

**PERCEPTION OF THE KNOWLEDGE, AWARENESS AND PRACTICES
ON SOLID WASTE MANAGEMENT IN BUENASUERTE,
PILAR, BOHOL**

**College of Agriculture and Natural Resources
BOHOL ISLAND STATE UNIVERSITY
Zamora, Bilar, Bohol**

RUFA C. AMOLATO

JUNE 2022

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PILAR, BOHOL

A Thesis
Presented to the Faculty of the
College of Agriculture and Natural Resources
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Zamora, Bilar, Bohol

In Partial Fulfillment
of the Requirements for the Degree
Bachelor of Science in Environmental Science

RUFA C. AMOLATO

June 2022



APPROVAL SHEET

This thesis entitled **“PERCEPTION OF THE KNOWLEDGE, AWARENESS, AND PRATICES OF SOLID WASTE MANAGEMENT IN BARANGAY BUENASUERTE PILAR BOHOL”**, prepared and submitted by **RUFA C. AMOLATO** in partial fulfillment of the requirements for the degree Bachelor of Science in Environmental Science has been examined and recommended for acceptance and approval for oral defense.

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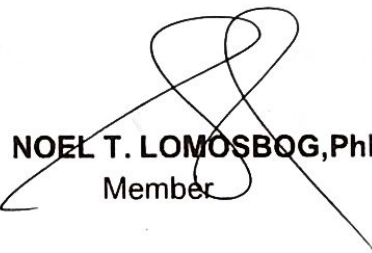

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ABSTRACT

This study measured the resident's perception of the knowledge awareness and practices on solid waste management in Barangay Buenasuerte, Pilar, and Bohol. This study employed a stratified purposive selection of the respondents that were given a questionnaire through home visitation. The level of perception in terms of knowledge, awareness, and practices was highly knowledgeable, highly aware, and highly practiced. Educational attainment has greatly affected respondent's knowledge, awareness, and practices. Similarly, awareness and practices appeared to have a correlation which implies that the higher the knowledge and awareness level of the respondents on Solid Waste Management, the more they will practice it. The study suggests that information and education campaigns is critical in the overall success of the implementation of Solid Waste Management.

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Chapter 1

THE PROBLEM AND ITS SCOPE

Rationale

Solid waste management is a challenge for the cities' authorities in developing countries mainly due to the increasing generation of waste, the burden posed on the municipal budget as a result of the high costs associated with its management, the lack of understanding over a diversity of factors that affect the different stages of waste management and linkages necessary to enable the entire handling system functioning. An analysis of literature on the work done and reported mainly in publications from 2005 to 2011 related to waste management in developing countries showed that few articles give quantitative information.

People's perceptions of solid waste management knowledge, awareness, and practices, which is the study's major factor, constitute the basis for this research. Socio-demographic status, practices, and degrees of awareness are the variables that will be weighed to answer the study's primary goal.

The study's overall goal is to determine people's views of awareness, practices, and knowledge on the SWM Ordinance's implementation in Barangay Buenasuerte, Pilar, Bohol, and people's diverse practices, knowledge, and awareness, in order to estimate the community's welfare effects. The results of this study were utilized to help build local waste management policies and programs, emphasizing activities that may enhance the sector. The data were examined and analyzed using descriptive and inferential statistics.

Literature Background

The following are the related readings that justify the conduct of the study.

Ecological Solid Waste Management Act of 2000 or RA 9003 is an act providing for an ecological solid waste management program, creating the necessary institutional mechanisms and incentives, declaring certain acts prohibited, and providing penalties. Appropriating funds, therefore, and for other purposes.

Section 45 under the Presidential Decree No. 1152, which Solid Waste disposal shall be by sanitary landfill, incineration, composting, and other methods as may be approved by a competent government authority

Section 46. Sanitary Landfills. — Local governments may operate one or more sanitary landfills, including private individuals, corporations, or organizations. Any entity proposing to operate a sanitary landfill shall submit to the appropriate government agency an operational work plan showing, among other things, a map of the proposed work location, disposal areas for rubbish, garbage, refuse, and other waste matter; and the equipment or machinery needed to accomplish its operations. In no case shall landfill or work locations under this Section be located along any shore or coastline, or along the banks of rivers and streams, lakes, throughout their entire length, in violation of any existing rules and regulations.

