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Public Awareness and Compliance on the Provisions of Republic Act 9003 among Communities in Pikit, North Cotabato

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ABSTRACT

This study focused on the awareness and compliance of the residents of selected communities in Pikit, North Cotabato, to the provisions of Republic Act No. 9003, Ecological Solid Waste Management Act of 2000. A quantitative descriptive-correlational research design was used, which involved 392 respondents from the three barangays of Poblacion, Inug-Ug and Gli-Gli using proportional stratified random sampling. An adapted and locally modified structured questionnaire was used to collect data on awareness and compliance with waste segregation, reduce-reuse-recycle and proper waste disposal practices. Means, standard deviations, and Pearson's product-moment correlation coefficient were used to analyze the data. The respondents showed a Very High awareness of RA 9003 ($M = 4.70$, $SD = 0.494$) and compliance with its provisions ($M = 4.67$, $SD = 0.531$). The highest awareness domain mean was obtained for segregation/separation ($M = 4.74$), and the lowest was for disposal ($M = 4.67$). For compliance, segregation/separation and reduce-reuse-recycle practices both obtained category means of 4.69, while disposal obtained the comparatively lowest mean of 4.63. A statistically significant but weak positive relationship was found between awareness and compliance ($r = .296$, $p < .001$). The findings indicate that residents who reported greater awareness also tended to report greater compliance, although the relatively weak association suggests that awareness alone does not account for differences in waste-management behavior. The study highlights the importance of combining continuing environmental education with accessible waste-management services, appropriate infrastructure, community participation, and consistent implementation of ecological solid-waste-management policies.

INTRODUCTION

Solid waste management remains a substantial environmental, public-health, and governance concern. The Global Waste Management Outlook 2024 estimates that global municipal solid waste generation could increase from approximately 2.1 billion tonnes in 2023 to 3.8 billion tonnes by 2050, emphasizing the need for waste prevention, resource recovery, recycling, and circular-economy approaches (United Nations Environment Programme & International Solid Waste Association, 2024).

In the Philippines, Republic Act No. 9003, or the Ecological Solid Waste Management Act of 2000, established the national framework for systematic and ecological solid waste management. The law emphasizes waste avoidance and reduction, segregation at source, reuse, recycling, composting, proper collection and disposal, public participation, and the primary responsibility of local government units for solid waste management (Republic of the Philippines, 2001). The framework was further strengthened through Republic Act No. 11898, or the Extended Producer Responsibility Act of 2022, which amended RA 9003 by incorporating extended producer responsibility, resource recovery, recycling, circular-economy principles, and additional mechanisms for reducing plastic packaging waste (Republic of the Philippines, 2022). Against this background, the study assessed public

awareness of and compliance with the provisions of Republic Act No. 9003 among residents of Barangays Poblacion, Inug-Ug, and Gli-Gli in Pikit, North Cotabato. Awareness was examined in terms of waste segregation, reduce-reuse-recycle practices, and waste disposal, while compliance was examined through actual segregation practices, participation in 3R-related practices, and proper household-waste disposal. The study also determined whether a statistically significant relationship existed between awareness and compliance.

LITERATURE REVIEW

The existence of a legal framework, however, does not necessarily guarantee consistent implementation at the community level. Camarillo and Bellotindos (2021) documented continuing gaps in segregation, composting, recycling, public information, enforcement, and waste-management facilities in Philippine barangays, indicating that implementation depends on both community participation and functional local systems. This local-governance dimension is also evident in Cotabato. In a qualitative study involving ten residents, Osumo *et al.* (2025) identified access to information, collaboration, cooperation, and communication as conditions that supported engagement with local-government

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programmes and policies. Conversely, inadequate communication, time and financial constraints, lack of interest, and political partisanship hindered participation. Although their study did not specifically examine solid-waste management, it provides relevant local evidence that community-based policy implementation depends not only on formal rules but also on how local authorities communicate, involve residents, and create practical conditions for participation. Similarly, Fadhillah *et al.* (2022) found that household waste-management practices were influenced by residents' perceptions, demographic conditions, and the availability of systems that enable waste segregation and proper disposal.

Awareness nevertheless remains an important component of ecological waste management because residents must first understand proper segregation, recycling, reuse, and disposal practices before they can deliberately apply them. Bona and Manuel (2023) examined awareness and compliance with solid-waste-management provisions involving segregation, the 3Rs, and disposal and reported gaps between what respondents knew and what they consistently practiced. Recent behavioral research further indicates that waste-separation behavior is shaped by more than knowledge alone. Perceived behavioral control, social norms, personal norms, and other practical conditions can influence whether individuals translate environmental intentions into actual waste-separation practices (Goh *et al.*, 2022; Govindan *et al.*, 2022). Related Philippine evidence supports this pattern. Galicia *et al.* (2022) reported high environmental-management awareness among residents of Barangay Sinundolan, Antique, while Peñaflor and Ong (2022) identified gaps in segregation at source, collection systems, recovery facilities, manpower, and information campaigns at Isabela State University Cabagan.

