Solid Waste Management Program Implementation Combating Hazardous Impairment

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Abstract— The implementation of a Solid Waste Management (SWM) program is a critical step in tackling the growing problems of waste management and environmental contamination. The study used a descriptive research design. The study's respondents are 382 people who were picked at random. The major data collection instrument for the study was a questionnaire checklist. This study aims to determine the extent of solid waste management program implementation as measured by Local Government Unit officials and Umingan community inhabitants. It can be used to swiftly determine the strategies used by barangay officials. Funding the significant differences in the barangay officials' decisions based on sex, age, and years of service is also essential. To acquire a clear picture of the barangay official's decision-making, a descriptive survey was used in the majority of cases. To identify the different modes of thought employed by the barangay officials, the researcher tallied up the individual responses' scores for each indicator of the six thinking caps. The statistical significance of the difference between the thinking headwear of male and female barangay council members was determined using the t-test. The findings show that the overall mean for the extent of implementation as measured by LGU officials is 3.46, which was interpreted as implemented, and for community people has 3.34 mean average, which was viewed as slightly implemented. Furthermore, the significant difference between the amount of SWM implementation as measured by LGU personnel and residents has a p-value of 1.923 and a significant 2-tailed p-value of 0.70 based on the findings that there is a significant difference. On the other hand, based on the data, the overall mean for the problems faced by LGU personnel is 3.35, which was considered as slightly challenging Furthermore, the significant association between the extent of implementation and the challenges faced by the LGU Personnel's demonstrates a significant relationship to the challenges encountered by the Personnel on the execution of the SWM program. As a result, the study suggests that the strict application of SWM be carefully monitored, and that information dissemination be used in the Umingan municipality.

Indexed Terms— Barangay officials, Implementation, Solid Waste Management, Local Government Unit, Challenges Encountered
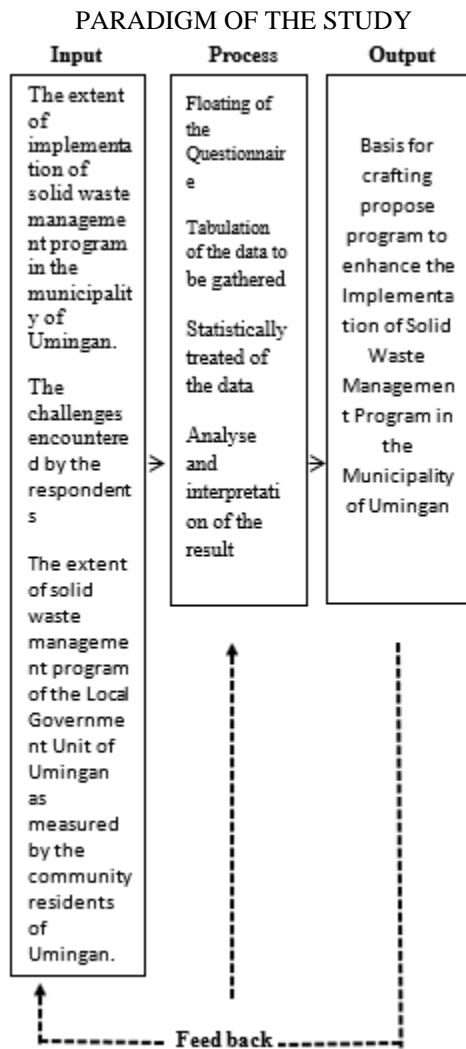
I. INTRODUCTION

The enactment of solid waste management in the Municipality of Umingan is a critical concern. The problem of solid waste generation and disposal has become increasingly urgent in this densely populated area with a high percentage of informal settlements. The research aims to gain an understanding of the existing state of waste management and disposal methods in the municipality of Umingan, which comprises secondary public schools. This study examines the current situation, identifies the obstacles and opportunities in solid waste management and disposal, and recommends feasible solutions to improve solid waste management implementation at the Barangay level. The rural barangays of the Municipality of Umingan are the subject of this study because they are frequently under-served in terms of trash management and have limited access to information on the various facets of solid waste management. According to Gequinto (2017), as quoted by Sapuay (2016), the Republic Act 9003, or the Ecological Solid Waste Management Act of 2000, is a comprehensive law that establishes solid waste management strategies, policies, and programs in the Philippines. This law aims to safeguard the environment from the harmful impacts of trash while protecting public health and safety. The Act requires

