliance with recycling waste.	2.20	1.35	Rarely Compliant
3. Following the belief that recycling helps the environment.	3.85	0.64	Highly Compliant

4. Compliance with selling bottles, plastics, and other items that can be sold to junkshops.	3.20	1.31	Compliant
Composite Mean	2.87		Compliant

Legend: Highly Compliant - 3.50-4.00; **Compliant** - 2.50-3.49; **Rarely Compliant** - 1.50-2.49; **Not at All** - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

The overall assessment of community compliance with recycling and recovery behavior yielded a composite mean of 2.87, indicating moderate adherence to RA 9003 provisions.

While respondents strongly recognize the environmental importance of recycling, actual practices remain inconsistent and are often shaped more by economic incentives than environmental responsibility. Indicators such as recycling and reusing bottles, plastics, and paper, mean 2.24 and standard deviation of 1.40 and community compliance with recycling waste with a mean of 2.20 and standard deviation of 1.35 reflect weak engagement, with high variability suggesting uneven participation across households. These findings align with Vanguardia (2023) and Yazawa et al. (2025), who noted that weak enforcement, absence of penalties, and outdated barangay-level systems hinder consistent recycling behavior. In contrast, belief in recycling's environmental benefits scored a high mean of 3.85 and standard deviation of 0.64, demonstrating strong consensus and uniformity in awareness, though this belief does not consistently translate into daily recycling practices.

Economic incentives emerged as a key motivator, with selling recyclables to junkshops rated moderately high mean of 3.20 and standard deviation of 1.31, though variability indicates uneven household participation. Studies by Dela Cruz et al. (2023) and Balaria et al. (2021) confirm that financial returns drive compliance more than environmental responsibility, highlighting the role of junkshops in sustaining recycling behavior. Taken together, the findings reveal a community with strong environmental consciousness but limited translation into consistent recycling practices, as also noted by Carmen (2026). High variability in compliance scores underscores uneven enforcement and resource support, while uniformity in belief reflects shared awareness. This imbalance points to the need for stronger institutional mechanisms, sustained educational campaigns, and stricter enforcement to bridge the gap between knowledge and practice, ensuring that recycling is motivated not only by economic gain but also by environmental responsibility.

Table 8. Level of the Community Compliance with RA 9003 relative to Proper Disposal

Indicators	WM	SD	VI
1. Compliance on throwing garbage in the proper trash bin.	3.78	0.64	Highly Compliant
2. Compliance with the belief that proper waste disposal prevents disease.	3.99	0.09	Highly Compliant
3. Compliance of neighbors on disposing their waste in the proper place.	3.58	0.86	Highly Compliant
4. Compliance on following the prohibition against open burning.	2.41	1.36	Rarely Compliant
Composite Mean	3.44		Compliant

Legend: Fully Implemented - 3.50-4.00; **Moderately Implemented** - 2.50-3.49; **Slightly Implemented**- 1.50-2.49;

Not at All - 1.00-1.49; **WM** - Weighted Mean; and **VI** - Verbal Interpretation; **SD** - Standard Deviation

As shown in Table 8, the composite mean of 3.44 indicates that households generally comply with the provisions of RA 9003 on proper waste disposal, reflecting an acceptable level of adherence to recommended practices. This suggests that the community demonstrates awareness and willingness to follow waste management guidelines, contributing to the attainment of proper disposal within the locality. The highest weighted mean was observed in the belief that proper waste disposal prevents disease, with a score of 3.99 and a very low standard deviation of 0.09. This near-unanimous response highlights strong awareness and discipline among households, showing that residents recognize the direct link between waste management and public health. Such consistency

suggests that health concerns are a powerful motivator for compliance, reinforcing RA 9003's emphasis on participatory governance and community responsibility. Chaudhary et al. (2025) supports this interpretation, noting that effective waste management is fundamental to preventing disease outbreaks and maintaining sanitation, while also cultivating discipline in everyday practices.