The present study is anchored in the Theory of Planned Behavior and Deterrence Theory. Ajzen's (1991) Theory of Planned Behavior explains behavior through attitudes, subjective norms, perceived behavioral control, and behavioral intentions. Applied to ecological solid waste management, the theory suggests that awareness may contribute to favorable attitudes toward compliance, but actual behavior also depends on social expectations and whether individuals believe they possess the resources and opportunities necessary to perform the behavior. Deterrence Theory complements this perspective by emphasizing the influence of perceived certainty and consequences of sanctions on compliance with rules and regulations (Nagin, 2013). Together, the theories provide a framework for understanding environmental compliance as the product of both internal behavioral processes and external regulatory conditions.

MATERIALS AND METHODS

Participants

The study was conducted among residents of Barangays Poblacion, Inug-Ug, and Gli-Gli in the Municipality of Pikit, North Cotabato. Eligible respondents were at least

18 years old and had resided in their respective barangay for at least six months, ensuring sufficient familiarity with local waste-management practices and programs.

The three selected barangays had a combined population of 17,757: 9,902 residents from Poblacion, 3,994 from Inug-Ug, and 3,861 from Gli-Gli. A total of 392 respondents participated in the study. Proportional stratified random sampling was employed, resulting in 219 respondents from Poblacion, 88 from Inug-Ug, and 85 from Gli-Gli. The original sampling procedure further considered age and gender in selecting respondents within the identified communities.

Participation was voluntary. Respondents were informed of the study's purpose, procedures, confidentiality measures, and their right to decline participation or omit items they preferred not to answer. Informed consent was secured prior to questionnaire administration, and identifying information was excluded from the reported data.

Instrument

The study used a structured questionnaire adapted from Bona and Manuel (2023), whose original instrument assessed awareness of and compliance with a solid waste management program across segregation, reduce-reuse-recycle, and disposal domains. Because the source instrument was developed for an academic-institution setting, modifications were made for its application to household and community contexts in Pikit. Items were reworded to reflect household practices, additional barangay-level waste-management items were incorporated, and the questions were translated into Tagalog to improve respondent comprehension.

The modified questionnaire consisted of two major sections. The first assessed awareness of waste segregation, reduce-reuse-recycle practices, and waste disposal using a five-point scale ranging from 1 (Not Aware) to 5 (Very Aware). The second assessed compliance with corresponding waste-management practices using a five-point scale ranging from 1 (Never) to 5 (Always).

The instrument underwent expert review involving environmental management, criminology, and research-methodology perspectives. A pilot test was then conducted among 20 residents who possessed characteristics similar to the target respondents but were excluded from the final sample. The pilot test produced a Cronbach's alpha coefficient of .74, indicating acceptable internal consistency for the modified instrument (DeVellis & Thorpe, 2021).

Method of Data Analysis

Means and standard deviations were used to summarize respondents' awareness and compliance scores. Pearson's product-moment correlation coefficient was used to determine the strength and direction of the relationship between public awareness of RA 9003 and compliance with its provisions. Statistical significance was evaluated at the .05 level. Because the research design was correlational,

a statistically significant coefficient was interpreted as an association between awareness and compliance and not as evidence that awareness directly caused compliance.

RESULTS AND DISCUSSION

This chapter presents, analyzes, and interprets the findings of the study entitled “Public Awareness and Compliance on the Provisions of Republic Act 9003 Among Communities in Pikit, North Cotabato.” The results are arranged according to the specific objectives of the research, focusing on the community’s level of awareness of RA 9003, the extent of their compliance with its major provisions, and the relationship between awareness and actual compliance practices.

All information gathered from the respondents was carefully organized, tabulated, and analyzed to provide a clear and comprehensive understanding of how community members in Pikit, North Cotabato, observe the requirements of RA 9003, particularly in the areas of waste segregation, reduction, recycling, and proper

disposal. The discussion also integrates insights from relevant literature and previous studies to contextualize the findings, highlight consistent and contrasting results, and deepen the analysis regarding the factors that influence adherence to solid waste management policies. Through this approach, the chapter offers a more holistic view of the community’s behavior, challenges, and the overall effectiveness of the implementation of RA 9003 at the local level.

Level of Awareness of Republic Act 9003

Table 1 shows that respondents demonstrated a very high level of awareness regarding the provisions of Republic Act No. 9003, with an overall mean of 4.70. This indicates that residents possess strong knowledge of proper solid waste management practices, particularly in segregation, waste reduction, and proper disposal. The consistently high mean scores across the three domains suggest that the principles of RA 9003 are widely recognized within the community.

