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Household's Perception of Garbage Collection Practices in the Municipality of Tampilisan

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ABSTRACT

This study aimed to determine the garbage collection practices perceived by the household in the Municipality of Tampilisan, Zamboanga del Norte. The researcher applied the descriptive research method using the survey questionnaire. A 5-point Likert Scale questionnaire was used, and the respondents filled out the said questionnaire. Two hundred ninety-three household members participated in this research and were randomly selected from four barangays. Frequency count, percentage, and weighted mean were the statistical tools utilized by the researcher. Results revealed that most of the respondents are comprised of elementary and high school graduates and married. They are housewives and are directly involved in the solid waste disposal of their households. The Materials Recovery Facilities (MRF) in the Municipality are available for segregation, processing, and or buying areas for recyclables, but it is centralized and located in one barangay, Farmington. Further, 84.9% or 249 respondents are making compost of garden waste. However, the Materials Recovery Facilities of the Municipality are centralized for all 20 barangays. There were no MRF at their barangay level. Hence, it is recommended that there shall be a Materials Recovery Facility (MRF) for every barangay, not just a central MRF for the Municipality.

Keywords: *households, municipality, solid waste management practices, Tampilisan*

1. Introduction

From a global view, solid waste management is essential at the municipal level that local governments can offer to their citizens. Solid waste in the world's cities generates around 1.3 billion tons annually, expected to increase to 2.2 billion tons in 2025. The World Bank report, titled "What a Waste: A Global Review of Solid Waste Management" (Hoornweg & Tata, 2012), pointed out that global solid waste harms public health and the environment. Solid

waste is the primary source of methane, a GHG (Greenhouse Gas) emission that results in global warming and air pollution. *Solid waste* is a global problem that is best handled at the municipal level. Hence, municipal solid waste management should be implemented in the LGU and the barangay to encourage the municipalities to participate in solid and sustainable management practices.

The Philippine Congress approved Republic Act No. 9003 on 24 July 2000. It is an act that provides for an ecological program for the management of solid waste, the establishment of the required institutional structures and incentives, the declaration of individual actions as forbidden, the provision of sanctions, and the allocation of funds. The Act focuses on Municipal Solid Wastes (MSW), and it pertains to solid wastes generated by people's behavior inside the jurisdiction of local government units such as industrial, commercial, and households (Vivar et al., 2015).

The Municipal Ordinance is the basis for implementing the R.A. 9002. It enables the Municipality of Tampilisan to implement policies and guidelines to comply with residents and other stakeholders in the municipality and the barangays. However, since the Ordinance was approved in 2018, no research on household compliance, barangays, or municipal levels has been conducted. This is the research gap that this researcher hopes to fill by performing a study on the Municipality of Tampilisan's compliance with the Ecological Solid Waste Management Act of 2000.

The barangay communities belonging to the Municipality of Tampilisan in Zamboanga del Norte are expected to comply with the solid waste management in their barangay. It starts with the individual households doing their part in the compliance by segregating solid waste at source, letting the garbage truck, solid waste, or the households implementing the 3Rs like doing their composting or recycling and reusing their waste. However, if they cannot do this independently, the LGU-barangay can manage the other ecological solid waste. The barangay communities expect to cooperate.

Hence, the researcher's goal of this study is to determine how garbage collection practices are implemented in the municipality of Tampilisan, Zamboanga del Norte. The municipality is firmly implementing ecological solid waste management methods, but it is necessary to determine its community's solid waste management practices. Also, it is necessary to determine whether these practices are environmentally sound and sustainable.

2. Objectives

This study aimed to determine the garbage collection practices perceived by the households in the Municipality of Tampilisan, Zamboanga del Norte. Specifically, it seeks to answer the following objectives:

1. To determine the profile of household members as respondents in terms of highest educational attainment, relationship to household, and occupational category.
2. To determine the garbage collection practices of the municipality as perceived by the respondents.

3. Theoretical / Conceptual Framework

This study anchored on the Ecological Solid Waste Management Act of 2000 on RA 9003, establishes the legislative foundation for the Philippines' systemic, rigorous, and ecological solid waste management policy, maintaining public health and environmental conservation. It stresses the importance of developing the requisite structural structures and

incentives and introduces fines for actions that violate any of its requirements (NSWMC, 2005b).

The Republic Act 9003, the Ecological Solid Waste Management Act of 2000, establishes an ecological solid waste management scheme and the requisite fines and funds (Acosta et al., 2012). This law is implemented to solve the problems of waste management. In addition, RA 9003 created the National Solid Waste Management (SWM) Commission and prescribed the establishment of an SWM board in each local government unit (LGU) (i.e., province, municipality, city, and barangay) and the formulation of ten-year local ECOSWAM plans (Naz & Naz, 2008; Maskey et al., 2016).