local government units (LGUs) to create and implement an Integrated Solid Waste Management Plan (ISWMP) that follows a waste management strategy hierarchy that begins with source reduction and progresses to recycling and composting, energy recovery, and eventually final disposal. Local governments must also designate a Materials Recovery Facility (MRF) to ensure adequate trash segregation. The primary duty for implementing and enforcing the requirements of this Act must rest with the Local Government Units (LGUs) within their respective jurisdictions, as specified in RA 7160, also known as the Local Government Code of 1991. The law also requires that solid garbage be separated and collected at the barangay level, while non-recyclable materials and special wastes be collected by the municipality or city (Gequinto, 2017). In response to the Republic Act 9003 Solid Waste Management Act of 2022, the municipality has taken some steps to address these issues, including the adoption of Municipal Ordinance No. 12, S 2007 of Umingan, Pangasinan in 2007, a law authored by Vice Mayor Eldred P. Tumbocon, CE-GE and endorsed by all Sangauniang Bayan members. However, the strategy's implementation has been tardy and insufficient. As a result, the municipality has failed to reduce the production of solid waste and manage it effectively. Furthermore, Al-Katib et al. (2010) underlined that solid waste management necessitates technical, political, legal, socio-cultural, environmental, economic, and resource considerations. The lack of resources will fail the solid waste management program. As a result, community members will be dissatisfied (Lad, Chauhan, & Gole, 2020). The study will also investigate the roles and responsibilities of the different stakeholders involved in the solid waste management process, such as the local government units, the communities, the private sector, and non-governmental organizations. The study will also examine the various financial and technical support available for solid waste management implementation in the Barangay level. Aside from these, widespread cooperation and active engagement are required. As a result, teaching individuals how to handle created solid waste through information dissemination has become critical (Marello & Helwege, 2014; Nolasco, Baguia, & Padua, 2019). According to Oliva, as referenced by Villanueva (2013), education is one of the four main components of a good solid waste

management program. Dela Cruz (2020) discovered that a solid waste management program is only minimally implemented in one neighborhood. As a result, Section 55 of R.A. No. 9003 directed the Department of Education (DepEd), the Commission on Higher Education (CHED), and other national bodies to carry out a solid waste management continuing education and information distribution program. According to Ejaz, Nisar, and Naeem (2010), solid waste dumps are wreaking havoc on the environment in developing countries. The negative environmental effects of inappropriate solid waste disposal can be seen all across the developing globe. Furthermore, the unexpected invasion of the city, extreme weather conditions, a lack of social awareness/community involvement, insufficient resources, particularly insufficient equipment, and a lack of funding are the key causes of Rawalpindi's inadequate municipal solid waste management systems. Infectious infections, land and water contamination, drain obstruction, and biodiversity loss can all result from an inadequate municipal solid waste management system (Ejaz et al., 2010). Despite Municipal Ordinance No. 12, S., the execution of solid waste management in the Municipality of Umingan is thus vital to ensure environmental protection as well as the health and safety of the local population. Despite the municipality's 2007 Article VII violations and penalties, the lack of a comprehensive waste management system has increased the amount of waste dumped in the municipality's rivers and canals, while a lack of proper disposal facilities has resulted in environmental pollution. The municipality's people and the local government would benefit from the study on the implementation of the municipality's solid waste management program. They would gain from improved waste management techniques as well as financial and resource savings as a result of the program's implementation. As a result, the purpose of this research is to examine the current situation of solid waste management in the municipality of Umingan, Pangasinan. The study's specific goal is to identify the problems that local government authorities and communities experience when implementing solid waste management systems in the area. The municipality has undergone substantial population expansion and urbanization in recent years, increasing the amount of solid garbage generated. The study will examine the existing condition of solid waste

management in the area and identify the obstacles that local government officials and communities encounter while implementing solid-waste management systems. It will also investigate potential solutions and tactics for improving the current situation. The study will include a review of existing solid waste management laws and programs, as well as interviews with stakeholders such as local government officials, community members, and relevant non-governmental groups. The study's findings will be used to produce recommendations for improving solid waste management in the municipality of Umingan.

