

Community Participation, Government Support, and the Sustainability of Solid Waste Management Programs of Top Performing Barangays

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INTRODUCTION

This chapter discusses the background of the study, theoretical and conceptual frameworks, statement of the problem, hypotheses of the study, significance of the study, scope and limitations, and the definition of terms used in the research.

Background of the Study

Solid waste management has remained one of the major environmental concerns in the Philippines because of increasing population, rapid urbanization, and the growing volume of solid waste generated by communities. Improper waste disposal has continued to contribute to environmental pollution, flooding, contamination of water resources, greenhouse gas emissions, and risks to public health. These concerns have emphasized the need for effective and sustainable solid waste management programs that protect the environment while promoting responsible waste disposal practices (Ibañez & Torrentira, 2022; Del Rosario, 2023).

In the Philippines, solid waste management is governed by Republic Act No. 9003, otherwise known as the Ecological Solid Waste Management Act of 2000. The law provides a comprehensive framework for ecological solid waste management by promoting waste segregation at source, recycling, composting, the establishment of Materials Recovery Facilities (MRFs), and active community participation. Despite the implementation of this law, many local government units have continued to experience challenges in achieving full compliance because of limited financial resources, inadequate infrastructure, insufficient monitoring, and varying levels of public participation (Del Rosario, 2023; Ibañez & Torrentira, 2022).

Community participation has been recognized as a vital component in the successful implementation of solid waste management programs. Residents play an important role through waste segregation, recycling, composting, participation in clean-up activities, and support for environmental programs. Likewise, government support has remained essential in ensuring the sustainability of these initiatives by providing policies, financial resources, technical assistance, environmental education, monitoring, and enforcement of local ordinances. Previous studies have shown that strong collaboration between the community and the local government contributes to more effective and sustainable waste management programs, while weak institutional support and limited resources continue to hinder successful implementation (Vermudo et al., 2025; Philippine Institute for Development Studies [PIDS], 2026).

Although several studies have examined the implementation of Republic Act No. 9003, waste segregation practices, environmental awareness, and compliance with environmental policies, limited research has simultaneously investigated the influence of community participation and government support on the sustainability of solid waste management programs at the barangay level, particularly in one city in Negros Occidental. This gap in the literature highlighted the need for the present study to generate empirical evidence on how these factors relate to the sustainability of local solid waste management programs.

Accordingly, this study examined the relationship between community participation, government support, and the sustainability of solid waste management programs in top performing barangays in one city in Negros Occidental. Specifically, it determined whether community participation and government support were significantly associated with the sustainability of local solid waste management programs. The findings of the study were intended to provide useful information for local government officials, barangay leaders, policymakers, and other stakeholders in strengthening environmental policies and improving the long-term implementation of solid waste management initiatives.

Theoretical Framework

This study was anchored on the Stakeholder Theory developed by Edward Freeman (1984), which emphasized that the success of organizational and community initiatives depends on the active participation and collaboration of various stakeholders. In the context of solid waste management, stakeholders include local government units, barangay officials, residents, environmental organizations, and other community groups. The theory suggests that sustainable outcomes are achieved when stakeholders work together toward common goals.

The study was also supported by the Theory of Planned Behavior developed by Ajzen (1991). The theory posits that an individual's behavior is influenced by attitudes, subjective norms, and perceived behavioral control. Applied to waste management, community participation is influenced by residents' attitudes toward environmental protection, social expectations regarding waste disposal, and their perceived ability to participate in waste management activities.

Furthermore, the study was guided by the principles of Sustainable Development Theory (Brundtland 1987), which emphasizes balancing environmental protection, social responsibility, and economic development to meet present needs without compromising future generations.

Sustainable waste management programs contribute to environmental conservation while promoting community participation and institutional support. These theories provide the foundation for understanding how community participation and government support influence the sustainability of solid waste management programs.

Conceptual Framework

This study proposed that the sustainability of solid waste management (SWM) programs was significantly influenced by two major independent variables: community participation and government support. Community participation refers to the active involvement of residents in waste management initiatives through environmental awareness, waste segregation, volunteerism, participation in environmental activities, and community monitoring. Active citizen participation has been identified as a critical factor in improving compliance with waste management practices and promoting long-term environmental stewardship (Raghu & Rodrigues, 2022; Nielsen et al., 2026).

Government support pertains to the institutional interventions provided by local government units (LGUs), including adequate funding, effective policy implementation and enforcement, capacity-building programs, technical assistance, and the provision of waste management facilities and infrastructure. Recent studies emphasize that strong local governance, stakeholder collaboration, and institutional commitment are essential for ensuring the effectiveness and continuity of sustainable solid waste management programs (Vasconcelos et al., 2022; Alamoudi et al., 2022).

The study assumed that greater community participation strengthens environmental responsibility, community ownership, and compliance with solid waste management practices, while stronger government support enhances policy implementation, resource allocation, technical capability, and institutional continuity. The interaction of these two factors is expected to create an enabling environment for effective and sustainable waste management.

Consequently, higher levels of community participation and stronger government support are expected to positively influence the sustainability of solid waste management programs in the top performing barangays of one city in Negros Occidental. Sustainability is assessed through four interrelated dimensions: environmental

sustainability, reflected in improved waste reduction and environmental protection; economic sustainability, demonstrated by efficient resource utilization and cost-effective waste management; social sustainability, characterized by increased public participation and community well-being; and institutional sustainability, reflected in consistent policy implementation, organizational capacity, and long-term program continuity. Collectively, these relationships form the basis of the study's conceptual framework, which explains how community participation and government support contribute to sustaining solid waste management programs at the barangay level.

Figure 1. Schematic Diagram of the Study.



Statement of the Problem

This study determined the relation of community participation and government support on the sustainability of solid waste management programs in top performing barangays in one city in Negros Occidental.

Specifically, it sought to answer the following questions:

1. What is the level of community participation in solid waste management programs as a whole and in terms of:
 - a. waste segregation practices
 - b. volunteerism
 - c. environmental activities
 - d. monitoring activities

2. What is the level of government support in solid waste management programs as a whole and in terms of:
 - a. funding support
 - b. policy enforcement
 - c. capacity building
 - d. technical assistance
 - e. infrastructure support
3. What is the level of Sustainability of Solid Waste Management Programs as a whole and in terms of:
 - a. environmental sustainability
 - b. economic sustainability
 - c. social sustainability
 - d. institutional sustainability
4. Is there a significant relationship between community participation and sustainability of solid waste management programs?
5. Is there a significant relationship between government support and sustainability of solid waste management programs?

Hypotheses of the Study

The following null hypotheses were tested at the 0.05 level of significance:

1. There is no significant relationship between community participation and the sustainability of solid waste management programs.
2. There is no significant relationship between government support and the sustainability of solid waste management programs.

Significance of the Study

The findings of this study are expected to contribute to the improvement of solid waste management programs by providing empirical evidence on the role of community participation and government support in achieving program sustainability. Specifically, the study may benefit the following:

Local Government Units. The results may assist LGUs in strengthening policies, programs, and resource allocation related to solid waste management. The results may assist local governments in strengthening existing policies, programs, and ordinances related to waste reduction, segregation, collection, recycling, and proper disposal. Moreover, the study may help LGUs identify areas that require greater attention, particularly in terms of resource allocation, public education, enforcement, and community involvement. By using the findings as a basis for planning and decision-making, LGUs may develop more effective and sustainable solid waste management strategies that respond to the needs and conditions of their communities.

Policymakers. The study may provide evidence that can guide the development of more responsive environmental policies and governance mechanisms. The findings may highlight the factors that influence community participation in solid waste management and may reveal gaps between existing policies and their implementation at the local level. Such information may guide policymakers in developing more responsive, inclusive, and practical environmental policies and governance mechanisms. The study may also contribute to

policy discussions concerning public participation, environmental responsibility, institutional coordination, and the effective implementation of solid waste management programs.

Environmental Management Agencies. The findings may contribute to the design of programs that enhance community engagement and institutional support for sustainable waste management. The study may provide insights into the level of community awareness, participation, and cooperation in environmental initiatives, allowing agencies to develop interventions that are more appropriate to local needs. Furthermore, the results may support efforts to strengthen environmental education, information campaigns, technical assistance, monitoring, and institutional support. Through these initiatives, environmental management agencies may encourage stronger collaboration among government institutions, communities, and other stakeholders in addressing solid waste management concerns.

Barangay Officials and Environmental Committees. The study may provide information useful in improving environmental programs, monitoring systems, and community mobilization activities. The findings may help them identify common challenges in waste segregation, collection, recycling, disposal, and community participation. The study may also assist in strengthening monitoring systems, information and education campaigns, enforcement mechanisms, and community mobilization activities. By understanding the needs and concerns of residents, barangay officials may be better equipped to develop localized strategies that encourage greater participation and promote responsible waste management practices.

Residents. The findings may increase awareness regarding the importance of active participation in environmental initiatives and sustainable waste management practices. The study may help residents better understand how individual and collective behaviors, such as waste segregation, recycling, waste reduction, and proper disposal, contribute to environmental protection and community well-being. It may also encourage residents to become more involved in barangay environmental programs and to recognize their shared responsibility in maintaining a clean, safe, and sustainable community.

Academic Institutions. The study may serve as additional literature for Public Administration, Environmental Management, and Governance programs. Its findings may contribute to discussions and academic activities concerning environmental governance, public participation, local government administration, and sustainable development. The study may also be useful to students and faculty members who are interested in examining the relationship between government policies, institutional capacity, and community participation in environmental management.

Future Researchers. The study may provide a basis for future investigations related to environmental governance, community participation, and sustainability. The findings may serve as a reference for comparative studies involving different barangays, municipalities, or cities, as well as for studies examining other factors that influence environmental participation. Future researchers may also use the study to identify research gaps, develop related research questions, or explore alternative approaches to improving solid waste management and environmental governance.

Researcher. The study may enhance the researcher's competencies in policy analysis, environmental governance, and evidence-based decision-making. The research process may provide the researcher with practical experience in gathering, analyzing, and interpreting data related to community and environmental concerns. It may also strengthen the researcher's ability to identify governance challenges and formulate recommendations based on empirical evidence. Ultimately, the study may contribute to the researcher's academic and professional development and deepen their understanding of the role of public institutions and communities in promoting sustainable environmental management.

Scope and Limitations of the Study

Specifically, the study focused on determining the level of community participation and government support as perceived by barangay officials, assessing the level of sustainability of solid waste management programs, and determining the relationship between community participation, government support, and the sustainability of solid waste management programs.

The respondents of the study were barangay officials from top-performing barangays recognized for their implementation of solid waste management programs. These officials were chosen because they are directly involved in planning, implementing, monitoring, and evaluating environmental and solid waste management initiatives within their respective barangays. Their knowledge and experience provided relevant information regarding the implementation and sustainability of the programs.

The findings of this study were based solely on the responses of the participating barangay officials during the data collection period in 2026. Consequently, the results reflect their perceptions and experiences and may not fully represent the views of all community residents or stakeholders involved in solid waste management. Furthermore, the study was confined to the top-performing barangays; therefore, the findings should not be generalized to other barangays or local government units with different demographic, socioeconomic, or environmental conditions. Despite these limitations, the study provides valuable empirical evidence that may assist local government units, policymakers, and other stakeholders in strengthening policies and strategies for the long-term sustainability of solid waste management programs.

Definition of Terms

The following terms are defined conceptually and operationally for a better understanding of the study:

Capacity Building. It refers to the process of strengthening the knowledge, competencies, institutional systems, and technical capabilities of individuals and organizations to improve governance and achieve sustainable development objectives (United Nations Development Programme, 2023).

As used in this study, it refers to training sessions, seminars, and educational campaigns conducted by the LGU or partner organizations to enhance community knowledge and skills in proper waste management practices.

Community Participation. It refers to the active involvement of individuals, households, community organizations, and other stakeholders in planning, implementing, monitoring, and evaluating activities that promote collective well-being and sustainable environmental management (Al Mamun et al., 2024).

As used in this study, it refers to the extent of involvement of residents in solid waste management activities as measured through their level of awareness, participation in waste segregation and environmental activities, volunteerism, monitoring, and support for community-based waste management initiatives.

Economic Sustainability. It refers to the efficient use of financial, material, and institutional resources to ensure the long-term viability and resilience of development programs while supporting sustainable economic growth (Asian Development Bank, 2024).

As used in this study, it refers to the ability of the solid waste management program to maintain adequate financial resources, maximize available funds, and continuously support waste management activities over time.

Environmental Activities. It refers to organized initiatives and actions undertaken by individuals, communities, institutions, and governments to conserve natural resources, reduce environmental degradation, mitigate pollution, and promote sustainable environmental management (United Nations Environment Programme [UNEP], 2024).

As used in this study, it refers to residents' participation in environmental campaigns, tree planting, clean-up drives, recycling activities, and other community-based environmental programs.

Environmental Sustainability. It refers to the responsible management of natural resources and environmental systems to maintain ecological integrity while supporting present and future generations through sustainable practices (United Nations Environment Programme, 2024).

As used in this study, it refers to the extent to which the solid waste management program contributes to environmental protection through effective waste reduction, proper disposal, recycling, and pollution prevention.

Funding Support. It refers to the allocation and provision of financial resources necessary for implementing, maintaining, and improving public programs and services (Asian Development Bank, 2024).

Operationally, it refers to the financial assistance provided by the local government to support waste collection, recycling activities, environmental programs, facilities, equipment, and other solid waste management initiatives.

Government Support. It refers to the assistance provided by government institutions through policy implementation, financial resources, infrastructure development, technical assistance, capacity-building programs, and regulatory mechanisms that facilitate the effective implementation of public programs (United Nations Development Programme [UNDP], 2023).

As used in this study, it refers to the assistance provided by the local government in sustaining solid waste management programs, particularly in terms of funding support, policy enforcement, capacity-building initiatives, technical assistance, and infrastructure provision.

Infrastructure Support. It refers to the provision, development, maintenance, and improvement of physical facilities, equipment, utilities, and public assets necessary to ensure effective and sustainable implementation of development programs and public services (OECD, 2024).