Sapuay (2005) cited in Premakumara (2014) concluded that RA 9003 is the most comprehensive law on solid waste management that the country has ever produced. It was created with the best motives in solving the solid waste crisis of the Philippines. Whether there are still loopholes that need to be mended or provisions that need to be reviewed and revised, the law is in place. Therefore, it must be implemented to manage solid waste and protect the environment.

4. Research Method

This study utilized the descriptive survey as its main research design (Cabaron, 2023) using a standardized questionnaire. According to Bagolong (2017), the descriptive survey method is part of quantitative research. The survey method is where participants answer questions administered through interviews or questionnaires.

The respondents of the study included households who lived together in the same house or compound and shared the same housekeeping arrangements within the Municipality of Tampilisan. The study involved the Environmental Officer in the Municipality of Tampilisan and the four (4) randomly chosen Barangays. The researcher employed Slovin's formula to determine the number of households per barangay, resulting in 293 households.

For the garbage collection practices, the survey questionnaires were extracted from Gequinto (2017) for items 1-5. Then items 1-6 were extracted from the Tampilisan Municipal Ecological Solid Waste Management Ordinance. The statements asked the respondents to respond according to the garbage collection practices of the municipality/barangay in their area.

A frequency distribution was developed for the respondents' demographic profile, and the mean and standard deviation was computed. For the level of practices of the respondents in the Implementation of R. A. 9003 in terms of collection practices, the weighted mean was computed. A rating Scale and Verbal Interpretation were prepared for the survey questionnaire's 5- point Likert Scale for data analysis.

5. Results and Discussions

5.1 The Profile of the Respondents

Tables 1 to 4 presents the profile of the respondents in terms of highest educational attainment, relationship to household, civil status, and occupational category.

Table 1.

Profile of household members as respondents in terms of highest educational attainment

Highest Educational Attainment	Frequency	Percent
Elementary	101	34.47
High School	103	35.15
College	53	18.09
Post Graduate	35	11.95
Vocational	1	0.34
Total	293	100.00

Table 1 presents the household members' profiles regarding the highest educational attainment. On the one hand, it can be observed from Table 1 that the majority comprises elementary and high school graduates, comprising almost 70% of the total respondents. This implies that the household members may need to learn solid waste management guidelines in their municipality. On the other hand, college and post graduates comprised almost 30% of the household members. They are expected to be aware of solid waste management. These municipal leaders may lead the community to implement R.A. 9003 or Municipal Solid Waste Management of 2000.

Sukholthaman et al. (2017) cited the research conducted by Del Mundo et al. (2009), stating that educational attainment and family size are negatively correlated with solid waste management practices in Talisay but positively correlated with solid waste management practices in Balibago.

Table 2.

Profile of household members as respondents in terms of relationship to household

Relationship to Household	Frequency	Percent
Housewife	206	70.31
Husband	79	29.62
Grandparent	8	2.73
Total	293	100.00

Table 2 presents the profile of the household members as respondents in terms of their relationship to the household. Most of the respondents are housewives, comprising 70.31% of the total household members participating in this study. This implies that housewives are the ones who can implement municipal solid waste disposal for their households. This is because the housewife does the household chores that involve solid waste, such as cooking, doing laundry, and throwing off garbage, among other activities. The husbands are not very involved in the household chores; however, they can assist their wives in disposing of their garbage. Moreover, the barangay officials will do any intervention to ensure that they can address the implementation of R.A. 9003 to the housewives in the households.

Arı and Yılmaz (2016) analyzed the intentions and behaviors of recycling of 400 housewives living in Eskişehir, a metropolitan city in Turkey. The intentions and behaviors of women who spend a lot of time maintaining a habitable atmosphere (cleaning, cooking, etc.) are considered to be of great importance.

Table 3.

Profile of household members as respondents in terms of civil status

Civil Status	Frequency	Percent
Single	12	4.12
Married	268	92.10
Widow	11	3.78
Total	291	100.00

Table 3 shows the profile of the household members as respondents in terms of civil status. It can be observed that the overwhelming majority of 92% of married status. This implies that being married, the respondents are more involved in the solid waste disposal and can implement their barangay's municipal solid waste management. Married respondents are also

more responsible and are concerned about their households. Thus, they can be involved in interventions that will be introduced to improve the solid waste management system at the municipal level.

Al-Khatib et al. (2015) in their study found that married participants showed more satisfaction with the level of solid waste collection services in their area (80.9%) than single participants and ever married (71.6%, 75.3%, respectively p = .001).

Table 4.

Profile of household members as respondents in terms of occupational category

Occupation	Frequency	Percent
Manager	22	7.51
Professionals	29	9.90
Technical Associate Professionals	4	1.37
Clerical and Supports Workers	31	10.58
Service & Sales Workers	17	5.80
Skilled Agri, Forestry, and Fishery	167	56.10
Craft and related trades	1	0.34
Elementary Occupation	18	6.14
Total	293	100.00

Table 4 presents the profile of the household members as respondents in terms of occupational category. It can be observed that 56.10% of the respondents are skilled workers in Agriculture, Forestry, and Fishery. This implies that most workers are not in their homes during the day but working in the field, particularly the male household members. Thus, only the housewives are in their homes and do the household chores that produce solid waste.