Table 1: Level of Awareness of Republic Act 9003

Indicators	Mean	Std. Deviation	Interpretation
Segregation/ Separation			
Segregate solid waste into biodegradable and non-biodegradable. (Paghiwalayin ang mga nabubulok at di-nabubulok na basura.)	4.78	0.419	Very High
Segregate recyclable from non-recyclable wastes. (Paghiwalayin ang mga nare-recycle sa mga hindi nare-recycle na basura.)	4.74	0.436	Very High
Segregates compostable from noncompostable. (Paghiwalayin ang mga pwedeng i-compost sa mga hindi pwedeng i-compost.)	4.70	0.482	Very High
Segregate biodegradable or compostable wastes in place where they are generated. (Paghiwalayin ang mga nabubulok o compostable na basura sa lugar kung saan ito nagmumula.)	4.71	0.461	Very High
Segregate nonbiodegradables in a place where they are generated. (Paghiwalayin ang mga di-nabubulok na basura sa lugar kung saan ito nagmumula.)	4.76	0.426	Very High
Separate biodegradable wastes in four enclosed containers for recovery. (Ilagay ang mga nabubulok na basura sa apat na saradong lalagyan para sa muling paggamit.)	4.74	0.473	Very High
Separate non-biodegradable in four enclosed containers for recovery. (Ilagay ang mga di-nabubulok na basura sa apat na saradong lalagyan para sa muling paggamit.)	4.68	0.471	Very High
Segregate recyclable wastes before collection. (Paghiwalayin muna ang mga nare-recycle na basura bago kolektahin.)	4.77	0.431	Very High
Sort metal and plastic containers as substitute pots for plants. (Gamitin ang mga lata at plastik bilang paso ng halaman.)	4.77	0.419	Very High
Separate and keep safe hazardous waste material such as broken fluorescent lamps and bottles. (Ihiwalay at itago nang maayos ang mga mapanganib na basura tulad ng sirang bombilya at bote.)	4.77	0.419	Very High
Category Mean	4.74	0.444	Very High
Reduce, Reuse, Recycle			
Minimize the use of non-biodegradable materials. (Bawasan ang paggamit ng mga di-nabubulok na materyales.)	4.77	0.430	Very High

Minimize the use of biodegradable food liners, wrappers, and containers. (Bawasan ang paggamit ng mga pambalot at lalagyang gawa sa nabubulok na materyales.)	4.74	0.448	Very High
Collect recyclables separately and bring to recycling centers or junk dealers. (Kolektahin nang hiwalay ang mga nare-recycle at dalhin sa recycling center o junk shop.)	4.73	0.452	Very High
Feed animals with food scraps. (Pakainin ang mga hayop gamit ang mga tirang pagkain.)	4.72	0.473	Very High
Dry fruit peelings and use as an insect repellent. (Patuyuin ang balat ng prutas at gamitin bilang panlaban sa insekto.)	4.47	0.907	Very High
Used tires for playground material or stocked structures for backyard composting. (Gamitin ang lumang gulong bilang materyales sa palaruan o composting sa bakuran.)	4.76	0.447	Very High
Recycle residuals of solid wastes after resource recovery from future use. (I-recycle ang natitirang basura pagkatapos makuha ang mapapakinabangan nito.)	4.71	0.471	Very High
Reuse bayong and other containing bags during the marketing. (Muling gamitin ang bayong at iba pang bag kapag namimili.)	4.71	0.465	Very High
Convert organic material such as grass, leaves, food waste, woody material, and manure into a soil-like material. (Gawing compost o pataba ang mga damo, dahon, at tirang pagkain.)	4.70	0.475	Very High
Use animal waste (feces, urine, soiled wipes, pads) as organic gardening. (Gamitin ang dumi ng hayop bilang organikong pataba sa hardin.)	4.72	0.484	Very High
Category Mean	4.70	0.505	Very High
Disposal			
Store biodegradable or compostable wastes in places where they are generated. (Itago ang mga nabubulok o compostable na basura sa lugar kung saan ito nagmumula.)	4.67	0.559	Very High
Store nonbiodegradable in the place where they are generated. (Itago ang mga di-nabubulok na basura sa lugar kung saan ito nagmumula.)	4.71	0.504	Very High
Place food waste in covered cans or pails. (Ilagay ang tirang pagkain sa mga lalagyang may takip.)	4.68	0.498	Very High
Place garden and human wastes in sacks, cans, and bags. (Ilagay ang mga basurang galing sa halaman at bahay sa mga sako o bag.)	4.67	0.519	Very High
Place non-compostable wastes in either sacks, bags, or boxes. (Ilagay ang mga di-compostable na basura sa sako, bag, o kahon.)	4.65	0.504	Very High
Store toxic and hazardous wastes in a sealed bag/container prior to collection. (Itago ang mga mapanganib na basura sa selyadong lalagyan bago kolektahin.)	4.74	0.454	Very High
Dispose of residuals of solid waste after resource recovery from future use. (Itapon nang maayos ang natitirang basura pagkatapos makuha ang mapapakinabangan nito.)	4.69	0.506	Very High
Bring out solid wastes in front of the house gate/door or along the collection route during the collection period. (Ilabas ang basura sa harap ng bahay sa itinakdang oras ng koleksyon.)	4.71	0.582	Very High
Avoid open burning of firewood materials .e. g. (twigs, branches, leaves, husks) (Iwasan ang pagsusunog ng mga dahon at sanga sa bukas na lugar.)	4.56	0.595	Very High
Avoid open dumping of firewood materials e. g. (twigs, branches, leaves , husks) (Iwasan ang pagtatapon ng basura sa bukas na lugar.)	4.58	0.614	Very High
Category mean	4.67	0.534	Very High
Overall Mean	4.70	0.494	Very High Level of Awareness Regarding Provision RA 9003