As used in this study, it refers to the availability of Materials Recovery Facilities (MRFs), waste collection vehicles, garbage bins, recycling facilities, composting areas, and other equipment needed for solid waste management.

Institutional Sustainability. It refers to the capacity of institutions to maintain effective governance systems, organizational structures, policies, and operational processes that support long-term program implementation (United Nations Development Programme, 2023).

As used in this study, it refers to the continued implementation of local ordinances, organizational support, monitoring systems, and institutional commitment necessary to sustain solid waste management programs.

Monitoring Activities. It refers to the systematic and continuous collection, analysis, review, and reporting of information to assess program implementation, compliance, progress, effectiveness, and achievement of intended objectives for continuous improvement and accountability (United Nations Development Programme, 2023).

As used in this study, it refers to the regular inspection of waste segregation practices, waste collection activities, compliance with local ordinances, and evaluation of the implementation of solid waste management programs.

Policy Enforcement. It refers to the consistent implementation, monitoring, and application of laws, regulations, policies, and governance mechanisms to ensure compliance, accountability, and effective achievement of public policy objectives (OECD, 2024).

As used in this study, it refers to the actions taken by local authorities to implement RA 9003, including monitoring waste segregation, issuing penalties for non-compliance, and conducting inspections.

Social Sustainability. It refers to maintaining social well-being, equity, participation, inclusion, and community resilience to ensure that development initiatives provide long-term benefits for society (United Nations Development Programme, 2023).

As used in this study, it refers to the extent to which the solid waste management program promotes community participation, environmental awareness, cooperation, and shared responsibility among residents.

Solid Waste Management Program. It refers to the systematic administration of activities involving waste generation, segregation, collection, transport, recycling, treatment, and disposal to protect public health and the environment (Republic Act No. 9003, 2001).

As used in this study, it refers to the waste management initiatives implemented by the local government and barangay, including waste segregation, collection, recycling, environmental awareness campaigns, clean-up drives, and operation of waste management facilities.

Sustainability. It refers to the capacity of systems, institutions, and development programs to maintain environmental integrity, economic viability, social well-being, and effective governance over time while supporting the achievement of sustainable development goals (United Nations Development Programme, 2024–2028 Country Programme).

As used in this study, it refers to the extent to which the solid waste management program continues to operate effectively and achieve its intended outcomes over time.

Technical Assistance. It refers to the provision of specialized knowledge, advisory services, technical expertise, and professional guidance to strengthen institutional performance and program implementation (United Nations Development Programme, 2023).

As used in this study, it refers to the technical guidance, consultation, and expert support provided by the local government and partner agencies to improve the implementation of solid waste management programs.

Volunteerism. It refers to the voluntary contribution of time, skills, knowledge, and effort by individuals for the benefit of communities and sustainable development without expectation of monetary compensation (United Nations Volunteers, 2024).

As used in this study, it refers to residents' participation in unpaid activities such as clean-up drives, waste segregation campaigns, and environmental awareness programs organized by the barangay or LGU.

Waste Segregation Practices. It refers to the systematic separation of solid waste into appropriate categories at the point of generation to facilitate recycling, composting, treatment, and proper disposal (Republic Act No. 9003, 2001).

As used in this study, it refers to the extent to which residents properly separate biodegradable, recyclable, residual, and special wastes in accordance with the ecological solid waste management program.

REVIEW OF RELATED LITERATURE AND STUDY

This chapter presents the literature and empirical studies related to community participation, government support, and the sustainability of solid waste management programs. It provides the theoretical and empirical foundation for understanding the relationships among the variables under investigation.

Community Participation in Solid Waste Management

Community participation is considered one of the most essential components in achieving effective and sustainable solid waste management. It refers to the active involvement of residents, households, community organizations, and other stakeholders in activities such as waste segregation, recycling, waste reduction, environmental campaigns, and decision-making processes related to waste management. Contemporary approaches to environmental governance recognize that waste management is not solely a responsibility of government institutions but a shared responsibility requiring meaningful participation from members of the community (Salsabila et al., 2022; Al Mamun et al., 2024).

The importance of community participation is based on the understanding that the success of solid waste management programs depends largely on individual behavior and collective action. Even when local governments provide adequate facilities and policies, programs may fail if residents do not practice proper waste segregation, recycling, and disposal. Therefore, community participation serves as a mechanism that transforms waste management from a government-led activity into a collaborative environmental responsibility (Yusof et al., 2023).

Recent studies indicate that communities with higher levels of participation demonstrate improved compliance with waste management practices. Active involvement in environmental activities increases awareness, strengthens environmental responsibility, and encourages residents to adopt sustainable waste behaviors. According to Swarnkar (2024), community engagement improves the effectiveness of waste management systems because residents become more aware of their role in reducing waste generation and maintaining environmental cleanliness.

In the Philippine setting, community participation is particularly important in the implementation of Republic Act No. 9003, or the Ecological Solid Waste Management Act of 2000. The law emphasizes waste segregation at source, recycling, composting, and the establishment of local solid waste management programs. However, successful implementation depends greatly on the willingness of citizens to participate and comply with waste management policies. Studies have shown that local waste management initiatives become more effective when residents actively cooperate with local government units and participate in environmental programs (Camarillo & Bellotindos, 2022).

Recent Philippine studies further support the importance of community involvement in solid waste management. Eugenio et al. (2024) examined public perception toward community-based solid waste management and plastic waste densification initiatives in the Philippines. Their findings revealed that respondents generally demonstrated willingness to participate in waste collection projects and recognized the importance of community-based approaches in improving waste diversion practices. The study emphasized that public awareness and willingness to participate are important factors in ensuring the successful implementation of local solid waste management programs.

Similarly, Mercado and Rodil-Ocampo (2023) emphasized that effective solid waste management requires collaboration among various stakeholders, including local governments, communities, and private organizations. Their study on inter-local government cooperation in solid waste management in the Philippines highlighted that institutional arrangements become more effective when supported by stakeholder participation, technical capacity, and continuous collaboration.

Community participation also strengthens environmental ownership among residents. When communities are involved in planning, implementation, and monitoring activities, they develop a stronger sense of responsibility toward environmental protection. Al Mamun et al. (2024) emphasized that community engagement promotes ownership and accountability, which contribute to the continuity of environmental programs. Similarly, Harnita (2025) reported that household waste management practices improve when residents receive support through community-based initiatives and possess adequate knowledge, awareness, and motivation.

Moreover, community participation contributes to behavioral change, which is necessary for long-term sustainability. Waste segregation, recycling, and proper disposal practices require consistent individual action. According to Yusof et al. (2023), residents who actively participate in environmental programs are more likely to comply with waste management regulations and support sustainable initiatives. Their findings demonstrate that participation is not limited to physical involvement in waste activities but also includes developing environmental values and responsible behavior.

The role of community participation extends beyond household practices and includes involvement in community decision-making and environmental governance. Sustainable waste management programs require cooperation between residents and local authorities because communities possess valuable knowledge regarding local waste problems and possible solutions. Participatory approaches allow residents to contribute ideas, identify challenges, and support the improvement of waste management strategies (Mercado & Rodil-Ocampo, 2023).

Furthermore, community-based approaches are increasingly recognized as important strategies in addressing waste management challenges in developing countries. These approaches encourage local ownership, reduce dependence on government intervention alone, and improve the sustainability of environmental programs. When residents actively participate in waste segregation, recycling initiatives, and environmental campaigns, waste management programs are more likely to continue successfully over time (Al Mamun et al., 2024).

Recent empirical studies have consistently demonstrated that community participation in solid waste management is reflected through responsible waste segregation, volunteerism, participation in environmental activities, and community monitoring initiatives. Waste segregation at source remains one of the most effective practices for reducing landfill waste, improving recycling efficiency, and promoting resource recovery. In a Philippine study, Eugenio et al. (2024) found that public willingness to participate in community-based solid waste management programs was strongly associated with awareness of proper waste segregation and environmental responsibility. Similarly, Tecson et al. (2024) reported that households with higher levels of knowledge and positive attitudes toward solid waste management were more likely to practice waste segregation, participate in community clean-up activities, and support local environmental initiatives. These findings emphasize that proper waste segregation is not merely a household practice but an important manifestation of active community participation in achieving sustainable solid waste management.

Volunteerism and participation in environmental activities likewise play a significant role in strengthening community-based waste management programs. Swarnkar (2024) emphasized that volunteer participation in clean-up drives, recycling campaigns, environmental education, and waste reduction activities enhances public awareness and encourages collective responsibility for environmental protection. Likewise, He et al. (2024), through a systematic review of participatory research in solid waste management, concluded that environmental programs become more effective when communities are actively involved in planning, implementation, and evaluation rather than serving only as beneficiaries of government interventions. Community participation fosters environmental stewardship, strengthens social cohesion, and encourages long-term behavioral change that supports sustainable waste management practices.

Another important dimension of community participation is involvement in monitoring and compliance activities. Recent studies indicate that citizen participation in monitoring waste disposal practices, reporting environmental violations, and supporting barangay environmental programs contributes to better policy implementation and improved environmental governance. Diola et al. (2024) observed that community-based waste diversion initiatives in Metro Manila became more effective when residents actively collaborated with barangay officials in implementing waste management activities and monitoring compliance with local ordinances. Similarly, Edullantes et al. (2024) found that community-based environmental education programs strengthened residents' participation in waste segregation, recycling, and environmental monitoring by increasing environmental awareness and promoting a sense of shared responsibility. Studies by Encina et al. (2024) further emphasized that the successful implementation of barangay solid waste management ordinances depends on the active participation of both local officials and community members in monitoring compliance and supporting environmental governance. Collectively, these studies affirm that waste segregation practices, volunteerism, environmental activities, and monitoring activities are complementary dimensions of community participation that contribute to the long-term sustainability of solid waste management programs.

Overall, the reviewed literature demonstrates that community participation is a critical determinant of successful solid waste management. Studies consistently show that active citizen involvement improves environmental awareness, strengthens compliance with waste policies, promotes collective responsibility, and contributes to program sustainability. These findings support the inclusion of community participation as one of the major variables in the present study, as understanding residents' involvement provides important insights into the sustainability of solid waste management programs.

Government Support in Solid Waste Management

Government support plays a central role in the successful implementation and sustainability of solid waste management programs. While community participation provides the behavioral foundation necessary for effective waste management, government institutions provide the policies, resources, infrastructure, technical assistance, and regulatory mechanisms required to organize and sustain these initiatives. In the context of local governance, solid waste management is not only an environmental concern but also an essential public service that requires institutional capacity, financial commitment, and continuous government intervention (Mercado & Rodil-Ocampo, 2023).

Government support in solid waste management refers to the assistance provided by national and local government agencies through policy formulation, budget allocation, infrastructure development, capacity building, monitoring, enforcement, and environmental education programs. These forms of support establish the conditions necessary for communities and other stakeholders to participate effectively in waste management activities. Without adequate institutional support, even well-designed environmental programs may experience difficulties in implementation and long-term continuity (United Nations Development Programme [UNDP], 2023).

In the Philippines, the responsibility of implementing solid waste management programs is primarily assigned to local government units (LGUs) through Republic Act No. 9003, otherwise known as the Ecological Solid Waste Management Act of 2000. The law mandates LGUs to develop and implement comprehensive solid waste management plans, establish materials recovery facilities, promote waste segregation at source, and conduct information and education campaigns. However, the effectiveness of these responsibilities depends largely on the availability of financial resources, technical expertise, institutional coordination, and political commitment from local authorities (Camarillo & Bellotindos, 2022).

Local governments serve as the primary implementing bodies of solid waste management programs because they are directly connected with the communities they serve. Their capacity to provide regular waste collection services, establish disposal facilities, enforce environmental ordinances, and monitor compliance greatly influences program outcomes. According to Mercado and Rodil-Ocampo (2023), strengthening local government capacity and inter-LGU cooperation is essential in improving solid waste management services in the Philippines. Their study emphasized that effective waste management requires not only individual LGU efforts but also collaboration among neighboring local governments to address shared environmental challenges.

Financial support is one of the most important dimensions of government involvement in solid waste management. Waste management activities require continuous funding for waste collection equipment, transportation, disposal facilities, recycling programs, personnel training, and community education campaigns. Limited financial resources often become a major barrier to effective implementation, particularly among smaller local governments. The Asian Development Bank (2024) emphasized that sustainable municipal solid waste management requires adequate investment in infrastructure, operational resources, and institutional development to ensure the continuity of waste management services.

Aside from financial assistance, government support is also demonstrated through the establishment and enforcement of environmental policies. Effective policy implementation ensures that waste management programs have clear guidelines and accountability mechanisms. Kumar, Singh, and Sharma (2024) found that strong policy enforcement, government commitment, and regulatory support significantly contribute to the effectiveness and sustainability of municipal solid waste management systems. Their findings suggest that policies alone are insufficient unless supported by consistent monitoring, enforcement, and institutional commitment.

Government-provided infrastructure is another important factor influencing waste management effectiveness. Proper waste collection systems, materials recovery facilities, recycling centers, composting facilities, and environmentally sound disposal sites are necessary components of sustainable waste management. Without adequate infrastructure, communities may find it difficult to comply with waste segregation and recycling requirements. According to the United Nations Development Programme (2023), investments in sustainable waste infrastructure and improved local governance mechanisms contribute significantly to better environmental outcomes and stronger community participation.

Technical assistance and capacity building also represent important forms of government support. Local officials, waste management personnel, and community leaders require adequate knowledge and skills to implement effective programs. Training programs, technical guidance, and knowledge-sharing initiatives help strengthen institutional capacity and improve the quality of waste management services. The Asian Development Bank (2024) emphasized that building institutional capacity among local governments is essential to address operational challenges and achieve sustainable waste management outcomes.

Moreover, government support influences community participation by creating an enabling environment for public involvement. Residents are more likely to participate in waste management activities when local governments provide clear policies, accessible facilities, consistent information campaigns, and visible commitment toward environmental protection. When communities observe strong government leadership and support, they develop greater trust and willingness to cooperate with local environmental initiatives (Mercado & Rodil-Ocampo, 2023).