Because most trained people prefer to relocate to better-paying areas, trash firms have challenges keeping sufficient skills and experience. Managers' and supervisors' jobs are expensive, time-consuming, and challenging, partly because they must work in many locations. In Ghana, there is relatively little literature on the views and opinions of garbage industry managers and supervisors on urban waste management techniques (Lissah et al., 2021).

Table 5.

Household's Perception on Garbage Collection Practices of the Municipality

Statements	AWV	Verbal Description
1. Promote the "3R's"(reduce, reuse, and recycle) locally when collecting solid waste	3.87	Often Practiced
2. The solid wastes are collected daily at the designated area.	2.93	Sometimes Practiced
3. The solid wastes are properly handled by collectors and other personnel who are equipped with protective equipment.	3.06	Sometimes Practiced
4. The solid waste is segregated and placed in separate containers with marking for re-use, recycling and composting	3.64	Often Practiced

5. There is Materials Recovery Facilities for segregation, processing, and or buying area for recyclables.	3.86	Often Practiced
6. The use of the separate collection, schedules and/or separate collection trucks, compactors, haulers, and units are required for specific types of waste.	3.07	Sometimes Practiced
7. Vehicles are designed to consider road size, condition and capacity to ensure the safe and efficient collection and transport of solid wastes.	2.94	Sometimes Practiced
8. The waste compartment has been covered to ensure the containment of solid waste while in transit.	3.07	Sometimes Practiced
9. The collection schedule is thoroughly disseminated to the Barangay.	3.82	Often Practiced
10. The Municipal Government prepares the schedule for the segregated collection and transport of solid waste.	3.84	Often Practiced
Mean	3.41	Often Practiced

Table 5 presents the garbage collection practices of the Municipality of Tampilisan. It can be noted from Table 5 that the Grand Mean is 3.41, which is interpreted as Often Practiced. A rating of Often Practiced means that the specific situation cited complied with its garbage collection four (4) times a week. None was rated Always Practiced among the garbage collection practices in Table 5. It can be observed that there are garbage collection practices that got a rating of Often Practiced. These are statements Numbers 1, 4, 5, 9, and 10, giving a total of 5 statements that asked the household members to rate the garbage collection practices of the Municipality.

For instance, statement # 1 asked the respondents if the Municipality promotes the garbage collection practice of the 3Rs (Reduce, Reuse, and Recycle). This was rated as Often Practiced. This implies that the 3Rs are being promoted at the municipal level, and the households perceive this as often practiced, which is a good garbage collection practice of the Municipality.

Another garbage collection practice of the households is the segregation of solid waste into separate containers especially marked for the 3Rs, reuse, recycling, and composting. This was likewise rated as Often Practiced. This implies that at the municipal level, the households have been guided in the important aspect of garbage collection: segregation. Since the garbage is segregated, the problem of biodegradable and non-biodegradable solid waste is lessened. Materials Recovery Facilities are available for recyclable segregation, processing, and/or buying areas. This garbage collection practice was rated as Often Practiced, implying that the households appreciate the presence of Materials Recovery Facilities in their Municipality.

However, some garbage collection practices were rated as Sometimes Practiced. These are statements Nos. 2, 3, 6, 7, and 8. A rating of Sometimes Practiced refers to a specific situation cited and is compiled three (3) times a week in the garbage collection practices of the Municipality. For instance, the solid wastes in the Municipality are collected daily in designated areas. However, this garbage collection practice was rated as Sometimes Practiced. This implies that the collection system is not observed as scheduled, which will cause some problems for households with uncollected garbage. Other garbage collection practices might cause some

issues since these are rated. Sometimes practices like safe and efficient garbage collection will be affected when vehicles and garbage trucks are unreliable in scheduling.

Article II, Rule 6, Section 10 of RA 9003, states that collecting segregated solid waste shall be conducted at the barangay (lowest administrative unit) level specifically for biodegradable, compostable, and reusable waste. Also, Section (17c) also states that the barangay should ensure 100% waste collection efficiency. Waste collection collects solid waste from the point of production (residential, industrial, commercial, institutional) to the end of treatment or disposal. The municipal collects solid waste in several ways: House-to-House, community bins, and Curbside Pick-Up (Hoornweg & Bhada-Tata, 2012).

6. Conclusion and Recommendation

Based on the findings of the study, the researcher concluded that the collection system is not observed as scheduled, which will cause some problems for households with uncollected garbage. Other garbage collection practices might cause some issues since these are rated. Sometimes practices like safe and efficient garbage collection will be affected when vehicles and garbage trucks are unreliable in scheduling. Moreover, the Materials Recovery Facilities of the Municipality are centralized for all 20 barangays. There were no MRF at their barangay level. Hence, it is recommended that there shall be a Materials Recovery Facility (MRF) for every barangay, not just a central MRF for the Municipality.

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