Among the three domains, Segregation/Separation obtained the highest category mean ($\bar{x} = 4.74$). This suggests that respondents are highly familiar with waste classification practices such as separating biodegradable, nonbiodegradable, recyclable, and hazardous wastes. The highest indicator, “Segregate solid waste into biodegradable and nonbiodegradable,” obtained a mean of 4.78, indicating that residents widely recognize this practice. A deeper analysis of this result suggests that the high level of awareness is not incidental but is likely shaped by specific mechanisms operating within the community. One key factor is the frequency and visibility of barangay-led environmental campaigns, such as regular clean-up drives, waste segregation orientations, and house-to-house information dissemination. These repeated exposures reinforce knowledge and normalize segregation behavior among residents. In addition, school-based environmental education programs contribute to early awareness, as students bring learned practices into their households, creating a ripple effect within the community.

Furthermore, the implementation of barangay ordinances aligned with Republic Act 9003 plays a significant role. The presence of local policies—particularly those that include monitoring systems, penalties for non-compliance, or incentives for proper waste practices—can strengthen adherence by combining awareness with accountability. The visibility of segregation infrastructure, such as labeled bins and scheduled waste collection, also makes the practice more accessible and easier to follow in daily routines.

However, the indicator “Separate nonbiodegradable in four enclosed containers for recovery” obtained the lowest mean of 4.68, although it is still interpreted as very high. This may indicate that while residents practice basic waste segregation, maintaining multiple enclosed containers for different types of nonbiodegradable waste may be less common due to limited household space, lack of available containers, or convenience in managing waste. This suggests that some households may still require additional support and guidance in implementing more detailed segregation practices. Barangay campaigns, school-based environmental activities, and local ordinances often emphasize household waste segregation, making it easier for residents to understand and apply the practice in their daily routines. Similar findings were reported by Reyes and Madrigal (2020), who noted that segregation awareness is often the most developed component of RA 9003 implementation because it is the most visible and regularly emphasized practice.

The Reduce, Reuse, and Recycle (3Rs) domain also obtained a very high category mean ($\bar{x} = 4.70$), indicating that respondents are generally aware of strategies to minimize waste generation and promote resource recovery. Indicators such as “Minimize the use of nonbiodegradable materials,” with a mean of 4.77, and “Used tires for playground material or stocked structures for backyard composting,” with a mean of 4.76, received

high ratings. A deeper analysis suggests that this high level of awareness may be influenced by economic and contextual factors within the community. In many local settings, recyclable materials such as plastics, bottles, and metals are commonly sold to junk shops, providing financial incentives that reinforce recycling behavior. This economic benefit makes recycling not only an environmental practice but also a livelihood-supporting activity, which likely contributes to its widespread awareness and acceptance.

Additionally, barangay campaigns, school-based programs, and community initiatives aligned with Republic Act 9003 often emphasize practical and visible 3Rs strategies, making them easier for residents to adopt in their daily routines. However, the indicator “Dry fruit peelings and use as an insect repellent” had the lowest mean in this domain (4.47) and a relatively high standard deviation (0.907), indicating variation in respondents’ awareness. This may suggest that while residents understand the general concept of recycling, they may be less familiar with alternative or innovative recycling methods. This observation supports the findings of Domingo and Manejar (2021), who emphasized that communities often show high awareness of general environmental practices but lower familiarity with alternative or innovative recycling methods.

For the Disposal domain, the category mean of ($\bar{x} = 4.67$) likewise indicates a very high level of awareness regarding proper waste storage and disposal practices. The indicator “Store toxic and hazardous wastes in a sealed bag/container prior to collection” recorded one of the highest means, 4.74, suggesting that respondents recognize the importance of safely handling hazardous materials. This suggests that this high level of awareness may be influenced by targeted information campaigns and risk communication strategies within the community. Hazardous waste management is often emphasized in barangay orientations and public health campaigns due to its direct impact on public health and safety. As a result, residents may be more cautious and attentive to these practices, especially when clear guidelines are provided under Republic Act 9003. The perceived risk associated with improper handling of toxic waste likely strengthens compliance, making this indicator one of the most consistently practiced. However, relatively lower mean scores were observed for “Avoid open burning of firewood materials, e.g., (twigs, branches, leaves, husks)” with a mean of 4.56, and “Avoid open dumping of firewood materials, e.g., (twigs, branches, leaves, husks)” obtained a mean of 4.58. Although these values are still interpreted as very high, the comparatively lower scores may indicate that traditional waste-disposal practices, such as burning garden waste, still occur in some households. According to Tamang *et al.* (2020), long-standing practices such as burning yard waste remain common in many communities despite increased awareness of proper disposal methods, mainly because these practices are convenient and deeply embedded in local routines.