PARADIGM OF THE STUDY

Input	Process	Output
The extent of implementation of solid waste management program in the municipality of Umingan. The challenges encountered by the respondents The extent of solid waste management program of the Local Government Unit of Umingan as measured by the community residents of Umingan.	Floating of the Questionnaire Tabulation of the data to be gathered Statistically treated of the data Analyse and interpretation of the result	Basis for crafting propose program to enhance the Implementation of Solid Waste Management Program in the Municipality of Umingan

Feed back

II. METHODOLOGY

The researcher used descriptive research to serve as the study's blueprint. According to Creswell (1994), the descriptive method of research is used to obtain information regarding the current state of affairs. According to Creswell (2012, p. 274), the objective of the descriptive technique is to find a full explanation and description about the object of the research in a systematic manner. A descriptive research design is one that aims to characterize a population or phenomenon of interest. It is a type of study design that focuses on characterizing a certain group or community. It is frequently used to describe in depth a group's behavior, beliefs, attitudes, or qualities. The researcher devised a questionnaire checklist to assess the implementation of a solid waste management program in the Pangasinan municipality of Umingan. The researcher's strategies include: collecting data from the population or sample that is relevant to the research question; analyzing the data collected using various statistical methods such as correlation, regression, and descriptive statistics; interpreting the results of the analysis and drawing conclusions about the relationship between variables; reporting the results of the assessment clearly and concisely; and making recommendations based on the results. The researcher employed probability sampling, specifically simple random sampling, which employs a pure chance selection procedure. According to the 2020 Census, the municipality of Umingan has a population of 77,074. It accounted for 2.44% of Pangasinan's total population and 1.45% of the Ilocos Region's total population. The researcher used Yamane's formula to calculate sample size, and the researcher determined the total number of senior high school students in Umingan with a confidence level of 95% and a margin of error of 5%. of them are workers of the Umingan Local Government Unit and 191 are Umingan community inhabitants. LGU-Umingan's whole workforce was 576 individuals, including 128 permanent, four temporary, ten co-terminus, 12 elected officials, 61 casuals, 355 contractual, and six Job Orders/part-timers. The criteria for selecting responders includes bona fide resident of Umingan, being of legal age, and being either male or female. Table 1 will show the population of the sample.

Table I. Population of the Study

Respondent	Actual Number of Population	Sample
LGU Employees		191
Residents	77,074	191
Total	77,074	**382**

As a result, 382 respondents represent the entire Umingan population, and 191 The Special Program for Social Sciences (SPSS) version 20 was used to tally and statistically analyze each data. The 5-point Likert scale was used to rate the statements for subproblem Number 1, the extent of implementation of the solid waste management program in the municipality of Umingan as measured by the Local Government Unit of Umingan and the community residents of Umingan, Pangasinan regards to segregation; reduce; recycling; and disposal.

The average weighted mean is used to describe the following ranges of values, and statistical limitations, and is interpreted as follows:

Mean	Scale Range	Descriptive Rating
5	4.21– 5.00	Highly Implemented (HI)
4	3.41 – 4.20	Implemented (I)
3	2.61 - 3.40	Slightly Implemented (SI)
2	1.81- 2.60	Rarely Implemented (RI)
1	1.00- 1.80	Not Implemented (NI)

The paired sample t-test was used to determine the significant difference between the amount of execution of the solid waste management program of the Local Government Unit of Umingan and as measured by Umingan community inhabitants. The 5-point Likert scale was used to rate the assertions for sub-problem number 3, the obstacles encountered by the Local Government Unit of Umingan and community inhabitants in the implementation of solid waste management in the municipality of Umingan. The average weighted mean is used to describe the following ranges of values, and statistical limitations, and is interpreted as follows:

Mean	Scale Range	Descriptive Rating
5	4.21– 5.00	Very Challenging (VC)
4	3.41 – 4.20	Challenging (C)
3	2.61 - 3.40	Slightly Challenging (SC)
2	1.81- 2.60	Rarely Challenging (RC)
1	1.00- 1.80	Not Challenging (NC)

The Pearson Product Moment Correlation was used to address sub-problem number 4, which is the significant relationship between the challenges encountered and the extent of implementation solid waste management program by the Local Government Unit of Umingan in the implementation solid waste management program.

Size of Correlation	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to 70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (.00 to -.30)	Negligible Correlation

III.   RESULTS AND DISCUSSION

This chapter analyses, presents, and analyzes the study's data to properly comprehend the conclusions.