In contrast, the lowest weighted mean was recorded in compliance with the prohibition against open burning, which scored 2.41 with a very high standard deviation of 1.36. This result reveals weak adherence and significant variability, indicating that while some households avoid burning, many continue the practice, often due to convenience or limited waste collection services. The inconsistency reflects localized disparities and underscores the challenge of enforcing this regulation. Saplala-Yaptengco (2015) observed that open burning remains widespread because it is perceived as the most immediate solution for waste disposal, despite its environmental and health risks. This finding suggests that while households understand and practice basic disposal methods, deeper behavioral change and stricter enforcement are needed for practices that directly impact environmental sustainability.

The results show that households are highly consistent in their health-driven beliefs about proper disposal, but enforcement gaps in prohibiting open burning weaken the sustainability of waste management efforts, pointing to the need for stronger education campaigns, provision of alternatives, and stricter monitoring to achieve systemic compliance.

Table 9. Level of Community Compliance with RA 9003 relative to Collection Schedule

Indicators	WM	SD	VI
1. Compliance with the schedule of waste collection by the local government unit.	1.78	1.16	Rarely Compliant
2. The garbage truck or waste collector follows the regular schedule of waste collection.	1.73	1.19	Rarely Compliant
3. Compliance with promptly informing residents about the changes in the collection schedule.	1.85	1.23	Rarely Compliant
4. Compliance with the belief that following the schedule is important for the cleanliness of the town.	3.90	0.28	Highly Compliant
Composite Mean	2.32		Rarely Compliant

Legend: Highly Compliant - 3.50-4.00; Compliant - 2.50-3.49; Rarely Compliant - 1.50-2.49; Not at All - 1.00-1.49; WM - Weighted Mean; and VI - Verbal Interpretation

The findings indicate that community compliance with the waste collection schedule provisions of Republic Act No. 9003 is generally low, as reflected in the composite mean of 2.32. The results suggest that the implementation of scheduled waste collection services remains inconsistent, affecting the reliability and effectiveness of solid waste management within the municipality. Indicators related to compliance with the local government unit's collection schedule, adherence of garbage trucks to regular collection schedules, and prompt communication of schedule changes all obtained low weighted means of 1.78, 1.73, and 1.85, respectively, with standard deviations ranging from 1.16 to 1.23. These findings indicate that residents seldom observe regular and dependable waste collection services and experience varying levels of service delivery. The relatively high standard deviations further suggest inconsistencies in respondents' experiences, reflecting uneven implementation across different areas of the municipality.

In contrast, respondents demonstrated a strong and consistent belief in the importance of following waste collection schedules for maintaining community cleanliness, as evidenced by the highest weighted mean of 3.90 and the lowest standard deviation of 0.28. This finding highlights a substantial gap between residents' positive attitudes toward proper waste management and the actual implementation of collection services. While the community recognizes the significance of adhering to waste collection schedules, operational challenges and ineffective communication mechanisms appear to hinder compliance in practice. According to Jacaulan (2023), if daily solid waste collection is inconsistently practiced and implemented, it may lead to delays, irregular service, and public dissatisfaction, which affect overall waste management effectiveness.

The results suggest that improving the efficiency of waste collection operations, ensuring adherence to established schedules, and strengthening communication between the local government unit and residents are essential measures for enhancing community compliance and supporting the effective implementation of RA 9003.

4. Relationships among the Level of Implementation of RA 9003 and the Level of Awareness and Community Compliance with the Law

Table 10. Relationship between the Extent of Implementation of RA 9003 and the Level of Awareness

Variable	P-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Policy Enforcement	.556	.062	Very Weak Positive Relationship	Failed to Reject	Not Significant
Institutional Mechanisms	.821	-.024	Very Weak Negative Relationship	Failed to Reject	Not Significant
Capacity and Resources	.318	.105	Weak Positive Relationship	Failed to Reject	Not Significant
Tracking	.323	.104	Weak Positive Relationship	Failed to Reject	Not Significant