Recent Philippine studies highlight that gaps in government support remain among the major challenges affecting the implementation of solid waste management programs. Camarillo and Belotindos (2022) reported that inadequate monitoring, limited infrastructure, and inconsistent enforcement of waste management policies affect compliance at the community level. Their findings suggest that stronger institutional support from local governments is necessary to improve residents' participation and ensure the effective implementation of Republic Act No. 9003.

Similarly, Samova and Titic (2025) emphasized that improving the Philippine waste management system requires stronger coordination among government agencies, local authorities, private organizations, and communities. Their assessment revealed that institutional weaknesses, fragmented responsibilities, and resource limitations continue to affect waste management performance. The study recommended strengthening government leadership, improving stakeholder coordination, and increasing investment in waste management systems.

Furthermore, government support contributes to the sustainability of waste management programs by ensuring continuity beyond short-term projects. Programs that depend solely on temporary funding or individual initiatives may experience difficulties once external support decreases. Sustainable waste management requires institutionalized policies, regular budget allocation, effective monitoring systems, and committed leadership. According to the United Nations Development Programme (2023), strong governance structures and institutional commitment are essential in maintaining environmental programs over the long term.

Recent literature consistently identifies government support as a critical determinant of effective and sustainable solid waste management. Beyond policy formulation, local government units are expected to provide adequate financial resources, strengthen institutional capacity, enforce environmental regulations, and establish the necessary infrastructure to ensure the successful implementation of waste management programs. According to the United Nations Environment Programme (2024), effective solid waste management requires integrated government interventions that combine policy enforcement, financing, technical assistance, and public participation to achieve long-term environmental sustainability. Similarly, the Asian Development Bank (2024) emphasized that local governments play a central role in strengthening waste management systems through sustained investments in collection facilities, materials recovery facilities, technical expertise, and community education programs.

Funding support remains one of the most essential forms of government intervention in solid waste management. Adequate financial resources enable local government units to procure equipment, construct waste management facilities, implement environmental programs, and sustain information and education campaigns. In a recent Philippine study, Mercado and Rodil-Ocampo (2023) reported that inter-local government cooperation in solid waste management becomes more effective when supported by sufficient financial resources and institutional collaboration. Likewise, OECD (2024) emphasized that sustained government financing allows local authorities to improve waste collection services, increase recycling efficiency, and expand investments in environmentally sustainable infrastructure.

Recent studies likewise highlight the importance of policy enforcement, capacity building, technical assistance, and infrastructure support as complementary dimensions of government support. UN-Habitat (2023) noted that effective implementation of environmental policies depends not only on the existence of local ordinances but also on consistent monitoring, enforcement mechanisms, and institutional commitment. Furthermore, He et al. (2024) emphasized that technical guidance, stakeholder collaboration, and continuous capacity-building initiatives improve local implementation of solid waste management programs by enhancing institutional competence and community participation. Adequate infrastructure, including materials recovery facilities, waste

collection vehicles, segregation facilities, and recycling centers, further enables local governments to implement waste management policies more efficiently and sustainably (Asian Development Bank, 2024).

Collectively, the reviewed literature demonstrates that government support is a multidimensional construct encompassing funding support, policy enforcement, capacity building, technical assistance, and infrastructure support. These dimensions complement one another in strengthening local environmental governance, improving community participation, and promoting the long-term sustainability of solid waste management programs. Consequently, the present study adopted these dimensions as indicators of government support in assessing their relationship with the sustainability of solid waste management programs implemented in top-performing barangays in one city in Negros Occidental.

Sustainability of Solid Waste Management Programs

Sustainability in solid waste management refers to the ability of waste management programs to continuously operate effectively while achieving environmental protection, social responsibility, economic efficiency, and institutional stability. A sustainable solid waste management system does not only focus on reducing waste generation and improving disposal practices but also ensures that programs remain functional and beneficial over the long term through cooperation among stakeholders, adequate resources, and effective governance mechanisms (Nguyen et al., 2023).

The concept of sustainability in solid waste management has expanded beyond traditional waste disposal approaches. Contemporary waste management systems emphasize waste prevention, recycling, resource recovery, circular economy practices, and stakeholder participation. These approaches recognize that waste management challenges cannot be solved solely through disposal facilities but require integrated strategies involving communities, governments, industries, and environmental organizations (Al Mamun et al., 2024).

Environmental sustainability is one of the major dimensions of sustainable solid waste management. It focuses on reducing pollution, protecting ecosystems, conserving natural resources, and minimizing the negative impacts of waste disposal. Effective waste segregation, recycling, composting, and proper disposal practices contribute to environmental sustainability by reducing landfill dependency and promoting resource conservation. According to Salsabila et al. (2022), communities that practice proper waste management behaviors contribute significantly to environmental improvement and the achievement of sustainable waste management goals.

Social sustainability is another important component because waste management programs depend heavily on public acceptance and participation. Programs become more sustainable when community members understand their responsibilities, participate in environmental activities, and develop a sense of ownership toward local waste management initiatives. Al Mamun et al. (2024) emphasized that community engagement promotes accountability and strengthens commitment among residents, increasing the likelihood that environmental programs will continue beyond their initial implementation period.

Economic sustainability involves ensuring that waste management programs have sufficient financial resources and operational mechanisms to continue functioning effectively. Sustainable programs require consistent funding for waste collection, transportation, recycling facilities, personnel training, and environmental education activities. Without adequate financial support, waste management initiatives may experience operational difficulties and fail to achieve their intended outcomes (Asian Development Bank [ADB], 2024).

Institutional sustainability refers to the capacity of government organizations and local institutions to maintain policies, programs, and services related to waste management. Strong institutional structures, effective leadership, continuous monitoring, and enforcement of environmental regulations are necessary to ensure program continuity. Mercado and Rodil-Ocampo (2023) emphasized that institutional capacity and collaboration among local government units are important factors in maintaining effective solid waste management systems in the Philippines.

In the Philippine setting, the sustainability of solid waste management programs remains closely associated with the implementation of Republic Act No. 9003. Although the law provides a comprehensive framework for

ecological solid waste management, successful implementation requires continuous cooperation among local governments, communities, and other stakeholders. Studies have shown that challenges such as inadequate funding, limited infrastructure, and inconsistent enforcement may affect the sustainability of local waste management initiatives (Camarillo & Bellotindos, 2022).

Recent studies further highlight that sustainable waste management requires integrated approaches that combine community participation and institutional support. Nguyen et al. (2023) found that sustainable waste management programs are characterized by stakeholder collaboration, effective policies, and active community involvement. Their findings suggest that sustainability is achieved when environmental programs are supported by both social commitment and institutional capacity.

Similarly, Cuizon (2025) emphasized that sustainability in solid waste management depends on collaborative governance among government agencies, communities, and other stakeholders. The study highlighted that programs become more sustainable when communities are involved in planning, implementation, and monitoring because participation creates ownership and strengthens long-term commitment.

Recent literature recognizes sustainability as the ultimate objective of solid waste management programs, emphasizing that environmental initiatives should generate long-term environmental, economic, social, and institutional benefits. Sustainable solid waste management extends beyond waste collection and disposal by promoting resource conservation, pollution prevention, circular economy practices, and resilient governance systems that can continuously respond to environmental challenges. According to the United Nations Environment Programme (2024), sustainable waste management requires integrated strategies that minimize environmental impacts while maximizing economic efficiency, social inclusion, and institutional effectiveness. Likewise, the United Nations Development Programme (2023) emphasized that sustainable environmental programs are achieved when local governments, communities, and other stakeholders work collaboratively to balance environmental protection with socioeconomic development.

Environmental sustainability remains the primary goal of solid waste management because it focuses on reducing pollution, conserving natural resources, and protecting ecosystems through effective waste reduction, segregation, recycling, composting, and proper disposal practices. Recent studies have shown that communities implementing integrated waste management strategies experience significant improvements in waste diversion, resource recovery, and environmental quality. He et al. (2024) reported that participatory waste management approaches strengthen environmental outcomes by encouraging community ownership, while UNEP (2024) highlighted that sustainable waste systems contribute substantially to climate change mitigation and biodiversity conservation through improved resource management and reduced greenhouse gas emissions.

Recent studies also demonstrate that sustainable solid waste management generates important economic and social benefits. Economically, efficient waste management systems reduce operational costs, encourage recycling enterprises, create employment opportunities, and support circular economy initiatives. Socially, sustainable waste management improves public health, strengthens environmental awareness, promotes community participation, and encourages responsible environmental behavior. The Organisation for Economic Co-operation and Development (2024) emphasized that investments in resource-efficient waste management not only improve environmental performance but also stimulate local economic development and create green employment opportunities. Similarly, the Asian Development Bank (2024) reported that sustainable waste management programs improve community resilience by strengthening public participation, environmental education, and inclusive local governance.

Institutional sustainability is likewise recognized as a critical dimension of successful solid waste management. Sustainable programs require effective leadership, policy continuity, adequate financial resources, monitoring mechanisms, technical capacity, and collaboration among government agencies, local communities, and private stakeholders. According to UN-Habitat (2023), institutional sustainability is achieved when local governments establish effective governance systems that ensure continuous implementation, monitoring, and evaluation of environmental programs. Likewise, Mercado and Rodil-Ocampo (2023) emphasized that strong institutional collaboration and inter-local government partnerships enhance the long-term implementation of solid waste management initiatives by improving coordination, resource sharing, and policy implementation.

Collectively, the reviewed literature demonstrates that sustainability is a multidimensional concept encompassing environmental, economic, social, and institutional dimensions. These dimensions are interrelated and collectively determine the long-term effectiveness of solid waste management programs. The consistent findings across international organizations and recent empirical studies provide a strong theoretical and empirical basis for adopting these four dimensions as indicators of sustainability in the present study. Furthermore, the reviewed literature served as the basis for developing the researcher-developed questionnaire used to assess the sustainability of solid waste management programs implemented in top-performing barangays in one city in Negros Occidental.

Community Participation and Sustainability

The relationship between community participation and sustainability of solid waste management programs has been widely recognized in environmental management literature. Studies consistently demonstrate that communities with higher levels of participation are more likely to maintain effective waste management practices because residents develop greater awareness, responsibility, and commitment toward environmental protection.

Community participation contributes to sustainability by encouraging behavioral changes necessary for proper waste management. Practices such as waste segregation, recycling, composting, and waste reduction require consistent participation from households and community members. According to Yusof et al. (2023), individuals who actively participate in environmental programs demonstrate stronger compliance with waste management policies and are more likely to support long-term sustainability initiatives.

Harnita (2025) further found that community participation significantly influences sustainable household waste management practices. The study revealed that residents' knowledge, attitudes, and awareness, combined with external support from government programs, contribute to improved waste management behavior. This suggests that participation serves as a bridge between environmental awareness and sustainable action.

Similarly, Al Mamun et al. (2024) emphasized that community engagement strengthens program sustainability by promoting ownership and collective responsibility. When residents perceive themselves as partners rather than merely beneficiaries of government programs, they become more committed to maintaining environmental initiatives.

Salsabila et al. (2022) also reported that public participation is a fundamental factor in sustainable solid waste management systems. Their findings showed that communities with greater involvement in waste segregation, recycling, and environmental activities demonstrate better waste management performance. The researchers concluded that participation enhances environmental responsibility and strengthens collective action.

In the Philippine context, community involvement is particularly important because many solid waste management activities are implemented at the barangay level. Barangay residents play a major role in waste segregation, compliance with environmental ordinances, and participation in clean-up activities. Therefore, strengthening community participation contributes directly to the continuity and effectiveness of local waste management programs (Camarillo & Bellotindos, 2022).

Recent literature consistently demonstrates that community participation is a significant determinant of the sustainability of solid waste management programs. Sustainable waste management extends beyond the implementation of government policies and infrastructure; it depends largely on the continuous participation of community members in waste segregation, recycling, volunteerism, environmental activities, and monitoring initiatives. Active citizen involvement strengthens environmental stewardship, promotes responsible waste management practices, and encourages collective ownership of environmental programs, thereby increasing their long-term sustainability.

Recent empirical evidence supports this relationship. Al Mamun et al. (2024) reported that communities with higher levels of citizen participation achieved more sustainable waste management outcomes because residents actively engaged in waste segregation, environmental campaigns, and community-based recycling initiatives.

Similarly, He et al. (2024) concluded that participatory approaches to solid waste management improve environmental performance and institutional sustainability by encouraging collaboration among local governments, community organizations, and residents throughout the planning, implementation, and evaluation of environmental programs.

In the Philippine context, Eugenio et al. (2024) found that public willingness to participate in community-based solid waste management programs significantly contributed to improving waste diversion practices and strengthening environmental responsibility among community members. Likewise, Edullantes et al. (2024) observed that community-based environmental education and participation programs enhanced environmental awareness, encouraged responsible waste management behaviors, and promoted sustained participation in local environmental initiatives. These findings suggest that communities with higher levels of participation are more likely to sustain solid waste management programs over time.

Furthermore, UNEP (2024) emphasized that sustainable waste management cannot be achieved through government intervention alone but requires continuous community engagement and shared responsibility among stakeholders. Community participation encourages behavioral change, strengthens compliance with environmental policies, and supports the institutionalization of sustainable waste management practices. Collectively, the reviewed literature indicates that community participation contributes significantly to the environmental, economic, social, and institutional sustainability of solid waste management programs. These findings provide a strong theoretical and empirical basis for examining the relationship between community participation and the sustainability of solid waste management programs in the present study.

The reviewed studies demonstrate that community participation is not only an activity within waste management programs but also a key mechanism that supports sustainability. Active participation improves compliance, strengthens environmental awareness, and promotes long-term program ownership. Therefore, community participation is expected to have a significant relationship with the sustainability of solid waste management programs.

Government Support and Sustainability

Government support is another important determinant of sustainable solid waste management. While community participation provides the behavioral foundation for waste management initiatives, government institutions provide the policies, resources, and organizational structures necessary to maintain these programs over time.