Table II. The Extent of Implementation of Solid Waste Management Program- LGU personnel's

Indicators	Mean	Interpretation
Segregation		
Segregation practice is evident in the LGU Offices, Public market, Barangay, and Schools.	3.78	Implemented
Waste is segregated at least two types.	3.60	Implemented
Container for special waste is necessary wherever applicable.	3.24	Slightly Implemented
No unmanaged waste containers outside the LGU Offices, Public market, Barangay, and Schools.	3.55	Implemented
Material Recover Facility is available.	3.23	Slightly Implemented
Total Mean	**3.48**	**Implemented**
Reduce		
Avoidance of use of plastics in the LGU Offices, Public market, Barangay, and Schools.	3.600	Implemented
No more plastics used as secondary packaging material.	3.26	Slightly Implemented
Most foods are packed using biodegradable materials like biodegradable paper etc.	3.65	Implemented
Orient the LGU Offices, Public market, Barangay, and Schools on plastic avoidance policy.	3.28	Slightly Implemented
Implement of the LGU Municipal Ordinance on plastic avoidance in the public market, school canteens etc.	3.59	Implemented
Total Mean	**3.48**	**Implemented**
Recycling		
Recover and recycle papers (pots, charcoal, etc).	3.50	Implemented
Plastic waste turned into pillows as one of the examples.	3.26	Slightly Implemented
Drinking straws and Popsicle sticks made into tiny houses among others.	3.50	Implemented
Products out of recyclable materials show promise (profit, utility, etc).	3.33	Slightly Implemented
Material Recover Facility is available and functional.	3.22	Slightly Implemented
Total Mean	**3.36**	**Slightly Implemented**
Disposal		
Proper disposal of special wastes like (animal/ fish blood, tissue etc. that may cause foul odor and flies breeding)	3.52	Implemented
On site establishment of composting facilities for biodegradable wastes (any of these: compost pit, vermicomposting, etc.)	3.34	Slightly Implemented
Proper observance of collection schedules for specific category of segregated solid wastes.	3.58	Implemented
Designate drop-off center/MRF (ideal, sturdy, labeled, actual sales on recyclable waste).	3.50	Implemented
Residual waste due for collection is inside sacks to facilitate collection by the LGU.	3.62	Implemented
Total Mean	**3.51**	**Implemented**
Overall Mean	**3.46**	**Implemented**

According to Table 2, the amount of solid waste management program execution by Local Government Unit staff has an overall mean of 3.46, with the matching interpretation of "Implemented." In the indicator on segregation, on the other hand, two indicators are "slightly implemented," which are the statements "Container for special waste is necessary wherever applicable" with a mean of 3.24 and "Material Recover Facility is available" with a mean

of 3.23, indicating that the implementation of the container for special waste and material recovery facility of each barangay is not properly implemented. While the second indicator is the decrease, the findings show that the "Orientation of LGU Offices, Public Market, Barangay, and Schools on Plastic Avoidance Policy" has a mean of 3.28 with the matching interpretation of "slightly implemented." On the third indicator, recycling, the results show that the statements "Plastic waste turned into pillows as one of the examples"; "Drinking straws and Popsicle sticks made into tiny houses among others"; "Products out of recyclable materials show promise (profit, utility, etc.)" and "Material Recover Facility is available and functional" are only partially implemented by LGU personnel. Finally, the fourth indicator is disposal. According to the results, most LGU personnel believed properly implemented, but on the other hand "On-site establishment of composting facilities for biodegradable wastes (any of these: compost pit, vermicomposting, etc.)" is only partially implemented. According to Derilo's (2021) study, the amount of implementation along waste segregation is highly implemented, while collecting, re-use, reduction, recycling, and composting are also implemented. The study also reveals shortcomings in the program's implementation, such as a lack of facility to process recyclable materials, students' attitudes and awareness of solid waste management, a lack of training on waste recycling and composting, inadequate and insufficient waste collection equipment, and a lack of resources or funds to maintain the Solid Waste Management Program. The main reason why the degree of solid waste management program execution by LGU employees is "implemented" is because of the environmental and health implications. Waste management ensures that hazardous materials are disposed of safely and responsibly, lowering the risk of environmental damage and pollution. It also helps to reduce the number of natural resources utilized in the production and disposal of garbage, and the accompanying expenses. Finally, good waste management can promote community safety by preventing the transmission of infectious diseases, ensuring safe living and working conditions, and providing citizens with a better lifestyle. As a result, the overall mean on the extent of solid waste management program implementation by Local Government Unit personnel is 3.46, with the

corresponding interpretation of "Implemented" indicating that the local government unit of Umingan has focused on the implementation of solid waste management program in their municipality.