Section 47. Incineration and Composting Plants. — The installation and establishment of incineration or composting plants or the alteration/modification

of any part thereof shall be regulated by the local governments concerned in coordination with the National Pollution Control Commission.

The following related literature provided background information to this research.

Solid waste management is one of the basic essential services provided by municipal authorities in the country to keep urban centers clean. However, it is among the most poorly rendered services in the basket—the systems applied are unscientific, outdated, and inefficient; population coverage is low, and the poor are marginalized. Waste is littered all over, leading to unsanitary living conditions. Municipal laws governing the urban local bodies do not have adequate provisions to deal effectively with the ever-growing problem of solid waste management. With rapid urbanization, the situation is becoming critical. The urban population has grown fivefold in the last six decades, with 285.35 million people living in urban areas per the 2001 Census (Asnani, 2006).

Furthermore, plastic, paper, glass, metal, and organic garbage are some of the different types of waste. Radioactive, flammable, infectious, toxic, or non-toxic wastes may be classified according to their hazard potential. The origin of the garbage, whether industrial, home, commercial, institutional, or building and demolition, may also be classified (LeBlanc, 2020).

Reduce, reuse, recycle is the flagship project of the Philippine nation, which aims to reduce both traditional wastes (paper, plastic, scrap metal, kitchen waste) produced and even the second-generation waste (hazardous waste) that has been enshrined by the Ecological Solid Waste Management Act of 2000

(Antonio, 2009). Reduce pertains to minimizing the waste generated by an individual, reuse pertains to using the item again before entering waste circulation, and recycle pertains to creating a product out of recyclable materials instead of throwing recyclable items away (Solar Schools, n.d.)

Raising public knowledge about municipal solid waste management is integral to waste management success. Key stakeholders must know a city's waste management activities and comprehend the advantages of proper solid waste management. Although numerous obstacles exist when raising awareness about solid waste management, they can be addressed through various communication approaches.

The following related studies justified the conduct of this study:

A study by Mrayyan and Handi (2006) on waste management approaches in industrialized zones in Jordan revealed that education and awareness do not only pertain to industries involved in the study but also consume their product. They also added that achieving such. It would play substantially in accomplishing sustainable industrial waste management. More so, they also elucidated that public awareness of waste emission.

According to Sujauddin et, al. (2008), waste generation is influenced by family size, education level, and monthly income. Household attitudes related to waste separation are affected by the active support and investment of a real estate company and community residential committees' involvement in public participation.

Tadesse et, al. (2007) analyzed the factors influencing household-waste disposal decision-making. Results showed that the supply of waste facilities significantly affects waste disposal choice. An inadequate supply of waste containers and a longer distance to these containers increase the probability of waste dumping in open areas and roadsides relative to the use of communal containers.

As a case study conducted by Tiwari et, al. (2014) in solid waste management, provision of litter bins in public places shall be made, and there will be compulsory segregation at all the sources. Public awareness, political will, and participation are essential for successfully implementing the legal provisions and having an integrated approach toward sustainable management of municipal solid wastes. A review made by Atienza (2011) on the waste management system in the Philippines consists of reviews on the policies in cohort to waste management from 1938 to 2001, including the Ecological Solid Waste Management Act. It presents the potential of recycling in addressing both waste management issues and improving poverty issues. Thus, the study concluded that the application of good governance, active participation of various stakeholders, robust awareness campaign, and promotion and the utilization of innovative and appropriate technologies are needed to achieve feasible waste management and sustainable industry of recycling.

THE PROBLEM

Statement of the Problem

This study aimed to determine the perception of the knowledge, awareness, and practices on solid waste management among Buenasuerte, Pilar residents.

Specifically, it answers the following questions:

1. What is the profile of the respondents in terms of?
 - 1.1 age;
 - 1.2 sex;
 - 1.3 highest educational attainment?
 - 1.4 seminars, training and any activities attended related to protection environmental protection and conservation?
2. What is the respondents' level of perception on the knowledge on solid waste management of the respondents?
3. What is the level of the respondents' awareness on proper solid waste management in the following aspects?
 - 3.1 reduce;
 - 3.2 reuse; and
 - 3.3 recycle?
4. What is the extent of the respondents practice on solid waste management in the following dimensions:
 - 4.1 economic.
 - 4.2 environmental.