Effective government support contributes to sustainability through funding allocation, infrastructure development, policy implementation, technical assistance, and monitoring mechanisms. According to the United Nations Development Programme (2023), strong governance systems and institutional commitment are essential in maintaining environmental programs because they provide continuity and direction for long-term sustainability.

The role of local government units is particularly important because they are responsible for implementing solid waste management programs at the community level. Mercado and Rodil-Ocampo (2023) emphasized that local government capacity, cooperation, and institutional arrangements significantly influence the effectiveness of waste management services. Their findings suggest that stronger government systems lead to improved program implementation and sustainability.

Similarly, Kumar et al. (2024) found that government support through financial resources, infrastructure provision, and policy enforcement positively influences the sustainability of municipal waste management programs. Their study emphasized that government commitment creates favorable conditions for effective waste management practices.

The Asian Development Bank (2024) also highlighted that sustainable waste management requires continuous government investment in infrastructure, technology, and institutional development. Without adequate support, local waste management programs may struggle to maintain services and achieve long-term environmental objectives.

In the Philippines, government support remains essential due to the challenges faced by local governments in implementing RA 9003. Issues related to funding limitations, inadequate facilities, and enforcement challenges demonstrate the importance of stronger institutional support. Camarillo and Bellotindos (2022) noted that improving government assistance can increase community compliance and strengthen the sustainability of waste management programs.

Recent studies have demonstrated that government support significantly influences the environmental, economic, social, and institutional sustainability of waste management programs. According to the United Nations Environment Programme (2024), local governments that provide sustained financial investments, effective policy implementation, and institutional coordination are more successful in achieving long-term waste reduction, increased recycling rates, and improved environmental quality. Similarly, the Asian Development Bank (2024) emphasized that investments in waste collection systems, materials recovery facilities, technical expertise, and environmental education strengthen the resilience and sustainability of local waste management systems.

In the Philippine setting, Mercado and Rodil-Ocampo (2023) emphasized that inter-local government cooperation, institutional collaboration, and continuous policy support are essential for sustaining solid waste management initiatives. Their findings showed that successful implementation of waste management programs requires not only financial resources but also effective coordination among local government units, partner institutions, and community stakeholders. Likewise, Diola et al. (2024) reported that community-based waste diversion programs in urban barangays achieved better long-term outcomes when local governments consistently provided technical assistance, logistical support, and monitoring mechanisms to complement community participation.

Recent literature likewise highlights that policy enforcement and institutional capacity are fundamental components of sustainable environmental governance. UN-Habitat (2023) emphasized that local governments that consistently enforce environmental regulations, conduct regular monitoring, and strengthen institutional capacities are better positioned to sustain solid waste management initiatives over time. Furthermore, OECD (2024) reported that governments adopting integrated approaches combining financial support, infrastructure development, stakeholder collaboration, and continuous capacity-building achieve more resilient and sustainable waste management systems that respond effectively to emerging environmental challenges.

Collectively, the reviewed literature demonstrates that government support plays a vital role in sustaining solid waste management programs by providing the financial, institutional, technical, and regulatory mechanisms necessary for their continued implementation. The consistent findings across international organizations and Philippine studies indicate that stronger government support contributes significantly to environmental protection, efficient resource utilization, strengthened community participation, and institutional continuity. These findings provide a strong theoretical and empirical basis for examining the relationship between government support and the sustainability of solid waste management programs in the present study.

Overall, the literature establishes that government support significantly contributes to sustainable solid waste management. Policies, financial resources, infrastructure, and institutional commitment provide the foundation necessary for maintaining environmental programs. Therefore, government support is expected to influence the sustainability of solid waste management programs examined in this study.

RESEARCH METHODOLOGY

This chapter presents the research design, respondents, sampling procedures, research instrument, validity and reliability testing, data gathering procedures, ethical considerations, statistical treatment of data, and other methodological procedures employed in the conduct of the study.

Research Design

This study employed a quantitative research approach utilizing a descriptive-correlational research design. A quantitative approach was deemed appropriate because it enables researchers to collect numerical data, measure

variables objectively, and analyze them using statistical techniques to answer research questions and test relationships among variables. Quantitative research is particularly suitable for studies that seek to describe existing conditions and examine associations among measurable variables through systematic data collection and statistical analysis.

The study specifically adopted a descriptive-correlational research design because it aimed to determine the level of community participation, government support, and the sustainability of solid waste management programs, as well as to examine the significant relationships among these variables without manipulating them. Descriptive research is appropriate when the objective is to provide an accurate and systematic description of the characteristics, conditions, or perceptions of a population, whereas correlational research is used to determine the nature and strength of relationships among variables as they naturally occur.

The descriptive component of the study was utilized to determine the level of community participation in terms of waste segregation practices, volunteerism, environmental activities, and monitoring activities; the level of government support in terms of funding support, policy enforcement, capacity building, technical assistance, and infrastructure support; and the level of sustainability of solid waste management programs in terms of environmental, economic, social, and institutional sustainability. These variables were measured using a structured survey questionnaire, and the responses were summarized using appropriate descriptive statistical tools such as frequency counts, percentages, means, and standard deviations. Descriptive research provides a comprehensive picture of existing conditions without influencing or manipulating the variables being investigated.

The correlational component of the study was employed to determine whether significant relationships existed between community participation and the sustainability of solid waste management programs, and between government support and the sustainability of solid waste management programs. Correlational research examines whether variables are associated and measures the direction and strength of those relationships without implying causation. Because the study sought to determine the degree of association among naturally occurring variables rather than establish cause-and-effect relationships, a correlational design was considered the most appropriate research design.

Overall, the quantitative descriptive-correlational research design provided a systematic and objective framework for describing the respondents' perceptions and determining the relationships among community participation, government support, and the sustainability of solid waste management programs. Consequently, this design enabled the researcher to address all the specific objectives of the study and generate empirical evidence that may serve as a basis for strengthening solid waste management initiatives in top-performing barangays in one city in Negros Occidental.

Subject and Respondents of the Study

The subject and respondents of the study were 100 barangay officials from top-performing barangays in one city in Negros Occidental of 2026. These respondents consisted of barangay captains, barangay kagawads, barangay secretaries, barangay treasurers, Sangguniang Kabataan (SK) chairpersons, and SK kagawads. They were selected because they were directly involved in or knowledgeable about the planning, implementation, and monitoring of solid waste management programs within their respective barangays.

Population and Sample Size

The target population of the study consisted of 102 barangay officials from top performing barangays in one city in Negros Occidental. These officials included barangay captains, barangay kagawads, barangay secretaries, barangay treasurers, Sangguniang Kabataan (SK) chairpersons, and SK kagawads who were actively involved in barangay governance and environmental management initiatives.

During the actual data collection, only 100 barangay officials were able to participate because two (2) identified respondents were unavailable during the scheduled administration of the questionnaire. Consequently, the study

utilized the responses of the 100 officials who completed the survey, and these responses served as the basis for all statistical analyses.

Sampling Techniques

This study employed quota sampling, a non-probability sampling technique in which respondents were selected based on predetermined characteristics relevant to the objectives of the study. Specifically, the respondents were barangay captains, barangay kagawads, barangay secretaries, barangay treasurers, Sangguniang Kabataan (SK) chairpersons, and SK kagawads from top-performing barangays in one city in Negros Occidental.

The researcher initially identified 102 eligible barangay officials who met the inclusion criteria. However, during the scheduled data collection, two (2) officials were absent and were therefore unable to complete the questionnaire. As a result, the final sample consisted of 100 respondents, all of whom met the study's inclusion criteria and submitted complete questionnaires for analysis.

The use of quota sampling ensured that respondents possessed the knowledge and experience necessary to provide relevant information regarding community participation, government support, and the sustainability of solid waste management programs.

Data Gathering Instrument

The primary instrument used in this study was a researcher-developed structured questionnaire designed to gather quantitative data on community participation, government support, and the sustainability of solid waste management programs. The questionnaire was developed after an extensive review of recent literature, empirical studies, and policy documents related to solid waste management, environmental governance, community participation, and sustainable development.

The questionnaire was divided into four parts. Part I gathered the demographic profile of the respondents, including their position in the barangay.

Part II measured the level of community participation through four dimensions: waste segregation practices, volunteerism, environmental activities, and monitoring activities. The indicators were developed from recent literature emphasizing community engagement and participation in environmental management and solid waste management programs.

Part III assessed the level of government support in terms of funding support, policy enforcement, capacity building, technical assistance, and infrastructure support. These indicators were formulated based on current studies and international and national policy frameworks that identify government intervention as a critical factor in achieving effective and sustainable solid waste management.

Part IV measured the sustainability of solid waste management programs in terms of environmental sustainability, economic sustainability, social sustainability, and institutional sustainability. The indicators were derived from contemporary literature on sustainable development and local environmental governance, which recognizes these dimensions as essential components of program sustainability.

All items in Parts II, III, and IV were measured using a five-point Likert scale, where 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree. The responses reflected the respondents' level of agreement with each statement regarding community participation, government support, and the sustainability of solid waste management programs.

Validity and Reliability of the Instruments

The questionnaire was researcher-developed. The items were constructed from the indicators identified in the recent literature and empirical studies reviewed in Chapter 2, then validated by experts before administration.

To establish the content validity of the research instrument, the researcher subjected the questionnaire to expert evaluation using the Content Validity Ratio (CVR) developed by Lawshe (1975). The instrument was reviewed by five (5) experts with backgrounds in Public Administration, research methodology, environmental management, and statistics. The validators assessed each questionnaire item according to its relevance, clarity, and essentiality in measuring the constructs of community participation, government support, and the sustainability of solid waste management programs (Appendix D).

Each validator classified every questionnaire item as Essential, Useful but Not Essential, or Not Necessary. The ratings were then analyzed using the Content Validity Ratio (CVR), which determines the degree of agreement among experts regarding the essentiality of each item. For a panel of five validators, Lawshe's original criterion requires that all five experts identify an item as essential to achieve the minimum acceptable CVR value for inclusion.

The validation results revealed that all items under the three major variables met the required criterion. Specifically, the Community Participation scale obtained a Mean CVR of 1.00, indicating that all twenty (20) items were unanimously considered essential by the panel of experts. Similarly, the Government Support scale achieved a Mean CVR of 1.00, with all twenty-five (25) items receiving unanimous essential ratings. Likewise, the Sustainability of Solid Waste Management Programs scale obtained a Mean CVR of 1.00, demonstrating complete agreement among the validators that all twenty (20) items were essential for measuring the intended construct (Appendix D).

These findings indicate excellent content validity of the research instrument. The unanimous agreement among the validators demonstrates that the questionnaire items are relevant, appropriate, and representative of the concepts being measured. Consequently, no questionnaire items were eliminated during the validation process, although minor editorial revisions were incorporated to improve clarity and readability based on the validators' recommendations.

Overall, the results confirm that the research instrument possesses strong content validity and is appropriate for measuring community participation, government support, and the sustainability of solid waste management programs. Therefore, the validated questionnaire was considered suitable for pilot testing and subsequent administration to the study respondents.

Prior to the actual conduct of the study, a pilot test was undertaken to determine the reliability and internal consistency of the research instrument. Pilot testing is a preliminary administration of the questionnaire to a group of respondents who possess characteristics similar to those of the target population, but who are not included in the actual study. The primary purpose of pilot testing is to identify ambiguous questions, assess the clarity of the items, and evaluate the consistency of the instrument before the final data collection.

For this study, the researcher selected 30 respondents from barangays with characteristics like those of the intended respondents using purposive sampling. These respondents were excluded from the actual survey to prevent bias in the final data collection. After administering the questionnaire, the responses were encoded and analyzed using Cronbach's alpha coefficient to determine the internal consistency reliability of each construct and of the questionnaire as a whole.

Cronbach's alpha is one of the most widely used measures of reliability for Likert-scale instruments because it determines the extent to which the items in a questionnaire consistently measure the same construct. The coefficient ranges from 0 to 1, with higher values indicating greater internal consistency.

Data Gathering Procedures

The researcher followed a systematic procedure in gathering the necessary data.

First, a letter requesting permission to conduct the study was submitted to the concerned authorities, including the barangay officials of top performing barangays in one city in Negros Occidental (Appendix B).

Upon approval of the request, the researcher coordinated with the barangay officials regarding the schedule for the distribution and retrieval of the questionnaires. The purpose of the study was explained to the respondents, and informed consent was obtained prior to their participation.

The questionnaires were then personally administered to the respondents. The researcher provided instructions on how to accomplish the questionnaire and addressed any questions or clarifications raised by the respondents during the data collection process.

After the completed questionnaires were retrieved, the responses were checked for completeness and accuracy. The collected data were then organized, tabulated, encoded, and prepared for statistical analysis (Appendix D).

Confidentiality and anonymity of the respondents was strictly maintained, and all information obtained was used solely for research purposes.

Data Analyses

The data gathered from the respondents were organized, tabulated, encoded, and analyzed using appropriate statistical tools aligned with the Statements of the Problem of the study. The following statistical treatments were employed to analyze and interpret the data collected.

To determine the level of community participation in solid waste management programs, the Mean and Standard Deviation were used.

The arithmetic mean was used to determine the average level of community participation, government support, and the sustainability of solid waste management programs based on the responses of the participants.

The formula for the mean is:

$$\bar{X} = \frac{\sum X}{N}$$

Where:

- $\bar{X}$ = Mean
- $\sum X$ = Sum of all scores
- N = Total number of respondents

The computed mean values were interpreted using the following descriptive scale:

Mean Range	Descriptive Interpretation
4.21–5.00	Very High
3.41–4.20	High
2.61–3.40	Moderate
1.81–2.60	Low
1.00–1.80	Very Low

The standard deviation was used together with the mean to determine the variability or consistency of the respondents' ratings. A lower standard deviation indicates that the responses are clustered closely around the mean, while a higher standard deviation indicates greater variation among responses.