On the other hand, the overall weighted mean of the municipality of Umingan's solid waste management program as measured by community residents is 3.34, which is interpreted as "slightly implemented" in table 3. The total mean for the first indicator, segregation, is 3.38, which is interpreted as "slightly implemented," while the total mean for the second indicator, reduce, is 3.29, with the corresponding interpretation of "slightly implemented," the total mean for the third indicator, recycling, is 3.39, which is interpreted as "slightly implemented," and the total mean for the

Table III. The Extent of Implementation of Solid Waste Management Program- Community

Indicators	Mean	Interpretation
Segregation		
Segregation practice is evident in the LGU Offices, Public market, Barangay, and Schools.	3.51	Implemented
Waste is segregated at least two types.	3.61	Implemented
Container for special waste is necessary wherever applicable.	3.09	Slightly Implemented
No unmanaged waste containers outside the LGU Offices, Public market, Barangay, and Schools.	3.57	Implemented
Material Recover Facility is available.	3.09	Slightly Implemented
Total Mean	**3.38**	**Slightly Implemented**
Reduce		
Avoidance of use of plastics in the LGU Offices, Public market, Barangay, and Schools.	3.06	Slightly Implemented
No more plastics used as secondary packaging material.	3.59	Implemented
Most foods are packed using biodegradable materials like biodegradable paper etc.	3.09	Slightly Implemented
Orient the LGU Offices, Public market, Barangay, and Schools on plastic avoidance policy.	3.61	Implemented
Implement of the LGU Municipal Ordinance on plastic avoidance in the public market, school canteens etc.	3.13	Slightly Implemented
Total Mean	**3.29**	**Slightly Implemented**
Recycling		
Recover and recycle papers (pots, charcoal, etc).	3.67	Implemented
Plastic waste turned into pillows as one of the examples.	3.44	Implemented
Drinking straws and Popsicle sticks made into tiny houses among others.	3.29	Slightly Implemented
Products out of recyclable materials show promise (profit, utility, etc).	3.40	Slightly Implemented
Material Recover Facility is available and functional.	3.14	Slightly Implemented
Total Mean	**3.39**	**Slightly Implemented**
Disposal		
Proper disposal of special wastes like (animal/ fish blood, tissue etc. that may cause foul odor and flies breeding)	3.06	Slightly Implemented
On site establishment of composting facilities for biodegradable wastes (any of these: compost pit, vermicomposting, etc.)	3.40	Slightly Implemented
Proper observance of collection schedules for specific category of segregated solid wastes.	3.12	Slightly Implemented
Designate drop-off center/MRF (ideal, sturdy, labeled, actual sales on recyclable waste).	3.41	Implemented
Residual waste due for collection is inside sacks to facilitate collection by the LGU.	3.46	Implemented
Total Mean	**3.29**	**Slightly Implemented**
Overall Mean	**3.34**	**Slightly Implemented**

fourth indicator, disposal, is 3.29, which is interpreted as "slightly implemented." As a result, while the extent of solid waste management of the Local Government Unit of Umingan is "Slightly Implemented" as measured by community residents, the result does not match the results in Table 2. a, where LGU personnel

are the ones who measure the implementation of solid waste management of the municipality of Umingan. The village of Umingan has only partially adopted the Solid Waste Management Program due to several factors. One cause is a lack of understanding and awareness among people in the community about the program's value and usefulness. Another cause is the community's budgetary constraints. Furthermore, the local administration lacks the necessary money and staff to implement the program. Finally, the lack of desire among the locals makes ensuring compliance and good program execution challenging. According to Batara (2017), community participation is the process through which individuals and families take responsibility for their health and welfare, as well as the health and welfare of the community, and build the capacity to contribute to their own and the community's growth. They gain a deeper understanding of their particular condition and find a way to overcome common difficulties. This empowers people to become agents of their development rather than recipients of development aid.