Legend: Coefficient of correlation (r): ± 1.0 (Perfect relationship), $+.76$ to $.99$ (Very Strong relationship), $+.51$ to $.75$ (Strong relationship), $+.26$ -. $.50$ (Moderate Relationship), $+.11$ to $.25$ (Weak relationship), $+.01$ to $.10$ (Very weak relationship), $.00$ (No relationship)

The correlation analysis revealed that the extent of implementation of Republic Act No. 9003 was not significantly associated with the level of household awareness in San Pascual, Batangas. All computed correlation coefficients indicated very weak to weak relationships and were found to be statistically insignificant, with p-values greater than .05. Policy enforcement exhibited a very weak positive correlation of .062 with household awareness, while institutional mechanisms showed a very weak negative correlation of $-.024$. Capacity and resources, as well as tracking mechanisms, demonstrated weak positive correlations of .105 and .104, respectively. These findings suggest that the administrative and structural dimensions of RA 9003 implementation have little influence on the level of awareness among households. The results further imply that awareness is more effectively developed through continuous information dissemination, educational campaigns, and community engagement activities rather than through implementation measures alone.

Similarly, the analysis of the relationship between policy enforcement and household compliance behaviors revealed no statistically significant associations across the major dimensions of solid waste management. Household waste segregation practices exhibited a very weak negative correlation of $-.049$, while recycling and recovery behavior showed a very weak positive correlation of .060. Proper disposal practices likewise demonstrated a very weak negative correlation of $-.014$. The consistently weak and insignificant relationships indicate that policy enforcement alone does not substantially influence household compliance with waste segregation, recycling, recovery, or disposal practices.

These findings suggest that while enforcement remains an important component of waste management, its effectiveness may be limited without complementary strategies such as public education, community participation, and sustained awareness programs. Guerrero et al. (2017) emphasized that institutional frameworks alone are insufficient to improve public awareness and must be reinforced with active community engagement and effective communication strategies to produce measurable impacts. Strengthening these community-based approaches may therefore be more effective in promoting both awareness and long-term compliance with the provisions of RA 9003.

Table 11. Relationship among the Extent of Implementation of RA 9003 (Policy Enforcement) and the Community Compliance with the Law

Variable	p-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Household Waste Segregation Practices	.641	-.049	Very Weak Negative Relationship	Failed to Reject	Not Significant
Recycling and Recovery Behavior	.567	.060	Very Weak Positive Relationship	Failed to Reject	Not Significant
Proper Disposal	.894	-.014	Very Weak Negative Relationship	Failed to Reject	Not Significant
Collection Schedule	.000	.692	Strong Positive Relationship	Reject	Significant

Legend: Coefficient of correlation (r): ± 1.0 (Perfect relationship), $+.76$ to $.99$ (Very Strong relationship), $+.51$ to $.75$ (Strong relationship), $+.26$ to $.50$ (Moderate Relationship), $+.11$ to $.25$ (Weak relationship), $+.01$ to $.10$ (Very weak relationship), $.00$ (No relationship)

The correlation analysis between policy enforcement and household compliance behaviors in solid waste management revealed that most enforcement mechanisms under RA 9003 do not significantly influence community practices.

Waste segregation with r-values of $-.049$, recycling and recovery with r-values of $.060$, and proper disposal with r-values of $-.014$ all showed very weak, non-significant relationships with enforcement, indicating that ordinances, fines, and monitoring systems have little measurable impact on household compliance. These results align with Vanguardia (2023) and Cubebe-Cawayan et al. (2021), who emphasized that weak enforcement, limited incentives, and inconsistent application of penalties hinder effective segregation, recycling, and disposal practices.

The findings confirm the null hypothesis, showing that institutional mechanisms alone do not drive compliance, and highlight the need for stronger community education campaigns and adequate infrastructure to support household-level waste management, as noted by Sunico and Santos (2020).