The formula is:

$$SD = \sqrt{\frac{\sum (X - \bar{X})^2}{N - 1}}$$

Where:

- **SD** = Standard deviation
- **X** = Individual score
- $\bar{X}$ = Mean
- **N** = Number of respondents

The standard deviation helped describe the degree of agreement or variability in the respondents' assessments of the study variables.

The following scale used in interpreting the computed mean scores:

Scale	Mean Score Range	Interpretation	Verbal Description
5	4.21–5.00	Very High	The indicator is manifested to a very great extent.
4	3.41–4.20	High	The indicator is manifested to a great extent.
3	2.61–3.40	Moderate	The indicator is manifested to a moderate extent.
2	1.81–2.60	Low	The indicator is manifested to a slight extent.
1	1.00–1.80	Very Low	The indicator is manifested to a very slight extent.

To determine whether a significant relationship existed between community participation and the sustainability of solid waste management programs, the Spearman Rank-Order Correlation Coefficient (Spearman's rho) was used (Appendix D).

The formula for Spearman's rho is:

$$r_s = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

Where:

- r_s = Spearman's rank-order correlation coefficient
- d = Difference between paired ranks
- n = Number of paired observations

The resulting correlation coefficients were interpreted as follows:

Correlation Coefficient (ρ)	Interpretation
± 0.90 to ± 1.00	Very Strong
± 0.70 to ± 0.89	Strong
± 0.40 to ± 0.69	Moderate
± 0.20 to ± 0.39	Weak
± 0.00 to ± 0.19	Very Weak

Spearman's rho was employed to determine the strength and direction of the relationship between the two variables. This statistical tool was considered appropriate because the study utilized five-point Likert-scale responses and the results of the normality test indicated that the data did not fully satisfy the assumptions required for parametric correlation analysis.

The significance of the computed correlation coefficient was tested at the 0.05 level of significance. If the computed p-value was less than 0.05, the null hypothesis was rejected, indicating a significant relationship between the variables. If the p-value was greater than 0.05, the null hypothesis failed to be rejected, indicating no significant relationship.

Presentation, Analysis, And Interpretation Of Data

This chapter presents the analysis and interpretation of the data gathered from the respondents regarding community participation, government support, and the sustainability of solid waste management programs in top performing barangays in one city in Negros Occidental. The presentation of the findings follows the sequence of the Statement of the Problem.

Level of Community Participation in Solid Waste Management Programs as a whole and in terms of Waste Segregation Practices, Volunteerism, Environmental Activities, and Monitoring Activities.

Table 1 below shows the level of community participation in solid waste management programs as a whole and in terms of waste segregation practices, volunteerism, environmental activities, and monitoring activities.

Table 1. Level of Community Participation in Solid Waste Management Programs as a whole and in terms of Waste Segregation Practices, Volunteerism, Environmental Activities, and Monitoring Activities.

Statements	Mean	SD	Interpretation
Waste Segregation Practices	4.44	0.33	Very High
1. I segregate waste at home.	4.54	0.63	Very High
2. I separate biodegradable and non-biodegradable waste.	4.42	0.71	Very High
3. I practice recycling whenever possible.	4.38	0.63	Very High
4. I comply with barangay waste collection procedures.	4.43	0.73	Very High
5. I encourage household members to segregate waste.	4.41	0.64	Very High
Volunteerism	4.37	0.29	Very High
1. I participate in clean-up drives.	4.41	0.62	Very High
2. I volunteer in environmental activities.	4.39	0.63	Very High
3. I support barangay environmental campaigns.	4.35	0.67	Very High
4. I am willing to volunteer in future programs.	4.37	0.71	Very High
5. I encourage others to participate in environmental activities.	4.34	0.68	Very High
Environmental Activities	4.36	0.29	Very High
1. I attend environmental seminars and meetings.	4.31	0.71	Very High
2. I participate in recycling activities.	4.33	0.68	Very High
3. I support environmental awareness campaigns.	4.40	0.60	Very High
4. I join community environmental projects.	4.40	0.68	Very High
5. I actively promote environmental protection.	4.37	0.71	Very High
Monitoring Activities	4.44	0.31	Very High
1. I report illegal dumping when observed.	4.51	0.67	Very High
2. I help monitor compliance with waste regulations.	4.41	0.65	Very High
3. I encourage neighbors to follow waste policies.	4.43	0.66	Very High
4. I participate in discussions on environmental issues.	4.38	0.65	Very High
5. I support barangay monitoring efforts.	4.47	0.63	Very High
Community Participation (As a whole)	4.40	0.16	Very High

Legend: (4.21 – 5.00)-Very High; (3.41 – 4.20)-High; (2.61 – 3.40)-Moderate; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 2 presents the respondents' level of community participation in solid waste management programs in terms of waste segregation practices, volunteerism, environmental activities, and monitoring activities. Overall, the results reveal a very high level of community participation with a grand mean of 4.40 (SD = 0.16). This indicates that the respondents consistently participate in activities that support proper solid waste management in their community. The relatively low standard deviation further suggests that the responses were generally consistent, reflecting a shared commitment among community members toward environmental protection and waste management initiatives.

Among the four dimensions, Waste Segregation Practices obtained the highest mean of 4.44 (SD = 0.33), interpreted as very high. This finding suggests that respondents regularly practice proper waste segregation in their households. Specifically, the statement "I segregate waste at home" received the highest mean (M = 4.54, SD = 0.63), indicating that waste segregation has become a common household practice. Respondents also reported very high compliance with barangay waste collection procedures (M = 4.43) and proper separation of biodegradable and non-biodegradable waste (M = 4.42). These findings imply that residents recognize the importance of waste segregation as a fundamental step in effective solid waste management and demonstrate responsibility in managing household waste.

Monitoring Activities also recorded a very high level of participation with a mean of 4.44 (SD = 0.31). This indicates that respondents actively support the implementation and enforcement of waste management policies within their community. The highest-rated statement in this dimension was "I report illegal dumping when observed" (M = 4.51, SD = 0.67), suggesting that many respondents are willing to take action against improper waste disposal practices. Likewise, respondents expressed strong support for barangay monitoring efforts (M = 4.47, SD = 0.63) and encouraging neighbors to comply with waste management policies (M = 4.43, SD = 0.66). These results suggest that community members not only practice proper waste management themselves but also contribute to maintaining environmental cleanliness by promoting accountability among fellow residents.

Meanwhile, Volunteerism obtained a mean score of 4.37 (SD = 0.29), which is likewise interpreted as very high. This indicates that respondents actively participate in community-based environmental initiatives. The highest-rated statement, "I participate in clean-up drives" (M = 4.41, SD = 0.62), reflects the respondents' willingness to engage in activities that directly improve community cleanliness. Participation in environmental activities (M = 4.39, SD = 0.63) and support for barangay environmental campaigns (M = 4.35, SD = 0.67) also received very high ratings. Although this dimension recorded a slightly lower mean compared with waste segregation and monitoring activities, the findings still demonstrate that respondents value collective action and are willing to contribute their time and effort to environmental programs.

Similarly, Environmental Activities achieved a very high rating with a mean of 4.36 (SD = 0.29). This suggests that respondents are actively involved in activities that promote environmental awareness and sustainability. The highest-rated statements were "I support environmental awareness campaigns" and "I join community environmental projects" (both M = 4.40, SD = 0.68), indicating that respondents recognize the importance of participating in community efforts that promote environmental conservation. Attendance at environmental seminars and meetings received the lowest mean in this dimension (M = 4.31, SD = 0.71), although it still falls within the very high category. This may suggest that while respondents strongly support environmental initiatives, attendance at formal educational activities may depend on factors such as time availability, work schedules, or accessibility.

Overall, the findings indicate that community members exhibit a strong sense of environmental responsibility through consistent waste segregation, active participation in monitoring activities, volunteer work, and involvement in environmental programs. The uniformly very high ratings across all dimensions suggest that solid waste management initiatives in the community have been well accepted and supported by residents. Such a high level of participation is encouraging because community involvement is widely recognized as one of the key factors in the successful implementation of sustainable solid waste management programs. The results imply

that respondents not only understand the importance of proper waste management but also translate this understanding into meaningful environmental practices and active participation in community initiatives.

The present findings are consistent with several studies discussed in Chapter 2, which emphasize that community participation is a fundamental element of effective and sustainable solid waste management. Diola et al. (2024) reported that active participation in waste segregation, environmental campaigns, and community-based monitoring significantly improves the implementation and long-term success of solid waste management programs. Likewise, the OECD (2024) emphasized that sustainable waste management is achieved when local communities actively participate in environmental decision-making and consistently practice proper waste management behaviors. Similarly, UN-Habitat (2023) highlighted that meaningful community engagement strengthens environmental governance by promoting shared responsibility, increasing public awareness, and encouraging compliance with local environmental policies. These studies support the present findings, indicating that the respondents' very high level of participation reflects their commitment to environmental stewardship and contributes to the successful implementation of solid waste management initiatives.

This finding supports the Theory of Planned Behavior, which posits that individuals are more likely to perform environmentally responsible behaviors when they possess favorable attitudes, perceive social support, and believe they are capable of carrying out such practices. Likewise, the result is consistent with the Stakeholder Theory, which emphasizes that sustainable environmental programs are achieved when community members actively participate alongside local government units in implementing public programs. The finding also aligns with the principles of Sustainable Development Theory, which recognizes proper waste segregation as an essential strategy for reducing environmental degradation and promoting long-term environmental sustainability.

Level of Government Support as a whole and in terms of Funding Support, Policy Enforcement, Capacity Building, Technical Assistance, and Infrastructure Support

Table 2 below shows the level of government support as a whole and in terms of funding support, policy enforcement, capacity building, technical assistance, and infrastructure support.

Table 2. Level of Government Support as a whole and in terms of Funding Support, Policy Enforcement, Capacity Building, Technical Assistance, and Infrastructure Support.

Statements	Mean	SD	Interpretation
Funding Support	4.38	0.28	Very High
1. The LGU allocates sufficient funds for waste management.	4.29	0.71	Very High
2. Environmental projects receive adequate financial support.	4.48	0.64	Very High
3. Resources are available for waste management activities.	4.40	0.68	Very High
4. Funding is sustained over time.	4.32	0.66	Very High
5. Financial support contributes to program success.	4.41	0.60	Very High
Policy Enforcement	4.42	0.33	Very High
1. Waste management ordinances are properly enforced.	4.39	0.65	Very High
2. Violators are sanctioned appropriately.	4.46	0.66	Very High
3. Compliance is regularly monitored.	4.46	0.64	Very High
4. Policies are clearly communicated to residents.	4.35	0.77	Very High
5. Policy enforcement promotes responsible behavior.	4.43	0.62	Very High
Table 2 Continuation.			
Capacity Building	4.39	0.30	Very High
1. The LGU provides training on waste management.	4.26	0.68	Very High
2. Residents are given environmental education opportunities.	4.44	0.67	Very High
3. Capacity-building programs improve participation.	4.33	0.71	Very High
4. Training activities are accessible.	4.32	0.65	Very High
5. Environmental seminars improve community knowledge.	4.59	0.59	Very High
Technical Assistance	4.37	0.32	Very High

1. The LGU provides technical guidance on waste management.	4.31	0.69	Very High
2. Experts assist in implementing environmental programs.	4.44	0.67	Very High
3. Residents receive support on proper waste practices.	4.44	0.72	Very High
4. Technical assistance improves implementation.	4.25	0.76	Very High
5. Technical support is readily available.	4.39	0.63	Very High
Infrastructure Support	4.39	0.33	Very High
1. Adequate waste bins and facilities are available.	4.32	0.69	Very High
2. Materials Recovery Facilities are accessible.	4.34	0.68	Very High
3. Waste collection services are reliable.	4.47	0.66	Very High
4. Necessary equipment is provided.	4.33	0.68	Very High
5. Infrastructure supports effective waste management.	4.47	0.59	Very High
Government Support (As a whole)	4.39	0.13	Very High

Legend: (4.21 – 5.00)-Very High; (3.41 – 4.20)-High; (2.61 – 3.40)-Moderate; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 2 presents the respondents' assessment of the level of government support for solid waste management programs in terms of funding support, policy enforcement, capacity building, technical assistance, and infrastructure support. The results indicate an overall mean of 4.39 (SD = 0.13), interpreted as very high. This suggests that respondents generally perceive the local government as providing strong and consistent support for the implementation of solid waste management programs. The low standard deviation indicates that respondents shared relatively similar perceptions regarding the government's role in supporting environmental initiatives.

Among the five dimensions, Policy Enforcement obtained the highest mean of 4.42 (SD = 0.33), with a verbal interpretation of very high. This finding indicates that respondents believe waste management policies and ordinances are effectively implemented within the community. The statements *"Violators are sanctioned appropriately"* and *"Compliance is regularly monitored"* both received the highest mean of 4.46 (SD = 0.66; SD = 0.64, respectively), suggesting that respondents recognize the local government's efforts to ensure accountability and adherence to environmental regulations. Likewise, respondents agreed that policy enforcement promotes responsible behavior (M = 4.43, SD = 0.62) and that waste management ordinances are properly enforced (M = 4.39, SD = 0.65). Although the statement regarding the clear communication of policies to residents obtained the lowest mean in this dimension (M = 4.35, SD = 0.77), it still falls within the very high category, indicating that respondents generally consider government communication regarding waste management policies to be effective.

Capacity Building followed closely with an overall mean of 4.39 (SD = 0.30), also interpreted as very high. This result suggests that the local government actively enhances the knowledge and skills of residents through training and environmental education programs. The highest-rated statement, *"Environmental seminars improve community knowledge,"* obtained a mean of 4.59 (SD = 0.59), indicating that respondents highly value educational initiatives in increasing environmental awareness. Similarly, providing residents with environmental education opportunities (M = 4.44, SD = 0.67) and implementing capacity-building programs that encourage participation (M = 4.33, SD = 0.71) were also rated very highly. Although the provision of training specifically on waste management received the lowest mean (M = 4.26, SD = 0.68), respondents still perceived this support positively, reflecting the government's continued efforts to strengthen community competence in environmental management.