Level of Compliance to Republic Act 9003

Table 2 shows that respondents demonstrated a very high level of compliance with the provisions of Republic Act No. 9003, with an overall mean of 4.67. This indicates that residents not only possess awareness of proper

waste management practices but also apply them in their daily activities. The high level of compliance suggests that waste management behaviors such as segregation, recycling, and proper disposal have become routine household practices within the community.

Table 2: Level of Compliance to Republic Act 9003

Indicators	Mean	Std. Deviation	Interpretation
Segregation/ Separation			
I Segregate solid waste into biodegradable and non-biodegradable. (Paghiwalayin ang mga nabubulok at di-nabubulok na basura.)	4.71	0.466	Very High
I Segregate recyclable from non-recyclable wastes. (Paghiwalayin ang mga nare-recycle sa mga hindi nare-recycle na basura.)	4.69	0.505	Very High
I Segregates compostable from noncompostable. (Paghiwalayin ang mga pwedeng i-compost sa mga hindi pwedeng i-compost.)	4.67	0.518	Very High
I Segregate biodegradable or compostable wastes in place where they are generated. (Paghiwalayin ang mga nabubulok o compostable na basura sa lugar kung saan ito nagmumula.)	4.69	0.506	Very High
I Segregate nonbiodegradables in a place where they are generated. (Paghiwalayin ang mga di-nabubulok na basura sa lugar kung saan ito nagmumula.)	4.64	0.516	Very High
I Separate biodegradable wastes in four enclosed containers for recovery. (Ilagay ang mga nabubulok na basura sa apat na saradong lalagyan para sa muling paggamit.)	4.75	0.472	Very High
I Separate non-biodegradable in four enclosed containers for recovery. (Ilagay ang mga di-nabubulok na basura sa apat na saradong lalagyan para sa muling paggamit.)	4.70	0.508	Very High
I Segregate recyclable wastes before collection. (Paghiwalayin muna ang mga nare-recycle na basura bago kolektahin.)	4.67	0.543	Very High
I Sort metal and plastic containers as substitute pots for plants. (Gamitin ang mga lata at plastik bilang paso ng halaman.)	4.69	0.499	Very High
I Separate and keep safe hazardous waste material such as broken fluorescent lamps and bottles. (Ihiwalay at itago nang maayos ang mga mapanganib na basura tulad ng sirang bombilya at bote.)	4.73	0.479	Very High
Category Mean	4.69	0.501	Very High
Reduce, Reuse, Recycle			
I Minimize the use of non-biodegradable materials. (Bawasan ang paggamit ng mga di-nabubulok na materyales.)	4.64	0.532	Very High
I Minimize the use of biodegradable food liners, wrappers, and containers. (Bawasan ang paggamit ng mga pambalot at lalagyang gawa sa nabubulok na materyales.)	4.72	0.473	Very High
I Collect recyclables separately and bring to recycling centers or junk dealers. (Kolektahin nang hiwalay ang mga nare-recycle at dalhin sa recycling center o junk shop.)	4.73	0.471	Very High
I Feed animals with food scraps. (Pakainin ang mga hayop gamit ang mga tirang pagkain.)	4.69	0.484	Very High
Dry fruit peelings and use as an insect repellent. (Patuyuin ang balat ng prutas at gamitin bilang panlaban sa insekto.)	4.43	0.918	Very High
I Used tires for playground material or stocked structures for backyard composting. (Gamitin ang lumang gulong bilang materyales sa palaruan o composting sa bakuran.)	4.72	0.460	Very High