4.3 health; and

4.4 social dimension?

5. Is there any significant difference in knowledge, awareness and practices on waste management when grouped according to profile of the respondents?

6. Is there a significant correlation between the respondents' level of awareness and their practices on solid waste management?

Null Hypotheses

H₀₁. There is no significant difference in knowledge, awareness, and practices on waste management when grouped according to profile of the respondents.

H₀₂. There is no significant correlation between the respondents' awareness level and their practices on solid waste management.

Significance of the Study

The results may be beneficial and most advantageous to the Barangay Local Government Unit because the researcher could aid the community government in assessing the residents' awareness of solid waste management.

Social impact. The research would be helpful to the barangay local government unit, student researchers, and solid waste management. It would also serve as a reference to the students who will be conducting research that is related to this study.

Students. The study would be helpful to the students as it would serve as their reference or guideline for conducting another study on solid waste management.

Health impacts. With the accumulated results of this study, health measures attuned to results would help the community towards a healthy and sound environment.

RESEARCH METHODOLOGY

Design

The study utilizes the descriptive-correlation research design, which is used to relate two or more variables. This was used to find a significant relationship between the level of knowledge and the respondents' awareness and practices on solid waste management. The profile of the respondents was correlated with their view or perception of the knowledge, awareness, and practices of solid waste management.

Environment and Participants

The study was conducted at Buenasuerte, Pilar, Bohol. It is an agricultural barangay dealing with the problem of solid waste management.

The research locale has 2,105 residents living in 439 households. The barangay is an agricultural barangay that deals with the problem related to solid waste management. They are composed of plains and grasslands with minute terrains selected from households of Buenasuerte, Pilar, Bohol as research participants.



Figure 1. Location map of the study site

Determination of sample size and respondents

This study involved 209 purposively selected households of Buenasuerte Pilar as research participants. T

the selections used the stratified purposive sampling technique. They were tasked to answer a survey questionnaire about the level of their knowledge, awareness, and practices on proper waste management.

The researcher used the Slovin's formula in computing the sample size.

The formula is shown below:

$$n = \frac{N}{1 + Ne^2}$$

$$n = 439 / (1 + 439 \times (0.05)^2)$$

$$n = 209$$

Instruments

The main instrument used in gathering data is a revised survey questionnaire with four parts. The revised self-made survey questionnaire was adopted from different research studies.

The first part of the questionnaire focused on the demographic profile of the respondents. The second part is adapted from Abulucion et al. (2012) and Madrigal (2018), which has 25 statements concerned about the respondents' level of knowledge regarding solid waste management. The third part focused on assessing the respondents' awareness of proper waste management in the following aspects: reduce, reuse, and recycle. The last part focused on assessing the extent of waste management practices in the four (4) dimensions such as economic, environmental, health, and social.

Data Gathering Procedures

The researcher sought approval from the Chairperson of the Forestry and Environmental Science Department and the Dean of the College of Agriculture and Natural Resources. The same letter was sent to the Campus Director of Bohol Island State University-Bilar Campus, asking permission to conduct the study outside the university premises. The same letter was sent to the Local Chief Executive and the Punong Barangay of Buenasuerte Pilar, Bohol, asking permission to conduct the study. For ethical consideration, the researcher also sent an Informed Consent Form to the respondents. Enclosed in the letter is the assurance that all responses were treated with the utmost confidentiality. The researcher has sought assistance from the Purok-In-Charge to distribute the

questionnaires. The survey questionnaires were distributed through home visitation in response to the social distancing protocol. However, the proper observance of social distancing and health precautionary measures is necessary. Pilot testing is to be conducted first to test whether the tool needs revision or not in gathering the data. The researcher will explain the mechanics of the study to ensure. After retrieving the questionnaire, the data were consolidated and interpreted. Figure 2. The researcher explained the mechanics of the study to ensure credible survey result.