In contrast, collection schedules emerged as a critical determinant of compliance. The analysis demonstrated a strong positive and statistically significant relationship between policy enforcement of collection schedules and household compliance with r-values of $.692$, leading to the rejection of the null hypothesis. This underscores that operational efficiency and consistency in collection systems are central to effective enforcement, as households are more likely to comply when schedules are predictable and enforced. Vanguardia (2023) and the Environmental Management Bureau similarly emphasized that systematic collection schedules reduce illegal dumping and strengthen household participation.

Overall, the findings highlight that while most enforcement mechanisms under RA 9003 fail to significantly influence compliance, the regulation and strict implementation of collection schedules serve as a cornerstone of effective policy enforcement, bridging the gap between institutional mechanisms and household adherence to solid waste management practices.

Table 12. Relationship among the Level of Implementation of RA 9003 (Institutional Mechanisms) and the Community Compliance with the Law

Variable	p-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Household Waste Segregation Practices	.860	.018	Very Weak Positive Relationship	Failed to Reject	Not Significant
Recycling and Recovery Behavior	.435	.082	Very Weak Positive Relationship	Failed to Reject	Not Significant
Proper Disposal	.537	.065	Very Weak Positive Relationship	Failed to Reject	Not Significant
Collection Schedule	.000	.484	Moderate Positive Relationship	Reject	Significant

Legend: Coefficient of correlation (r): ± 1.0 (Perfect relationship), $+.76$ to $.99$ (Very Strong relationship), $+.51$ to $.75$ (Strong relationship), $+.26$ -. $.50$ (Moderate Relationship), $+.11$ to $.25$ (Weak relationship), $+.01$ to $.10$ (Very weak relationship), $.00$ (No relationship)

The data reveal that the overall implementation of RA 9003’s institutional mechanisms does not significantly influence community compliance, except in the aspect of adherence to the collection schedule. Household waste segregation practices, with a computed r-value of .018, show no significant relationship with compliance, meaning that individual segregation efforts are insufficient without institutional reinforcement. This highlights the need for stronger community education campaigns and provision of accessible segregation bins that are consistently monitored. Sunico and Santos (2020) support this, emphasizing that institutional clarity and education are key drivers of improved segregation practices.

Similarly, recycling and recovery behavior, with an r-value of .082, demonstrates a very weak positive relationship, reflecting the institutional gap caused by weak monitoring and operation of Materials Recovery Facilities (MRFs). This suggests the need for accessible, well-monitored recycling hubs and intensified information campaigns to encourage household recycling.

Acanto et al. (2023) reinforce this by showing that community-based programs can reduce waste generation and strengthen recycling practices. Proper disposal practices also show a very weak positive relationship 0.065, indicating that convenience rather than compliance drives behavior. Rosales (2021) emphasized that stricter enforcement, technical support, and education campaigns are necessary to institutionalize accountability in disposal practices.

Conversely, adherence to collection schedules emerged as the only significant driver of compliance, with a computed r-value of 0.484, underscoring the importance of reliable and organized collection systems in shaping household behavior. This finding suggests that households are more likely to comply when waste collection is predictable and equitable across barangays. Neto et al. (2024) support this, reporting that well-funded and consistent collection systems substantially improve compliance and participation in waste management programs.

The results highlight that household practices such as segregation, recycling, and disposal do not significantly influence compliance unless reinforced by institutional mechanisms. Only the collection schedule demonstrates a meaningful impact, pointing to the critical role of municipalities in ensuring reliable service delivery. Policy

recommendations therefore focus on strengthening governance, coordination, and enforcement through structured management systems and collaborative stakeholder engagement. Santos and Villanueva (2019) further emphasize the vital role of local officials in enforcing collection schedules, particularly for segregated waste, reinforcing the institutional dimension of compliance with RA 9003. These findings collectively underscore that institutional reliability, especially in collection services, is the backbone of sustainable compliance.