I Recycle residuals of solid wastes after resource recovery from future use. (I-recycle ang natitirang basura pagkatapos makuha ang mapapakinabangan nito.)	4.72	0.484	Very High
I Reuse bayong and other containing bags during the marketing. (Muling gamitin ang bayong at iba pang bag kapag namimili.)	4.74	0.459	Very High
I Convert organic material such as grass, leaves, food waste, woody material, and manure into a soil-like material. (Gawing compost o pataba ang mga damo, dahon, at tirang pagkain.)	4.74	0.470	Very High
I Use animal waste (feces, urine, soiled wipes, pads) as organic gardening. (Gamitin ang dumi ng hayop bilang organikong pataba sa hardin.)	4.72	0.502	Very High
Category Mean	4.69	0.526	Very High
Disposal			
I Store biodegradable or compostable wastes in places where they are generated. (Itago ang mga nabubulok o compostable na basura sa lugar kung saan ito nagmumula.)	4.70	0.493	Very High
I Store nonbiodegradable in the place where they are generated. (Itago ang mga di-nabubulok na basura sa lugar kung saan ito nagmumula.)	4.69	0.505	Very High
I Place food waste in covered cans or pails. (Ilagay ang tirang pagkain sa mga lalagyang may takip.)	4.70	0.496	Very High
I Place garden and human wastes in sacks, cans, and bags. (Ilagay ang mga basurang galing sa halaman at bahay sa mga sako o bag.)	4.68	0.510	Very High
I Place non-compostable wastes in either sacks, bags, or boxes. (Ilagay ang mga di-compostable na basura sa sako, bag, o kahon.)	4.65	0.538	Very High
I Store toxic and hazardous wastes in a sealed bag/container prior to collection. (Itago ang mga mapanganib na basura sa selyadong lalagyan bago kolektahin.)	4.67	0.509	Very High
I Dispose of residuals of solid waste after resource recovery from future use. (Itapon nang maayos ang natitirang basura pagkatapos makuha ang mapapakinabangan nito.)	4.59	0.537	Very High
I Bring out solid wastes in front of the house gate/door or along the collection route during the collection period. (Ilabas ang basura sa harap ng bahay sa itinakdang oras ng koleksyon.)	4.67	0.612	Very High
I Avoid open burning of firewood materials .e. g. (twigs, branches, leaves, husks) (Iwasan ang pagsusunog ng mga dahon at sanga sa bukas na lugar.)	4.40	0.790	Very High
I Avoid open dumping of firewood materials e. g. (twigs, branches, leaves , husks) (Iwasan ang pagtatapon ng basura sa bukas na lugar.)	4.59	0.680	Very High
Category mean	4.63	0.567	Very High
Overall Mean	4.67	0.531	Very High Level of Compliance to Provision of RA 9003

The Segregation/Separation category had a category mean ($\bar{x} = 4.69$), suggesting that residents consistently separate waste at the source. The highest indicator, “I separate biodegradable wastes in four enclosed containers for recovery,” has a mean of 4.75. A deeper analysis indicates that this high level of compliance may be influenced by both knowledge-based and structural factors within the community. Residents are more likely to practice proper segregation when they clearly understand its purpose and when it is reinforced through visible, routine practices, such as scheduled waste collection and labeled containers. Community-level mechanisms—such as barangay-led information campaigns, demonstrations on proper waste

handling, and school-based environmental education—likely help reinforce these behaviors. Moreover, the implementation of local ordinances aligned with Republic Act 9003 provides a regulatory framework that encourages compliance through monitoring and accountability. This supports the findings of Del Rosario (2023), who emphasized that household-level segregation is sustained when residents understand its purpose and have access to basic facilities. Conversely, the lowest indicator in this category, “I segregate nonbiodegradable in a place where they are generated,” has a mean of 4.64; though still very high, this suggests that while residents are generally aware of proper segregation, consistent implementation

at the point of generation may be affected by practical constraints. These may include limited household space, insufficient or poorly placed containers, and the convenience of disposing of waste in a single location rather than segregating it immediately. This is consistent with Arceo (2021), who found that although knowledge of segregation was high among urban households, practical constraints sometimes hindered consistent implementation.

The Reduce, Reuse, and Recycle domain also obtained a very high mean ($\bar{x} = 4.69$), reflecting strong engagement in waste minimization and reuse practices. The highest indicators, such as “I reuse bayong and other containers during the marketing” and “I convert organic material such as grass, leaves, food waste, woody material, and manure into a soil-like material,” obtained the same mean of 4.74; a deeper analysis suggests that the high scores in these indicators may be influenced by cultural norms and economic practicality within the community. The use of reusable materials like bayong is deeply embedded in local practices, especially in traditional markets where such containers are both accessible and environmentally friendly.

Similarly, composting organic waste is often practiced in households with available space, as it provides direct benefits such as fertilizer for plants or gardens. These practices are not only environmentally sustainable but also economically advantageous, which likely reinforces their continued use. This supports the findings of Domingo and Manajar (2021), who noted that community participation in recycling programs and culturally embedded reuse practices significantly enhance household engagement in 3R activities. However, “Drying fruit peelings and use as insect repellents” 4.43 scored lowest; this reveals that while residents are knowledgeable about general and familiar 3R strategies, their awareness and application of alternative or innovative waste utilization methods remain limited. One possible explanation is that such practices are less visible in community campaigns and may require specific knowledge, skills, or demonstration before they can be effectively adopted. This is supported by Ching, Israel, and Acanto (2023), who highlighted that community-based interventions and demonstrations enhance the adoption of alternative waste utilization methods.