Table IV. The significant difference between the extent of implementation solid waste management

	Mean	*p*-value	Sig. (2-tailed)	Interpretation
LGU & Community Residents	.12	1.92	.07	Significant
Significant at 0.05level				

Table 4 shows the considerable disparity in the amount of implementation of the municipality of Umingan's solid waste management program as determined by LGU personnel and community people. According to the data, there is a significant difference in the responses of LGU personnel and community members, with a p-value of 1.92 and a significant 2 tailed of.07, both of which are greater than the specified alpha threshold of significance of 0.05. As a result, the disparity in the extent of implementation of the Local Government Unit of Umingan's solid waste management program as measured by Umingan residents is most likely due to the Local Government Unit's ineffective communication and engagement with the local community. This might result in a lack of awareness of the solid waste management program's aims and objectives, as well as an inability to effectively measure the program's progress. Furthermore, the Local Government Unit may not be actively monitoring and reviewing the program to verify that it is being executed as intended. Finally, the Local Government Unit may not be engaging the local community in meaningful ways to ensure that their feedback and input is taken into account in the program's implementation. Choi (2016) conducted a Case Study of Oslo, Norway entitled "The Environmental Effectiveness of Solid Waste Management" to investigate the concept of environmental effectiveness and its four determinants (regulatory structure, time, economic structure, and science). As a result, this research concludes that, when it comes to environmental effectiveness, it is clear that current waste management focuses on making more appealing ways is preferable to changing this situation in order to improve waste management.

Table V. Challenges Encountered by the by the Local Government Unit of Umingan

Indicators	Mean	Interpretation
Garbage cans are not Available.	3.23	Slightly Challenging
Schedules of collection garbage truck are not accessible.	3.54	Challenging
Incapable garbage Collection.	3.45	Challenging
Insufficient knowledge on how to recycle the Garbage.	3.27	Slightly Challenging
Insufficient knowledge in proper disposal of Garbage.	3.13	Slightly Challenging
Insufficient knowledge in Compositing.	3.18	Slightly Challenging
Lack of pits for the separation of wastes.	3.61	Challenging
Lack of dumping site.	3.38	Slightly Challenging
Source of wastes is not Classified.	2.94	Slightly Challenging
Lack of plan, alternative strategies and programs for waste disposal.	3.46	Challenging
Insufficient equipment for safe and appropriate waste disposal.	3.69	Challenging
Overall Mean	**3.35**	**Slightly Challenging**

It can be observed from Table 5 that the challenges faced by the personnel of the Local Government Unit of Umingan in implementing the solid waste management program have an overall mean of 3.35, which is interpreted as "slightly challenging" because the majority of the indicators fall under "slightly challenging" in terms of the challenges faced by the personnel of the LGU in implementing the solid waste management program of the municipality, despite of the fact that the problems are not as severe as they might seem. The LGU staff members noted that there were no trash cans in public areas and that the public had been unaware of the collection garbage truck schedules, particularly in the various barangays of Umingan, the outcome also demonstrates that rubbish collection is ineffective.   The study also reveals that the respondents have insufficient knowledge about proper composting of biodegradable materials that may use as fertilizers, lack of pits for the separate wastes, lack of dumping site, source of waste is not classified, lack of a plan, alternative strategies and programs for waste disposal, and insufficient

knowledge of how to recycle and dispose of the garbage properly. Despite the Municipal Ordinance No. 12, S., there are numerous possible reasons for the difficulties encountered in the municipality of Umingan for the solid waste management program in 2007. 2007. The most likely causes include a lack of money, a lack of public knowledge and education, poor enforcement of the ordinance, and a lack of resources to carry out the program effectively. Municipalities may also find it difficult to create a thorough waste management strategy that effectively meets all of the community's needs. Last but not least, there can be underlying social and cultural problems that make things difficult, such a lack of political will or community involvement. According to a 2017 study by Kumar et al., waste management must include trash segregation at the source to enable far more effective value extraction and recycling. It would be beneficial to separate moist (biodegradable) and dry (inorganic) garbage, and the waste generator should be responsible for doing so.

Table VI. The significant relationship between the challenges encountered and the extent of implementation

	Mean	*p*-value	Sig. (2-tailed)	Interpretation
Challenges & Extent of Implementation	0.10	.10	.04	Very High Positive
Significant at 0.05level				