Table 13. Relationship among the Level of Implementation of RA 9003 (Capacity and Resources) and the Community Compliance with the Law

Variable	p-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Household Waste Segregation Practices	.230	-.126	Weak Negative Relationship	Failed to Reject	Not Significant
Recycling and Recovery Behavior	.863	-.018	Very Weak Negative Relationship	Failed to Reject	Not Significant
Proper Disposal	.041	-.213	Weak Negative Relationship	Reject	Significant
Collection Schedule	.000	.746	Strong Positive Relationship	Reject	Significant

Legend: Coefficient of correlation (r): ± 1.0 (Perfect relationship), $+.76$ to $.99$ (Very Strong relationship), $+.51$ to $.75$ (Strong relationship), $+.26$ -. $.50$ (Moderate Relationship), $+.11$ to $.25$ (Weak relationship), $+.01$ to $.10$ (Very weak relationship), $.00$ (No relationship)

The correlation analysis on household waste management practices shows that waste segregation and recycling behaviors both exhibit weak and non-significant relationships with the implementation of RA 9003 in terms of capacity and resources. Specifically, household waste segregation obtained an r-value of .126, indicating a weak negative and non-significant relationship, while recycling and recovery behavior yielded an r-value of .018, also reflecting a very weak negative and non-significant association.

These findings suggest that the availability of facilities, infrastructure, and resources alone does not substantially influence household compliance in segregation and recycling practices. Consistent with the studies of Galang 2025 and Mugerwa et al. 2025, this implies that behavioral compliance is more strongly shaped by sustained monitoring, community engagement, and the presence of incentives or enforcement mechanisms rather than resource provision alone.

In contrast, proper disposal practices showed a weak but statistically significant negative relationship with an r-value of .213, leading to the rejection of the null hypothesis, while collection schedules demonstrated a strong positive and statistically significant relationship with an r-value of .746, also resulting in the rejection of the null hypothesis. These results indicate that implementation efforts related to capacity and resources have a meaningful influence on compliance, particularly in structured and system-driven activities such as waste collection scheduling. However, the negative direction observed in proper disposal may reflect inconsistencies in resource utilization and local implementation practices.

This finding aligns with the study of Buenaflor (2024), which observed that although local government units allocate resources for waste disposal systems, gaps in supervision, monitoring, and community discipline may still hinder full compliance among residents. Thus, the findings suggest that operational components of RA 9003, particularly collection systems, are strongly supported by government capacity, whereas behavioral aspects such as segregation and recycling require intensified education campaigns, stricter enforcement, and stronger community motivation to achieve sustained compliance in San Pascual, Batangas.

Table 14. Relationship among the Level of Implementation of RA 9003 (Tracking) and the Community Compliance with the law

Variable	p-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Household Waste Segregation Practices	.778	.030	Very Weak Positive Relationship	Failed to Reject	Not Significant
Recycling and Recovery Behavior	.149	.151	Weak Positive Relationship	Failed to Reject	Not Significant
Proper Disposal	.121	-.162	Weak Negative Relationship	Failed to Reject	Not Significant
Collection Schedule	.000	.720	Strong Positive Relationship	Reject	Significant

Legend: Coefficient of correlation (r): ± 1.0 (Perfect relationship), $+.76$ to $.99$ (Very Strong relationship), $+.51$ to $.75$ (Strong relationship), $+.26$ -. $.50$ (Moderate Relationship), $+.11$ to $.25$ (Weak relationship), $+.01$ to $.10$ (Very weak relationship), $.00$ (No relationship)

The correlation analysis revealed that tracking mechanisms under RA 9003 do not significantly influence household compliance behaviors in waste segregation, recycling, recovery, or disposal. Waste segregation with r-values of .030, recycling and recovery with r-values of .151, and proper disposal with r-values of $-.162$ all showed weak, non-significant relationships, confirming the null hypothesis. These findings suggest that tracking systems, while present, fail to directly shape household practices, largely due to weak enforcement, limited incentives, and gaps in infrastructure. Vanguardia (2023) and Dela Cruz et al. (2023) similarly noted that ordinances lacked proper enforcement and that Material Recovery Facilities (MRFs) were often absent or non-functional, limiting recycling outcomes. Collectively, the results highlight that tracking alone does not drive compliance, underscoring the need for stronger institutional support and community education to improve segregation and recycling practices.