Table 3: Correlation between Awareness and Compliance

Variables	R	p-value	Remarks
Awareness regarding republic act 9003 and Compliance to republic act 9003	0.296	0.000	Significant

**Significant at .05 level*

A closer examination reveals several critical insights. First, the weak correlation implies that awareness is not the primary driver of compliance. Even highly aware residents may not consistently follow proper waste management practices when practical or contextual constraints are present. These include limited access to segregation containers, insufficient waste collection services, limited household space, and weak enforcement

Among the three domains, disposal had the lowest category mean ($\bar{x} = 4.63$). The highest indicators, such as “I Store biodegradable or compostable wastes in places where they are generated” and “I Place food waste in covered cans or pails,” had a mean of 4.70. This suggests that these high scores are influenced by the convenience and immediate benefits of proper storage practices, such as reducing foul odors, preventing pests, and maintaining household cleanliness. Additionally, these behaviors are often emphasized in barangay-level orientations and supported by guidelines under Republic Act 9003, making them more familiar and easier for residents to adopt. The indicator “I Avoid open burning of firewood materials, e.g., (twigs, branches, leaves, husks)” 4.40 were the lowest-performing, this suggests that while residents are aware that open burning is discouraged or prohibited, some may still engage in this activity due to practical constraints, such as irregular waste collection schedules, lack of designated disposal facilities for yard waste, or the convenience of immediate disposal. From the perspective of Deterrence Theory, this suggests that compliance is influenced not only by knowledge but also by the perceived likelihood of sanctions and monitoring. Formarejo (2022) similarly emphasized that compliance improves when enforcement mechanisms are visible and consistently applied.

The very high level of compliance with Republic Act No. 9003 suggests that respondents not only understand the law but also actively practice its provisions in their daily lives. The consistently high ratings across segregation, reduce–reuse–recycle, and disposal indicate that proper waste management behaviors have become routine household practices rather than occasional actions.

Correlation between Awareness and Compliance

Table 3 presents the correlation between awareness of Republic Act 9003 and compliance with its provisions. The computed correlation coefficient ($r = 0.296$, $p = 0.000$) indicates a statistically significant, but weak-to-moderate, positive relationship. This finding suggests that, although residents who are more aware of RA 9003 tend to comply slightly more with proper waste management practices, awareness alone accounts for only a small portion of the variation in compliance behavior.

of local ordinances. In other words, residents’ compliance is shaped more by external conditions and community systems than by knowledge of the law alone.

Second, the ceiling effect likely contributes to the weak correlation. Previous results showed very high levels of both awareness and compliance among respondents. When most scores cluster near the upper end of the scale, statistical analysis detects a weaker association, even

though a relationship exists in practice. This underscores that high awareness does not automatically translate into a proportionally strong statistical correlation with behavior. From the perspective of the Theory of Planned Behavior (TPB) (Icek Ajzen, 1991), the weak correlation can also be explained by the role of perceived behavioral control. Even if individuals have positive attitudes and awareness, they may not comply if they perceive barriers such as a lack of facilities, inconvenience, or limited control over waste disposal options. For example, lower compliance with open-burning restrictions may indicate that residents feel they have no practical alternative, especially in areas with irregular waste collection.

Another critical factor is law enforcement, which is best explained through Deterrence Theory. According to Margaret Levi (1988), compliance is influenced by the perceived certainty and severity of sanctions. The relatively low compliance observed in practices such as avoiding open burning suggests that when enforcement is weak or inconsistent, individuals are less likely to comply fully with the law. This implies that awareness alone is insufficient without visible monitoring and consistent penalties.

The study's findings, particularly the low level of compliance with open-burning regulations, can be better understood through the lens of the Theory of Planned Behavior and Deterrence Theory. From the perspective of TPB, low compliance may be attributed to weak perceived behavioral control. This suggests that individuals may lack access to alternative waste disposal options, such as functional material recovery facilities or regular waste collection services, making open burning a more convenient or necessary practice. Even if individuals are aware of the negative effects of open burning and hold favorable attitudes toward proper waste management, limited resources and infrastructure may hinder their ability to comply.

Additionally, subjective norms may also play a role in sustaining open-burning practices. If such behavior is commonly accepted within the community, individuals may feel less social pressure to change their actions, thereby weakening their intention to comply with RA 9003.

From the standpoint of Deterrence Theory, low compliance may also indicate a weak perception of the certainty and severity of punishment. If enforcement of RA 9003 is inconsistent or penalties are rarely imposed, individuals may not perceive a significant risk in violating the law. The absence of visible sanctions or monitoring mechanisms reduces the deterrent effect, allowing non-compliant behaviors such as open burning to persist.

Taken together, the findings suggest that non-compliance is not solely due to a lack of awareness but rather to the combined influence of limited behavioral control and weak enforcement mechanisms. This highlights the need for both improved waste management infrastructure and stricter, more consistent law enforcement to enhance compliance with RA 9003.