Similarly, Infrastructure Support recorded an overall mean of 4.39 (SD = 0.33), interpreted as very high. This indicates that respondents believe the government provides adequate facilities and equipment necessary for effective waste management. The statement *"Infrastructure supports effective waste management"* received the highest mean (M = 4.47, SD = 0.59), highlighting the importance of physical resources in promoting proper waste disposal practices. Respondents also highly agreed that materials for recycling are accessible (M = 4.34, SD = 0.68), waste collection services are reliable (M = 4.47, SD = 0.66), and necessary equipment is provided

($M = 4.33$, $SD = 0.68$). These findings suggest that the availability of infrastructure has contributed positively to the successful implementation of solid waste management programs within the community.

Meanwhile, Funding Support obtained a mean of 4.38 ($SD = 0.28$), which is likewise interpreted as very high. This finding indicates that respondents perceive the local government as providing sufficient financial resources for waste management initiatives. The statement "Environmental projects receive adequate financial support" received the highest mean ($M = 4.48$, $SD = 0.64$), reflecting respondents' confidence in the government's investment in environmental programs. Financial support contributing to program success ($M = 4.41$, $SD = 0.60$) and the availability of resources for waste management activities ($M = 4.40$, $SD = 0.68$) also received very high ratings.

Although the statement regarding the allocation of sufficient funds for waste management obtained the lowest mean ($M = 4.29$, $SD = 0.71$), it remained within the very high category, suggesting that respondents generally believe funding is adequate, although there may still be opportunities to enhance financial allocation for environmental programs.

Lastly, Technical Assistance obtained the lowest overall mean among the five dimensions at 4.37 ($SD = 0.32$), although it was still interpreted as very high. This suggests that respondents recognize the government's efforts in providing technical guidance and expert support for waste management activities. The highest-rated statements, "Experts assist in implementing environmental programs" and "Residents receive support on proper waste practices," both obtained a mean of 4.44, indicating that respondents appreciate the availability of technical expertise and guidance. The availability of technical support ($M = 4.39$, $SD = 0.63$) and technical guidance on waste management ($M = 4.31$, $SD = 0.69$) also received positive evaluations. The statement "Technical assistance improves implementation" recorded the lowest mean ($M = 4.25$, $SD = 0.76$), but it still falls within the Very High interpretation, indicating that respondents generally perceive technical assistance as beneficial in strengthening waste management initiatives.

Overall, the findings demonstrate that respondents perceive a very high level of government support across all dimensions of solid waste management. Strong policy enforcement, adequate funding, continuous capacity-building initiatives, technical guidance, and sufficient infrastructure collectively contribute to the successful implementation of waste management programs within the community. These results imply that the local government has established an enabling environment that encourages community participation and promotes environmentally responsible practices. The consistently high ratings across all indicators further suggest that government initiatives have gained the trust and support of community members, reinforcing the importance of sustained institutional commitment in achieving effective and sustainable solid waste management.

The present findings are supported by the empirical studies discussed in Chapter 2, which emphasize that government support is a critical factor in the successful implementation and long-term sustainability of solid waste management programs. Mercado and Rodil-Ocampo (2023) found that strong local government support through policy implementation, resource allocation, and institutional collaboration significantly enhances the effectiveness of community-based environmental programs. Likewise, the Asian Development Bank (2024) emphasized that adequate investments in waste management infrastructure, continuous technical assistance, and capacity-building initiatives enable local governments to improve environmental services and achieve sustainable waste management outcomes. Similarly, the OECD (2024) reported that effective policy enforcement, sufficient financial resources, and collaborative governance strengthen compliance with environmental regulations and promote greater community participation in waste management initiatives. These studies support the present findings, indicating that the respondents' assessment of a very high level of government support reflects the local government's commitment to implementing comprehensive and sustainable solid waste management programs.

The findings of this study are consistent with the principles of Stakeholder Theory developed by Freeman (1984), which emphasizes that the success of community-based initiatives depends on the active involvement, cooperation, and shared responsibility of various stakeholders. In the context of solid waste management, the local government serves as a significant stakeholder that provides essential support through policy enforcement, funding allocation, capacity-building initiatives, technical assistance, and infrastructure development. The very

high level of government support perceived by the respondents reflects the importance of strong institutional participation in creating an enabling environment for effective waste management implementation.

Moreover, the findings support the principles of Sustainable Development Theory (Brundtland, 1987), which highlights the importance of balancing environmental protection, social responsibility, and resource management to achieve long-term sustainability. The high ratings obtained across the dimensions of government support suggest that continued institutional commitment and provision of necessary resources contribute to maintaining sustainable solid waste management programs that benefit both present and future generations.

Level of Sustainability of Solid Waste Management Programs as a whole and in terms of Environmental Sustainability, Economic Sustainability, Social Sustainability, and Institutional Sustainability.

Table 3 below shows the level of sustainability of solid waste management programs as a whole and in terms of environmental sustainability, economic sustainability, social sustainability, and institutional sustainability.

Table 3. Level of Sustainability of solid waste management programs as a whole and in terms of Environmental Sustainability, Economic Sustainability, Social Sustainability, and Institutional Sustainability.

Statements	Mean	SD	Interpretation
Environmental Sustainability	4.40	0.32	Very High
1. The program reduces pollution.	4.35	0.72	Very High
2. The program promotes recycling.	4.52	0.61	Very High
3. The program encourages conservation of resources.	4.35	0.66	Very High
4. The program improves environmental quality.	4.35	0.64	Very High
5. The program contributes to long-term environmental protection.	4.42	0.67	Very High
Economic Sustainability	4.38	0.31	Very High
1. The program utilizes resources efficiently.	4.49	0.61	Very High
2. The program is financially viable.	4.32	0.68	Very High
3. The program minimizes waste management costs.	4.38	0.63	Very High
4. Resources are managed effectively.	4.39	0.68	Very High
5. The program can continue despite budget challenges.	4.34	0.65	Very High
Social Sustainability	4.32	0.30	Very High
1. The community supports the program.	4.36	0.70	Very High
2. The program strengthens social responsibility.	4.30	0.72	Very High
3. The program increases public awareness.	4.30	0.63	Very High
4. Stakeholders actively participate.	4.23	0.71	Very High
5. The program promotes community cooperation.	4.42	0.70	Very High
Institutional Sustainability	4.40	0.32	Very High
1. Local leaders remain committed to the program.	4.38	0.66	Very High
2. Policies supporting waste management are sustained.	4.53	0.61	Very High
3. Government agencies continue providing support.	4.38	0.71	Very High
4. Management systems remain effective.	4.32	0.76	Very High
5. The program is likely to continue in the future.	4.40	0.60	Very High
Sustainability of Solid Waste Management Programs (As a whole)	4.38	0.16	Very High

Legend: (4.21 – 5.00)-Very High; (3.41 – 4.20)-High; (2.61 – 3.40)-Moderate; (1.81 – 2.60)-Low; (1.00 – 1.80)-Very Low

Table 3 presents the respondents' assessment of the sustainability of solid waste management programs in terms of environmental sustainability, economic sustainability, social sustainability, and institutional sustainability. Overall, the findings reveal a very high level of sustainability, with a grand mean of 4.38 (SD = 0.16). This

indicates that respondents perceive the solid waste management programs implemented in the community as sustainable across various dimensions. The relatively low standard deviation further suggests that respondents shared similar perceptions regarding the long-term effectiveness and continuity of these programs.

Among the four dimensions, Environmental Sustainability obtained the highest mean of 4.40 (SD = 0.32), interpreted as very high. This finding suggests that respondents strongly believe the solid waste management program contributes positively to environmental conservation and protection. The highest-rated statement, "*The program reduces pollution*," received a mean of 4.35 (SD = 0.72), indicating that respondents recognize the program's role in minimizing environmental pollution. Likewise, the promotion of recycling (M = 4.52, SD = 0.61), conservation of resources (M = 4.35, SD = 0.66), improvement of environmental quality (M = 4.35, SD = 0.64), and contribution to long-term environmental protection (M = 4.42, SD = 0.67) all received very high ratings. These findings imply that the community views the program as an effective strategy for preserving natural resources and maintaining environmental quality, reinforcing its importance in achieving sustainable environmental management.

Institutional Sustainability also achieved a very high rating, with an overall mean of 4.40 (SD = 0.32). This indicates that respondents have confidence in the ability of local institutions to sustain waste management initiatives over time. The highest-rated statement, "Policies supporting waste management are sustained," obtained a mean of 4.53 (SD = 0.61), reflecting respondents' belief that existing policies continue to support effective program implementation. Similarly, respondents agreed that local leaders remain committed to the program (M = 4.38, SD = 0.67), government agencies continue providing support (M = 4.38, SD = 0.71), management systems remain effective (M = 4.32, SD = 0.76), and the program is likely to continue in the future (M = 4.40, SD = 0.60). These results suggest that institutional commitment, leadership, and policy continuity are viewed as essential factors that strengthen the long-term sustainability of solid waste management programs.

Meanwhile, Economic Sustainability recorded an overall mean of 4.38 (SD = 0.31), which is also interpreted as very high. This finding indicates that respondents believe the program effectively utilizes available resources while remaining financially sustainable. The statement "The program utilizes resources efficiently" received the highest mean (M = 4.49, SD = 0.61), suggesting that respondents perceive efficient resource management as one of the strengths of the program. The statements concerning minimizing waste management costs (M = 4.38, SD = 0.63), effective management of resources (M = 4.39, SD = 0.68), and the program's ability to continue despite budget challenges (M = 4.34, SD = 0.65) were likewise rated very highly. Although financial viability received the lowest mean within this dimension (M = 4.32, SD = 0.68), it remained under the very high interpretation, indicating that respondents generally believe the program has adequate financial stability to support its long-term implementation.

Similarly, Social Sustainability obtained a mean of 4.32 (SD = 0.30), interpreted as very high. Although it registered the lowest mean among the four dimensions, the results still indicate that respondents perceive strong community involvement and social support for the program. The highest-rated statement, "The program promotes community cooperation," obtained a mean of 4.42 (SD = 0.70), highlighting the importance of collaboration among community members in sustaining environmental initiatives. Respondents also agreed that the community supports the program (M = 4.36, SD = 0.70), the program strengthens social responsibility (M = 4.30, SD = 0.72), increases public awareness (M = 4.30, SD = 0.63), and encourages active participation (M = 4.23, SD = 0.71). While active participation received the lowest mean in this dimension, it still falls within the very high category, suggesting that residents remain actively engaged in waste management activities and recognize their collective responsibility in protecting the environment.

Overall, the findings indicate that respondents perceive the solid waste management programs as highly sustainable across environmental, economic, social, and institutional dimensions. The consistently very high ratings suggest that the programs have established a strong foundation for long-term implementation through effective environmental practices, prudent resource management, active community participation, and sustained government and institutional support. These results imply that the integration of these four sustainability dimensions contributes significantly to the continued success of solid waste management initiatives and promotes lasting environmental stewardship within the community.

The findings are consistent with sustainability frameworks and previous studies, which emphasize that effective solid waste management programs require a balance among environmental protection, economic viability, social participation, and institutional support.

Programs that encourage resource conservation, promote efficient use of financial and physical resources, foster active community involvement, and maintain strong government commitment are more likely to achieve long-term success. The very high ratings across all four dimensions suggest that the existing waste management programs are not only effective in addressing current environmental concerns but also possess the necessary conditions to remain sustainable in the future.

The findings of the present study are consistent with the empirical literature reviewed in Chapter 2, which emphasizes that the sustainability of solid waste management programs depends on the combined efforts of the community and the local government. The OECD (2024) emphasized that sustainable waste management is achieved through an integrated approach that combines environmental protection, efficient resource utilization, community participation, and strong institutional governance. Likewise, the Asian Development Bank (2024) reported that investments in environmental infrastructure, continuous capacity-building initiatives, and effective policy implementation enable local government units to sustain waste management programs and improve environmental quality. Similarly, UN-Habitat (2023) highlighted that environmentally sustainable communities are characterized by active stakeholder participation, effective governance, and institutional commitment, while Mercado and Rodil-Ocampo (2023) emphasized that sustained collaboration among local government units, community organizations, and other stakeholders strengthens the long-term implementation of environmental programs. These studies support the present findings, indicating that the respondents' assessment of a very high level of sustainability reflects the effective implementation of solid waste management initiatives and the collective commitment of both the local government and the community toward achieving long-term environmental sustainability.

The findings of this study are consistent with the principles of Sustainable Development Theory as advanced by Brundtland (1987), which emphasizes the need to achieve a balance among environmental protection, economic development, and social responsibility to ensure that present needs are met without compromising the ability of future generations to meet their own needs. The very high ratings obtained across the four dimensions of sustainability demonstrate that the solid waste management programs have incorporated essential elements of sustainable development, including environmental conservation, efficient resource utilization, community involvement, and institutional continuity.

Furthermore, the findings support the perspective of Stakeholder Theory by Freeman (1984), which highlights that sustainable outcomes are achieved through the cooperation and shared responsibility of different stakeholders. The high assessment of institutional and social sustainability indicates that the continued involvement of local government institutions, barangay leaders, and community members plays an important role in maintaining the effectiveness and continuity of solid waste management initiatives. These findings suggest that sustainability is strengthened when stakeholders collectively contribute to environmental protection, responsible resource management, and long-term program implementation.

Relationship between Community Participation and Sustainability of Solid Waste Management Programs.

Table 4 below shows the relationship between community participation and sustainability of solid waste management programs.

Table 4. Relationship between Community Participation and Sustainability of Solid Waste Management Programs.

Variable	Test Statistics (r_s)	p-value	Decision for H_0	Interpretation
Level of Community Participation vs.	0.063	0.534	Fail to Reject H_0	Not Significant

Level of Sustainability of Solid Waste Management Programs				
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Table 4 presents the results of the test of relationship between the level of community participation and the sustainability of solid waste management programs. The analysis yielded a Spearman's rank correlation coefficient (r_s) of 0.063 with a p-value of 0.534. Since the obtained p-value is greater than the 0.05 level of significance, the null hypothesis was not rejected. Therefore, the results indicate that there is no statistically significant relationship between community participation and the sustainability of solid waste management programs.