In contrast, collection schedules emerged as a critical determinant of compliance. The analysis demonstrated a strong positive and statistically significant relationship between tracking of collection schedules and household compliance with r-values of .720, leading to the rejection of the null hypothesis. This finding confirms that consistent and enforced collection schedules substantially influence household participation in solid waste management, reducing illegal dumping and strengthening adherence to RA 9003 provisions. The Environmental Management Bureau emphasizes that systematic collection schedules are mandated to ensure compliance, and the results of this study affirm their central role in effective enforcement. Overall, while most tracking mechanisms fail to significantly affect compliance, the regulation and strict implementation of collection schedules stand out as a cornerstone of operational efficiency, institutional accountability, and community adherence to sustainable waste management practices.

Table 15. Relationship among the Level of Community Compliance with the Law and the Level of Awareness

Variable	p-values	Computed R-values	Interpretation	Decision	Verbal Interpretation
Household Waste Segregation Practices	.001	.311	Moderate Positive Relationship	Reject	Significant

Recycling and Recovery Behavior	.527	.059	Very Weak Positive Relationship	Failed to Reject	Not Significant
Proper Disposal	.067	.170	Weak Positive Relationship	Failed to Reject	Not Significant
Collection Schedule	.432	.082	Very Weak Positive Relationship	Failed to Reject	Not Significant

Legend: Coefficient of correlation (r): **± 1.0** (Perfect relationship), **$+.76$ to $.99$** (Very Strong relationship), **$+.51$ to $.75$** (Strong relationship), **$+.26$ to $.50$** (Moderate Relationship), **$+.11$ to $.25$** (Weak relationship), **$+.01$ to $.10$** (Very weak relationship), **$.00$** (No relationship)

The data revealed that household waste segregation practices exhibit the only significant relationship with awareness, with a computed R-value of 0.311. This moderate positive correlation indicates that communities with higher levels of awareness are more likely to practice proper segregation, underscoring the role of knowledge and responsibility in shaping behavior. It suggests that awareness campaigns and educational interventions are effective tools for influencing compliance in this area. Bistayan et al. (2025) support this finding, noting that residents of Tuguegarao City demonstrated high awareness and compliance in segregation, with effective information dissemination and social influence reinforcing sustainable practices. This highlights segregation as the most responsive household activity to awareness, making it a fundamental component in improving adherence to RA 9003.

In contrast, recycling and recovery behavior, with a computed R-value of 0.059, proper disposal registering a computed R-value of 0.170, and collection schedules demonstrating a computed R-value of 0.082, all show weak or no significant relationship with awareness. These results indicate that awareness alone does not drive compliance in practices that depend on external systems, enforcement, or convenience. Recycling requires accessible and well-monitored hubs, as Buenaflor (2024) emphasized the role of LGUs in fostering trust and collaboration through governance principles. Proper disposal depends on enforcement and facility availability, as Wananwan (2021) found that strong institutional support and coordination increase compliance. Collection schedules rely on reliable service delivery, with Neto et al. (2024) reporting that consistent and well-funded collection systems substantially improve participation.

The findings highlight that while awareness strongly influences segregation, other practices require structural interventions, stricter enforcement, and reliable institutional mechanisms. Bermudo et al. (2023) reinforce this conclusion, arguing that segregation outcomes improve when reinforced by barangay enforcement, education campaigns, incentives, and optimized MRF operations. Thus, strengthening segregation practices through awareness campaigns provides the most effective foundation for compliance, while recycling, disposal, and collection demand targeted institutional support to achieve sustainable waste management.