Table 6 shows the significant relationship between the difficulties encountered and the degree of implementation of the solid waste management program by the LGU employees in the municipality of Umingan. Based on the findings, it is clear that there is a very high positive relationship between the difficulties encountered and t. The p-value is higher than the set alpha level of significance of 0.05 with a significant 2-tailed of.04. Some issues may be taken into account in this study, such as the lack of technical expertise and comprehension of the complexity involved in solid waste management among many employees of local government agencies. Their capacity to successfully implement solid waste management plans and strategies is so constrained. Additionally, LGUs frequently lack the human, financial, and technological resources required to implement solid waste management plans successfully. In rural or remote places where such resources are scarce, this can be especially difficult. It

may be challenging for LGUs to handle solid waste properly if there is inadequate infrastructure, such as roads, drainage systems, and garbage collecting systems. Lack of infrastructure can result in ineffective trash collection and disposal, which raises the pollution levels in the environment. The difficulties faced during a project or initiative's execution might have an incluence on how far it gets carried. Failure to effectively and promptly identify and resolve problems may result in project delays, cost overruns, and insufficient completion. On the contrary, if difficulties are handled successfully, a successful implementation can result with fewer delays and cost overruns. If failed to address, obstacles including a lack of funding, unwilling stakeholders, a tight budget, complicated rules, political intervention, and technological problems might prevent a project or initiative from being implemented. As a result, it is important to consider the connection between the difficulties faced and the level of implementation. Yagmaeian, K., Saeid, N., and Roudbari, A. (2017) found that the difficulties encountered during the implementation of solid waste management might significantly affect how far it is carried out. The implementation of solid waste management can be hampered by ineffective waste management systems, constrained landfill capacity, scarce resources, and out-of-date methods and technologies. Regulations, public perception, and financial limitations can all be challenges for garbage management. The adoption of solid waste management may also be less successful due to inadequate education, inappropriate garbage sorting, and a lack of sufficient infrastructure for collection and transportation. For solid waste management methods to be implemented as effectively as possible, it can be crucial to recognize the difficulties that must be overcome and to develop solutions.

IV. CONCLUSIONS AND RECOMMENDATIONS

The results and recommendations that came from the analysis and interpretation of the study's findings are presented in this chapter.

- Conclusions:

The study assessed the level of implementation of the solid waste management program in the

municipality of Umingan as measured by the local government unit of Umingan and the community residents of Umingan, Pangasinan, and the results show that the overall mean of 3.46 with the corresponding interpretation of "Implemented" while on the level of the solid waste management program of the municipality of Umingan the total weighted mean, as determined by community members, is 3.339 and is considered to be "slightly implemented."

Furthermore, the results support that there's a significant difference in the responses between the LGU Personnel and the community residents, where the p-value is 1.92 and the significant 2 tailed is.07, which is higher than the set alpha level of significance of 0.05. This is because the extent of the LGU of Umingan's solid waste management program's implementation is measured by the community residents of Umingan.

On the other hand, when it comes to the challenges faced by the Local Government Unit of Umingan and the community residents in the implementation of solid waste management in the municipality of Umingan, the findings show that the overall mean of the Local Government Unit personnel's of Umingan in the implementation of solid waste management program is 3.35, which is interpreted as "slightly challenging" because the majority of the indicators fall under "slighly challenging."

To support the aforementioned findings, the p-value in the significant relationship between the challenges encountered and the extent of implementation solid waste management program by the Local Government Unit of Umingan in the implementation solid waste management program is.10, which is higher than the set alpha level of significant of 0.05 with significant 2-tailed of.04 based on the findings.

- Recommendations

The researcher suggests that the study be improved to investigate the scope of the municipality of Umingan's solid waste management program, as this will act as a wake-up call to strengthen and improve Umingan's solid waste management program. It is recommended that the Municipal Ordinance No. 12, S. of Umingan be reviewed. 2007 that rigorous enforcement of the aforementioned ordinance is required.

The researcher suggests that the study be improved to investigate the scope of the municipality of Umingan's solid waste management program, as this will act as a wake-up call to strengthen and improve Umingan's solid waste management program. It is recommended that Municipal Ordinance No. 12, S. of Umingan be reviewed. 2007 that rigorous enforcement of the aforementioned ordinance is required.

The researcher also suggests that the municipality of Umingan build a Material Recovery Facility (MRF) for proper trash segregation and disposal. They proposed that the MRF be built to meet the demands of the local population and be capable of processing both biodegradable and non-biodegradable trash.

The researcher also recommended that the facility be outfitted with the required equipment and personnel to ensure that garbage gets disposed of in an environmentally responsible manner. Furthermore, the researcher proposed that the municipality give enough education and awareness initiatives to the community at large to ensure that trash segregation and disposal methods are implemented correctly.

The researcher also suggests further research to gain a thorough understanding of how to improve solid waste management through the use of advanced machinery.

ACKNOWLEDGMENT

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