The correlation coefficient of 0.063 indicates a very weak positive relationship between the two variables. However, this relationship is too small to be considered statistically meaningful. This suggests that although respondents reported very high levels of community participation and very high perceptions of sustainability, variations in community participation were not associated with corresponding changes in the perceived sustainability of the solid waste management programs.

One possible explanation for this finding is that the sustainability of solid waste management programs may depend on several factors beyond community participation alone. While residents actively engage in waste segregation, volunteer activities, environmental initiatives, and monitoring efforts, the long-term sustainability of these programs may also be influenced by institutional commitment, government support, adequate funding, effective policy implementation, technical assistance, and the availability of infrastructure. As reflected in the previous tables, these factors were likewise rated very highly, suggesting that sustainability is achieved through the combined efforts of multiple stakeholders rather than through community participation alone.

Furthermore, the uniformly high ratings for both community participation and sustainability may have limited the variability of the responses. When respondents generally provide similarly high ratings across variables, statistical correlation tends to become weaker because there is little variation to establish a measurable relationship. Thus, although respondents consistently demonstrated active participation and viewed the programs as sustainable, the statistical analysis did not detect a significant association between the two variables.

Overall, the findings suggest that the sustainability of solid waste management programs cannot be attributed solely to community participation. Instead, sustainability appears to result from a combination of community involvement, government support, effective policies, sufficient resources, and institutional commitment. This highlights the importance of maintaining collaborative efforts among local government units, community members, and other stakeholders to ensure the continued success and sustainability of solid waste management initiatives.

Relationship between Government Support and Sustainability of Solid Waste Management Programs.

Table 5 below shows the relationship between government support and sustainability of solid waste management programs.

Table 5. Relationship between Government Support and Sustainability of Solid Waste Management Programs.

Variable	Test Statistics	p-value	Decision for H_0	Interpretation
Level of Government Support vs.	-0.200*	0.046	Reject H_0	Significant
Level of Sustainability of Solid Waste Management Programs				

Table 5 presents the results of the test of relationship between the level of government support and the sustainability of solid waste management programs. The analysis yielded a Spearman's rank correlation

coefficient (r_s) of -0.200 with a p-value of 0.046. Since the computed p-value is less than the 0.05 level of significance, the null hypothesis was rejected. This indicates that there is a statistically significant relationship between government support and the sustainability of solid waste management programs.

The correlation coefficient of -0.200 indicates a weak negative relationship between the two variables. Although the relationship is statistically significant, the strength of the association is relatively small. The negative direction suggests that as perceptions of government support increase, the perceived sustainability of the programs tends to decrease slightly, and vice versa. This result may initially appear unexpected because government support is generally assumed to strengthen program sustainability.

One possible explanation is that communities that receive stronger government intervention may become more dependent on external assistance, leading respondents to perceive sustainability as relying heavily on continued government involvement. In contrast, communities with less direct support may develop stronger local initiative, self-management, and community-driven practices, which can enhance perceptions of long-term sustainability. Another possible explanation is that respondents may have evaluated government support and sustainability from different perspectives, resulting in a weak inverse relationship despite both variables receiving very high mean ratings in the descriptive analysis.

It is also important to note that the correlation is weak. Therefore, the finding should not be interpreted as government support being harmful to sustainability. Rather, the result suggests that the relationship between these variables is more complex than a simple positive association. Sustainability is likely influenced by multiple interacting factors, including community participation, institutional commitment, policy implementation, financial management, technical assistance, and the availability of infrastructure. Government support remains an important component, but it operates alongside these other factors in shaping the long-term success of solid waste management programs.

Overall, the findings imply that while government support has a significant connection with the sustainability of solid waste management programs, the relationship is weak and negative. This suggests that achieving sustainable waste management requires not only government assistance but also strong community engagement, effective local leadership, and institutional mechanisms that allow programs to continue even when external support fluctuates.

In summary, respondents perceived community participation, government support, and the sustainability of solid waste management programs to be very high. However, inferential analysis revealed that community participation was not significantly related to sustainability, while government support showed a statistically significant but weak negative relationship with sustainability. These findings suggest that the long-term sustainability of solid waste management programs is influenced by a combination of factors beyond participation and government assistance alone, highlighting the importance of institutional effectiveness, policy continuity, resource management, and collaborative community efforts.

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

This study was conducted to determine the relationship between community participation, government support, and the sustainability of solid waste management programs in top-performing barangays in one city in Negros Occidental. Based on the analysis of the data, the following findings were obtained:

1. The respondents demonstrated a very high level of community participation in solid waste management programs, with an overall mean of 4.40 (SD = 0.16). Specifically, waste segregation practices obtained a mean of 4.44 (SD = 0.33), volunteerism 4.37 (SD = 0.29), environmental activities 4.36 (SD = 0.29), and monitoring activities 4.44 (SD = 0.31), all interpreted as very high. Waste segregation practices and monitoring activities obtained the highest means, indicating that the respondents were particularly active in waste segregation and monitoring efforts.

2. The respondents perceived a very high level of government support for solid waste management programs, with an overall mean of 4.39 (SD = 0.13). Specifically, funding support obtained a mean of 4.38 (SD = 0.28), policy enforcement 4.42 (SD = 0.33), capacity building 4.39 (SD = 0.30), technical assistance 4.37 (SD = 0.32), and infrastructure support 4.39 (SD = 0.33), all interpreted as very high. Among the five dimensions, policy enforcement obtained the highest mean of 4.42, while technical assistance obtained the lowest mean of 4.37, indicating that the respondents perceived strong government support across the various aspects of solid waste management programs.
3. The respondents assessed the sustainability of solid waste management programs as very high, with an overall mean of 4.38 (SD = 0.16). Specifically, environmental sustainability obtained a mean of 4.40 (SD = 0.32), economic sustainability 4.38 (SD = 0.31), social sustainability 4.32 (SD = 0.30), and institutional sustainability 4.40 (SD = 0.32), all interpreted as very high. Environmental sustainability and institutional sustainability obtained the highest means, both at 4.40, while social sustainability obtained the lowest mean of 4.32. These findings indicate that the respondents perceived the solid waste management programs as highly sustainable across environmental, economic, social, and institutional dimensions.
4. The analysis revealed a very weak positive relationship between community participation and the sustainability of solid waste management programs ($r = 0.063$, $p = 0.534$). However, the relationship was not statistically significant at the 0.05 level. Thus, the null hypothesis was not rejected, indicating that community participation did not have a statistically significant relationship with the sustainability of solid waste management programs in the study setting.
5. There was likewise a significant positive relationship between government support and the sustainability of solid waste management programs. This suggests that increased government support contributes to the sustainability of solid waste management initiatives.

CONCLUSIONS

Based on the findings of the study, the following conclusions are drawn:

1. The very high level of community participation indicates that the barangay officials actively engage in solid waste management activities and recognize their important role in promoting proper waste management practices. Their consistent participation contributes to the effective implementation of community-based environmental programs.
2. The very high level of government support indicates that the local government provides adequate policies, resources, technical assistance, and institutional support necessary for the effective implementation of solid waste management programs.
3. The very high level of sustainability indicates that the existing solid waste management programs are capable of maintaining their environmental, economic, social, and institutional benefits through the continued collaboration of the local government and the community.
4. Community participation significantly contributes to the sustainability of solid waste management programs. This implies that increasing community involvement in waste segregation, volunteerism, environmental activities, and monitoring activities strengthens the long-term success of these programs.
5. Government support significantly contributes to the sustainability of solid waste management programs. Continuous policy implementation, financial support, technical assistance, capacity building, and infrastructure development enhance the long-term effectiveness and sustainability of waste management initiatives.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are offered:

1. Barangay officials may continue promoting community participation through regular environmental campaigns, waste segregation programs, volunteer activities, and community monitoring initiatives.
2. Local government units can sustain financial assistance, strengthen policy implementation, and continue providing technical and infrastructure support to barangays.

3. Existing sustainability initiatives can be maintained and continuously evaluated to ensure long-term environmental, social, economic, and institutional benefits.
4. The LGU and barangay officials may encourage greater public participation through awareness campaigns, incentives, and partnerships with community organizations.
5. The city government may continue strengthening inter-agency collaboration, provide adequate funding, and regularly assess the effectiveness of solid waste management policies and programs.
6. Residents can maintain their active participation in waste segregation, recycling, volunteer activities, and environmental monitoring. Greater community ownership of waste management programs can help ensure that these initiatives remain effective even with changes in government support.
7. Future studies may include a larger number of respondents from different municipalities or provinces to improve the generalizability of the findings. Researchers may also examine other factors that could influence the sustainability of solid waste management programs, such as environmental awareness, leadership effectiveness, institutional capacity, behavioral attitudes, and community resilience. In addition, qualitative methods such as interviews or focus group discussions may be used to gain deeper insights into the experiences and perceptions of stakeholders regarding sustainable waste management practices.

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APPENDICES

Appendix A.1

Certification of Plagiarism and Grammar Check



Republic of the Philippines
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La Carlota City, Negros Occidental
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**CERTIFICATION
PLAGIARISM AND GRAMMAR TESTS**

This is to certify that the thesis titled **"COMMUNITY PARTICIPATION, GOVERNMENT SUPPORT, AND THE SUSTAINABILITY OF SOLID WASTE MANAGEMENT PROGRAMS"**, a research conducted by **Elmer S. Llanes, a Master in Public Administration**, passed the Turnitin Similarity Test. The outcome of the above research after scanning for similarity detection, resulted in a **20% Similarity Index** and **93% Grammarly** checked, which are within the standards of La Carlota City College Graduate School.

This certification is issued upon the request of the above-named student for the purpose of the completion of the study.

Issued this 9th day of July 2026 at La Carlota City College, Research Office, La Carlota City, Negros Occidental.

JOBEL CRIS T. VIBAL, PhD
Language Critic

SHARON L. APOHEN, PhD
Research Director



Appendix A.2

Certification of Ethics Committee



Appendix A.3

Certification of Statistical Data Analysis

Appendix B

Letters to Conduct Study

June 22, 2026

VICENTE D. MESIAS

CGDH-I

City Environment and Natural Resources Officer

SIR:

I am **Elmer S. Llanes**, currently pursuing the degree **Master in Public Administration**. As part of the requirements for the degree **Master in Public Administration**, I am conducting a study entitled **"Community Participation, Government Support, and the Sustainability of Solid Waste Management Programs in Selected Barangays in one of the Cities in Negros Occidental."**

In this regard I respectfully request permission to conduct pilot testing of the attached questionnaire among respondents who possess characteristics similar to those of the actual study participants. The pilot testing aims to determine the reliability of the research instrument and identify areas that may require improvement prior to its actual administration. Following the pilot test and the incorporation of the necessary revisions, the finalized questionnaire will be utilized for the conduct of the study.

Participation in the study shall be entirely voluntary. All information gathered from the respondents will be treated with strict confidentiality and shall be used solely for academic and research purposes. Furthermore, the conduct of the pilot test and actual survey shall be scheduled at a time convenient to the respondents to ensure that their regular duties and responsibilities will not be disrupted.

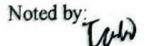
In view thereof, I am respectfully requesting permission from your office to conduct the pilot testing and actual survey among the identified respondents.

Your favorable consideration of this request will be highly appreciated. Thank you very much for your support and assistance.

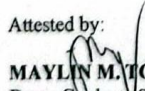
Respectfully yours,


ELMER S. LLANES
Researcher

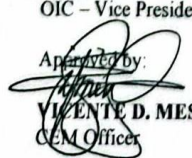
Noted by:


TRUDY C. CERBO, PhD
Research Adviser

Attested by:


MAYLIN M. TONGCUA, PhD
Dean, Graduate School, and
OIC - Vice President for Academic Affairs

Approved by:


VICENTE D. MESIAS
CEM Officer

Appendix C

Survey Questionnaire

COMMUNITY PARTICIPATION, GOVERNMENT SUPPORT, AND THE SUSTAINABILITY OF SOLID WASTE MANAGEMENT PROGRAMS TOP PERFORMING BARANGAYS INVITATION AND INFORMED CONSENT

You are invited to participate in a study on **Community Participation, Government Support, and the Sustainability of Solid Waste Management Programs**. Participation in this study is voluntary and anonymous. You have the right to withdraw from the study at any time without any consequences.

All information that will be collected will be treated with utmost confidentiality and will be used solely for research purposes. The results of this study will be reported in summarized or aggregate form, ensuring that no individual participant will be identified.

By proceeding with this questionnaire, you are indicating that you have read and understood the information provided and that you voluntarily agree to participate in this study.

Thank you for your cooperation and valuable contribution.