5. Multiple Linear Regression Analysis on Awareness, Implementation, and Community Compliance

Table 16. Multiple Linear Regression Analysis on Awareness, Implementation and Community Compliance

Predictor Variables	<i>B</i>	Std. Error	β	<i>t</i>	<i>p</i> -value
(Constant)	3.694	.162		22.772	.000
Level of Awareness	-.022	.032	-.068	-.698	.487
Extent of Implementation	.023	.041	.056	.571	.569
Model Summary					

R	.099				
R^2	.010				
$F(2,112)$	.558				
p -value (Model)	.574				

The overall regression model yielded an F -value of 0.558 with a significance value (p -value) of .574. Since the p -value is greater than the 0.05 level of significance, the model is not statistically significant. Furthermore, the R Square (R^2) value of .010 indicates that only 1.0% of the variance in community compliance is explained by the combined influence of awareness and implementation. This implies that 99% of the factors influencing compliance are attributed to other variables not included in this model.

In terms of the individual predictors, neither variable emerged as a significant determinant of compliance. The level of awareness obtained a p -value of .487, while the extent of implementation obtained a p -value of .569. Both values exceed the 0.05 threshold, indicating that the respondents' knowledge of the law and their perception of its implementation do not significantly forecast their compliance behavior.

Consequently, the null hypothesis is accepted. This means that compliance with RA 9003 in the community is not primarily driven by educational awareness or policy enforcement mechanisms. The finding suggests that compliance is possibly influenced by other external or logistical factors, such as established household routines, social pressure, or the reliability of collection schedules, rather than their theoretical understanding of the law or the strictness of its implementation. This is supported by Carmen (2026), who found that awareness of RA 9003 had a weak correlation with actual compliance, while household routines and daily practices were stronger predictors of compliance.

CONCLUSIONS

Based on the findings, the following conclusions were drawn: (1) Respondents' awareness of RA 9003 is anchored in everyday waste management practices rather than in conscious recognition of the law itself. Compliance is sustained by community norms and habits, making awareness functional but incomplete and accountability short-term; (2) While collaborative governance structures exist, implementation remains fragile due to the absence of sustainable institutional mechanisms and systemic tracking, undermining long-term effectiveness; (3) Household compliance is contingent upon dependable collection schedules and accessible facilities. Lapses occur when enforcement is weak or resources are lacking, highlighting the role of institutional trust and logistical consistency; (4) Two factors consistently demonstrate strong positive influence: (a) community education campaigns that reinforce segregation practices, and (b) reliable collection schedules that sustain compliance across recycling, disposal, and tracking systems; (5) Awareness and implementation levels do not primarily predict compliance. Instead, compliance is shaped by everyday practices and the consistency of support systems that enable households to act on the law; (6) To address these gaps, a community-based education campaign and a research-based extension program are proposed, alongside a position paper for the Municipality of San Pascual. These initiatives prioritize collection schedules and service reliability as the foundation for sustainable RA 9003 compliance.

RECOMMENDATIONS

In light of the findings and conclusions, the following recommendations are hereby formulated: (1) Conduct sustained IEC programs led by MENRO and barangay officials, and integrate RA 9003 awareness into school curricula and community activities to ensure broader understanding of the law; (2) Establish transparent mechanisms for monitoring penalties and fines, ensure consistent enforcement, and encourage community participation through barangay-level monitoring teams; (3) Revitalize barangay waste management committees with clear roles and visibility, and strengthen partnerships with schools, NGOs, and private organizations to sustain collaborative initiatives; (4) Allocate sufficient funds for collection trucks, bins, and landfill maintenance, while investing in training programs for barangay officials and residents to build technical and managerial capacity; (5) Develop standardized tracking systems for monitoring waste management cycles and barangay reporting. Expand collection routes, enforce predictable schedules, and secure separate handling of segregated

waste to sustain compliance and prevent illegal dumping; (6) Examine external and logistical factors influencing compliance, such as household routines, social pressures, and the reliability of collection schedules, to broaden the evidence base for sustainable waste management. Replicate the study to other municipalities for comparability.

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