CONCLUSION

The study found that residents of Barangays Poblacion, Inug-Ug, and Gli-Gli in Pikit, North Cotabato demonstrated a Very High level of awareness of the provisions of Republic Act No. 9003 ($M = 4.70$, $SD = 0.494$). Awareness was strongest in segregation and separation practices, followed by reduce-reuse-recycle practices, while waste disposal obtained the comparatively lowest domain mean. These results indicate that respondents generally possessed substantial knowledge of the waste-management practices assessed in the study. Respondents likewise demonstrated a Very High level of compliance with RA 9003 ($M = 4.67$, $SD = 0.531$). Segregation/separation and reduce-reuse-recycle practices obtained the highest category means, while disposal obtained the comparatively lowest compliance mean. Within the disposal indicators, avoiding open burning received the lowest rating. Although this item remained within the study's Very High classification, its comparatively lower score identifies an area that may warrant greater attention in community waste-management initiatives. Pearson's product-moment correlation revealed a statistically significant but weak positive relationship between awareness and compliance ($r = .296$, $p < .001$). Residents reporting greater awareness therefore tended to report greater compliance; however, the relatively weak association demonstrates that awareness and compliance are not interchangeable and that high awareness does not necessarily correspond to equally consistent behavior. Because the study employed a descriptive-correlational design, the relationship should not be interpreted as evidence that increased awareness directly causes increased compliance. The findings support an approach to ecological solid waste management that combines continuing environmental education with practical conditions that enable residents to comply. Reliable collection systems, accessible segregation and recovery facilities, clear community procedures, opportunities for participation, and consistent implementation of local waste-management regulations may complement information campaigns and help translate awareness into sustained practice. The findings should be interpreted within the study's limitations. The research involved residents from only three barangays and relied on self-reported awareness and compliance rather than direct observation of household behavior. Future research may include additional communities, examine other predictors of compliance such as access to waste-management infrastructure, social norms, enforcement, household characteristics, and perceived behavioral control, and incorporate observational or mixed-method approaches to provide a broader assessment of RA 9003 implementation.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*,

- 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Bona, C. A. D., & Manuel, M. S. (2023). Awareness and compliance of the students, faculty, and staff of Kalinga State University on the solid waste management program. *International Journal of English Literature and Social Sciences*, 8(3), 62–77. <https://doi.org/10.22161/ijels.83.10>
- Camarillo, M. E. C., & Bellotindos, L. M. (2021). A study of policy implementation and community participation in the municipal solid waste management in the Philippines. *Applied Environmental Research*, 43(2), 30–45. <https://doi.org/10.35762/AER.2021.43.2.3>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications* (5th ed.). SAGE Publications.
- Fadhullah, W., Imran, N. I. N., Syed Ismail, S. N., Jaafar, M. H., & Abdullah, H. (2022). Household solid waste management practices and perceptions among residents in the East Coast of Malaysia. *BMC Public Health*, 22, 1. <https://doi.org/10.1186/s12889-021-12274-7>
- Garcia, P. R. B., Crespo, P. S., Jr., De La Torre, R. L. G., & Eler, G. M. (2022). Environmental management among residents at Brgy. Sinundolan, San Remigio, Antique, Philippines. *American Journal of Multidisciplinary Research and Innovation*, 1(2), 18–21. <https://doi.org/10.54536/ajmri.v1i2.238>
- Goh, E., Esfandiar, K., Jie, F., Brown, K., & Djajadikerta, H. (2022). Please sort out your rubbish! An integrated structural model approach to examine antecedents of residential households' waste separation behaviour. *Journal of Cleaner Production*, 355, 131789. <https://doi.org/10.1016/j.jclepro.2022.131789>
- Govindan, K., Zhuang, Y., & Chen, G. (2022). Analysis of factors influencing residents' waste sorting behavior: A case study of Shanghai. *Journal of Cleaner Production*, 349, 131126. <https://doi.org/10.1016/j.jclepro.2022.131126>
- Nagin, D. S. (2013). Deterrence in the twenty-first century. *Crime and Justice*, 42(1), 199–263. <https://doi.org/10.1086/670398>
- Osumo, L. G., Llagas, E. G. O., & Castro, B. (2025). Walking the talk: The local community's engagement spectrum with the local government unit programs and policies. *Asia Pacific Journal of Educational Technologies, Psychology, and Social Sciences*, 1(1), 137–158. <https://doi.org/10.70847/617350>
- Peñaflor, B. L., & Ong, H. B. (2022). Managing solid waste at Isabela State University Cabagan (ISUC) Campus: Current practices and unfolding opportunities. *American Journal of Environment and Climate*, 1(2), 45–52. <https://doi.org/10.54536/ajec.v1i2.493>
- Republic of the Philippines. (2001). *Republic Act No. 9003: Ecological Solid Waste Management Act of 2000*.
- Republic of the Philippines. (2022). *Republic Act No. 11898: Extended Producer Responsibility Act of 2022*.
- United Nations Environment Programme, & International Solid Waste Association. (2024). *Global waste management outlook 2024: Beyond an age of waste—Turning rubbish into a resource*. United Nations Environment Programme.