Please answer all items honestly. For Parts II–IV, indicate your response using the scale below:

5	—	Strongly	Agree
4	—		Agree
3	—		Neutral
2	—		Disagree
1 – Strongly Disagree			

Part I. Respondent's Profile

Name: _____ (Optional)

Position in the Barangay: _____ (Optional)

Part II. Community Participation

A. Waste Segregation Practices

Indicator	5	4	3	2	1
1. I segregate waste at home.	☐	☐	☐	☐	☐
2. I separate biodegradable, recyclable, residual and special waste.	☐	☐	☐	☐	☐
3. I practice recycling whenever possible.	☐	☐	☐	☐	☐
4. I comply with barangay waste collection procedures.	☐	☐	☐	☐	☐
5. I encourage household members to segregate waste.	☐	☐	☐	☐	☐

Volunteerism

Indicator	5	4	3	2	1
1. I participate in clean-up drives.	☐	☐	☐	☐	☐
2. I volunteer in environmental activities.	☐	☐	☐	☐	☐
3. I support barangay environmental campaigns.	☐	☐	☐	☐	☐
4. I am willing to volunteer in future programs.	☐	☐	☐	☐	☐
5. I encourage others to participate in environmental activities.	☐	☐	☐	☐	☐

Environmental Activities

Indicator	5	4	3	2	1
1. I attend environmental seminars and meetings.	☐	☐	☐	☐	☐
2. I participate in recycling activities.	☐	☐	☐	☐	☐
3. I support environmental awareness campaigns.	☐	☐	☐	☐	☐
4. I join community environmental projects.	☐	☐	☐	☐	☐
5. I actively promote environmental protection.	☐	☐	☐	☐	☐

Monitoring Activities

Indicator	5	4	3	2	1
1. I report illegal dumping when observed.	☐	☐	☐	☐	☐
2. I help monitor compliance with waste regulations.	☐	☐	☐	☐	☐
3. I encourage neighbors to follow waste policies.	☐	☐	☐	☐	☐
4. I participate in discussions on environmental issues.	☐	☐	☐	☐	☐
5. I support barangay monitoring efforts.	☐	☐	☐	☐	☐

Part III. Government Support

Funding Support

Indicator	5	4	3	2	1
1. The LGU allocates sufficient funds for waste management.	☐	☐	☐	☐	☐
2. Environmental projects receive adequate financial support.	☐	☐	☐	☐	☐
3. Resources are available for waste management activities.	☐	☐	☐	☐	☐
4. Funding is sustained over time.	☐	☐	☐	☐	☐
5. Financial support contributes to program success.	☐	☐	☐	☐	☐

Policy Enforcement

Indicator	5	4	3	2	1
1. Waste management ordinances are properly enforced.	☐	☐	☐	☐	☐
2. Violators are sanctioned appropriately.	☐	☐	☐	☐	☐
3. Compliance is regularly monitored.	☐	☐	☐	☐	☐
4. Policies are clearly communicated to residents.	☐	☐	☐	☐	☐
5. Policy enforcement promotes responsible behavior.	☐	☐	☐	☐	☐

Capacity Building

Indicator	5	4	3	2	1
1. The LGU provides training on waste management.	☐	☐	☐	☐	☐
2. Residents are given environmental education opportunities.	☐	☐	☐	☐	☐
3. Capacity-building programs improve participation.	☐	☐	☐	☐	☐
4. Training activities are accessible.	☐	☐	☐	☐	☐
5. Environmental seminars improve community knowledge.	☐	☐	☐	☐	☐

Technical Assistance

Indicator	5	4	3	2	1
1. The LGU provides technical guidance on waste management.	☐	☐	☐	☐	☐

2. Experts assist in implementing environmental programs.	☐	☐	☐	☐	☐
3. Residents receive support on proper waste practices.	☐	☐	☐	☐	☐
4. Technical assistance improves implementation.	☐	☐	☐	☐	☐
5. Technical support is readily available.	☐	☐	☐	☐	☐

Infrastructure Support

Indicator	5	4	3	2	1
1. Adequate waste bins and facilities are available.	☐	☐	☐	☐	☐
2. Materials Recovery Facilities are accessible.	☐	☐	☐	☐	☐
3. Waste collection services are reliable.	☐	☐	☐	☐	☐
4. Necessary equipment is provided.	☐	☐	☐	☐	☐
5. Infrastructure supports effective waste management.	☐	☐	☐	☐	☐

Part IV. Sustainability of Solid Waste Management Programs

Environmental Sustainability

Indicator	5	4	3	2	1
1. The program reduces pollution.	☐	☐	☐	☐	☐
2. The program promotes recycling.	☐	☐	☐	☐	☐
3. The program encourages conservation of resources.	☐	☐	☐	☐	☐
4. The program improves environmental quality.	☐	☐	☐	☐	☐
5. The program contributes to long-term environmental protection.	☐	☐	☐	☐	☐

Economic Sustainability

Indicator	5	4	3	2	1
1. The program utilizes resources efficiently.	☐	☐	☐	☐	☐
2. The program is financially viable.	☐	☐	☐	☐	☐
3. The program minimizes waste management costs.	☐	☐	☐	☐	☐
4. Resources are managed effectively.	☐	☐	☐	☐	☐
5. The program can continue despite budget challenges.	☐	☐	☐	☐	☐

Social Sustainability

Indicator	5	4	3	2	1
1. The community supports the program.	☐	☐	☐	☐	☐
2. The program strengthens social responsibility.	☐	☐	☐	☐	☐
3. The program increases public awareness.	☐	☐	☐	☐	☐
4. Stakeholders actively participate.	☐	☐	☐	☐	☐
5. The program promotes community cooperation.	☐	☐	☐	☐	☐

Institutional Sustainability

Indicator	5	4	3	2	1
1. Local leaders remain committed to the program.	☐	☐	☐	☐	☐
2. Policies supporting waste management are sustained.	☐	☐	☐	☐	☐

3. Government agencies continue providing support.	☐	☐	☐	☐	☐
4. Management systems remain effective.	☐	☐	☐	☐	☐
5. The program is likely to continue in the future.	☐	☐	☐	☐	☐

Appendix D

Results of Statistical Data Analysis

SOP 1

Level of Community Participation

	N	Mean	Std. Deviation
Waste Segregation Practices	100	4.44	.33
CP1	100	4.54	.63
CP2	100	4.42	.71
CP3	100	4.38	.63
CP4	100	4.43	.73
CP5	100	4.41	.64
Volunteerism	100	4.37	.29
CP6	100	4.41	.62
CP7	100	4.39	.63
CP8	100	4.35	.67
CP9	100	4.37	.71
CP10	100	4.34	.68
Environmental Activities	100	4.36	.29
CP11	100	4.31	.71
CP12	100	4.33	.68
CP13	100	4.40	.60
CP14	100	4.40	.68
CP15	100	4.37	.71
Monitoring Activities	100	4.44	.31
CP16	100	4.51	.67
CP17	100	4.41	.65
CP18	100	4.43	.66
CP19	100	4.38	.65
CP20	100	4.47	.63
Community Participation	100	4.40	.16
Valid N (listwise)	100		

SOP 2

Level of Government Support

	N	Mean	Std. Deviation
Funding Support	100	4.38	.28
GS1	100	4.29	.71
GS2	100	4.48	.64
GS3	100	4.40	.68
GS4	100	4.32	.66
GS5	100	4.41	.60
Policy Enforcement	100	4.42	.33
GS6	100	4.39	.65
GS7	100	4.46	.66
GS8	100	4.46	.64
GS9	100	4.35	.77
GS10	100	4.43	.62
Capacity Building	100	4.39	.30
GS11	100	4.26	.68
GS12	100	4.44	.67
GS13	100	4.33	.71
GS14	100	4.32	.65
GS15	100	4.59	.59
Technical Assistance	100	4.37	.32
GS16	100	4.31	.69
GS17	100	4.44	.67
GS18	100	4.44	.72
GS19	100	4.25	.76
GS20	100	4.39	.63
Infrastructure Support	100	4.39	.33
GS21	100	4.32	.69
GS22	100	4.34	.68
GS23	100	4.47	.66
GS24	100	4.33	.68
GS25	100	4.47	.59
Government Support	100	4.39	.13
Valid N (listwise)	100		

SOP 2

SOP 3

Level of Sustainability of Solid Waste Management Programs

	N	Mean	Std. Deviation
Environmental Sustainability	100	4.40	.32
SS1	100	4.35	.72
SS2	100	4.52	.61
SS3	100	4.35	.66
SS4	100	4.35	.64
SS5	100	4.42	.67
Economic Sustainability	100	4.38	.31
SS6	100	4.49	.61
SS7	100	4.32	.68
SS8	100	4.38	.63
SS9	100	4.39	.68
SS10	100	4.34	.65
Social Sustainability	100	4.32	.30
SS11	100	4.36	.70
SS12	100	4.30	.72
SS13	100	4.30	.63
SS14	100	4.23	.71
SS15	100	4.42	.70
Institutional Sustainability	100	4.40	.32
SS16	100	4.38	.66
SS17	100	4.53	.61
SS18	100	4.38	.71
SS19	100	4.32	.76
SS20	100	4.40	.60
Sustainability of Solid Waste Management Programs	100	4.38	.16
Valid N (listwise)	100		

SOP 4

Relationship between Community Participation and Sustainability of Solid Waste Management Programs

			Community Participation	Sustainability of Solid Waste Management Programs
Spearman's rho	Community Participation	Correlation Coefficient	1.000	.063
		Sig. (2-tailed)	.	.534
		N	100	100
	Sustainability of Solid Waste Management Programs	Correlation Coefficient	.063	1.000
		Sig. (2-tailed)	.534	.
		N	100	100

SOP 5

Relationship between Government Support and Sustainability of Solid Waste Management Programs

			Government Support	Sustainability of Solid Waste Management Programs
Spearman's rho	Government Support	Correlation Coefficient	1.000	-.200 [*]
		Sig. (2-tailed)	.	.046
		N	100	100
	Sustainability of Solid Waste Management Programs	Correlation Coefficient	-.200 [*]	1.000
		Sig. (2-tailed)	.046	.
		N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

RESEARCH INSTRUMENT VALIDATION RESULT

Using the criteria developed for evaluating the content validity of a researcher-made instrument, as set forth by C.H. Lawshe (1975), five evaluators assessed the questionnaire on “_____”

For a panel of 5 or 6 experts, an item must achieve a minimum CVR value of **0.99** to be considered significantly valid at the $\alpha = 0.05$ level. Since $N = 5$, this effectively means all five panelists must agree that an item is "essential" for it to meet Lawshe's original threshold for inclusion.

COMMUNITY PARTICIPATION

$$\text{Mean CVR} = \frac{\text{Total number of essential items}}{\text{number of items}}$$

Total number of essential items = **20**

Number of Items = **20**

$$\text{Mean CVR} = \frac{20}{20} = 1 \quad \text{Strong Content Validity (all items are essential)}$$

GOVERNMENT SUPPORT

$$\text{Mean CVR} = \frac{\text{Total number of essential items}}{\text{number of items}}$$

Total number of essential items = **25**

Number of Items = **25**

$$\text{Mean CVR} = \frac{25}{25} = 1 \quad \text{Strong Content Validity (all items are essential)}$$

SUSTAINABILITY OF SOLID WASTE MANAGEMENT PROGRAMS

$$\text{Mean CVR} = \frac{\text{Total number of essential items}}{\text{number of items}}$$

Total number of essential items = **20**

Number of Items = **20**

$$\text{Mean CVR} = \frac{20}{20} = 1 \quad \text{Strong Content Validity (all items are essential)}$$


ZYRENE KAYE G. CAHAYAGAN, LPT
Research and Creative Works Office Staff
La Carlota City College

Appendix E

Normality Test Results

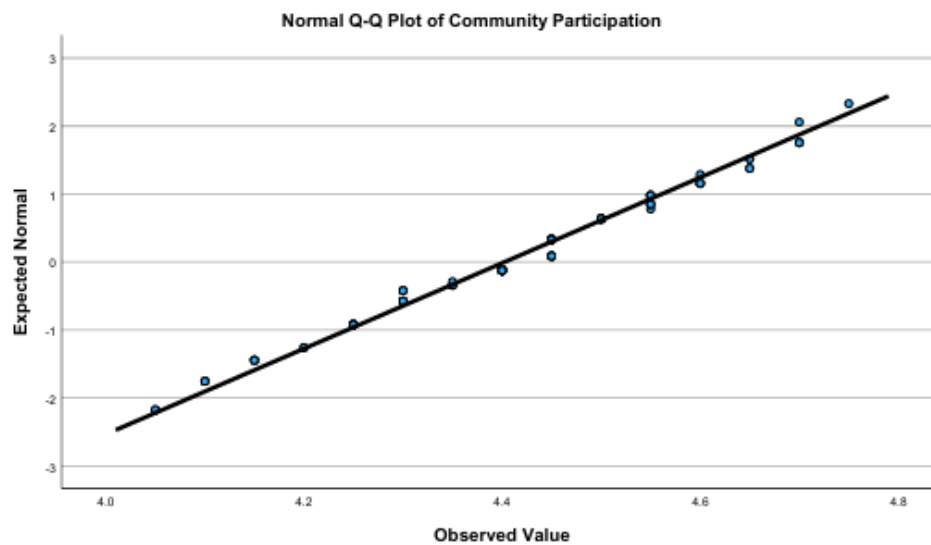
NORMALITY

Tests of Normality

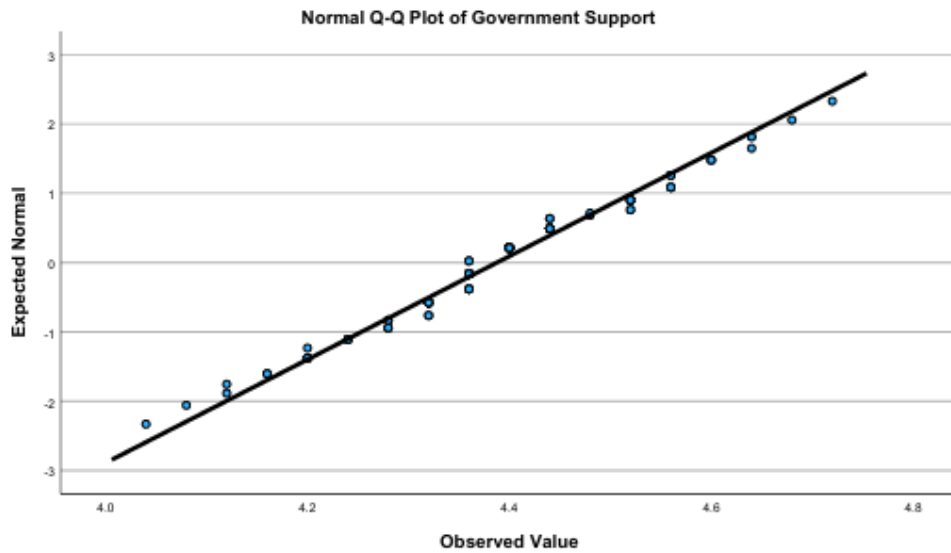
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Community Participation	.108	100	.006	.978	100	.098
Government Support	.113	100	.003	.981	100	.163
Sustainability of Solid Waste Management Programs	.092	100	.037	.985	100	.345

a. Lilliefors Significance Correction

Community Participation



Government Support



Sustainability of Solid Waste Management Programs