Figure 2. The researcher conducting the survey interview

Statistical Treatment

The following tools were used in the analysis of data in this study:

Frequency and percentage were used to determine the demographic profile of the respondents in terms of age, gender, and highest educational attainment.

$$P = \frac{f}{n} \times 100$$

Where:

- P = percentage
 f = frequency of the respondents
 n = number of cases

Weighted Mean, Standard Deviation, and Verbal description were used to determine the respondents' level of knowledge, degree of attitude, and practices on solid waste management.

$$x = \frac{\sum fx}{f}$$

Where:

- x = weight, i.e. 1, 2, 3
 f = frequency
 $\sum fx$ = summation of weighted means

The researcher used the 5-point Likert Scale, Table 1 presents the nominal values and interpretation

Table 1
Descriptive Interpretation Level

	Scale	Range	Description	Interpretation
knowlegde	5	4.20-5.00	Excellent	Very Highly knowledgeable
	4	3.40-4.19	Very High	Highly knowledgeable
	3	2.60-3.39	High	Moderately knowledgeable
	2	1.80-2.59	Low	Poorly knowledgeable
	1	1.00-1.79	Very Low	Not Aware
Awareness	5	4.20-5.00	Strongly Agree	Very Highly Aware
	4	3.40-4.19	Highly Agree	Highly Aware
	3	2.60-3.39	Moderately Agree	Moderately Aware
	2	1.80-2.59	Slightly Agree	Poorly Aware
	1	1.00-1.79	Disagree	Not Aware
Practices	5	4.20-5.00	Always	Fully Practiced
	4	3.40-4.19	Often	Highly Practiced
	3	2.60-3.39	Sometimes	Moderately Practiced
	2	1.80-2.59	Rarely	Poorly Practiced
	1	1.00-1.79	Never	Not Practiced

The study used a ONE-WAY ANOVA test to tell whether the results are significant overall but exactly where those differences lie. After finding out the significant results through ANOVA, run Tukey's HSD to find out which specific groups' means. The Tukey Test (or Tukey procedure), also called Tukey's Honest Significant Difference test, is a post-hoc test based on the studentized range distribution. After running an ANOVA and finding significant results, then have run Tukey's HSD to find out which specific groups' means (compared with each other) are different. The test compares all possible pairs of means.

The formula is:

$$HSD = q \sqrt{MS_w/n}$$

Where:

q =the standardized range statistics

MS_w =The mean square for within groups from ANOVA

n =the number of subjects in each group

Meanwhile, the study used the Pearson Product Moment Correlation Coefficient. The study used a Pearson Product Moment Correlation Coefficient to determine the significant correlation between the respondents' awareness level and practices on ecological solid waste management practices.

The formula is:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}}$$

Where:

r =Pearson-product moment correlation coefficient

$\sum x$ =sum of x

$\sum y$ =sum of y

$\sum xy$ =sum of the products between x and y

$\sum x^2$ =sum of x squared

$\sum y^2$ =sum of y squared

n =number of paired observations

Operational Definition of Terms

3Rs- reduce, reuse and recycle – all help to cut down on the amount of waste we throwaway. They conserve natural resources, landfill space and energy. Plus, the three R's save land and money communities must use to dispose of waste in landfills.

Anthropogenic Impacts- Humans impact the physical environment in many ways: overpopulation, pollution, burning fossil fuels, and deforestation. Identifies the human daily activities as a steward of the environment.

Biodegradable- the breakdown of organic matter by microorganisms, such as bacteria and fungi.

Disaster- a serious problem occurring over a short or long period of time that causes widespread human, material, economic or environmental loss which exceeds the ability of the affected community or society to cope using its own resources caused by natural phenomena and climate change.

Garbage- a waste material that is discarded by humans, usually due to a perceived lack of utility.

Hazard- substances, events, or circumstances can constitute hazards when their nature would allow them, even just theoretically, to cause damage to health, life, property, or any other interest of value.

LGU- a local government unit coordinates barangays for implementation of laws and regulations.

Non- Biodegradable- describes polymers that do not easily break down to a natural such as plastics, cans, bottles, unused clothes, shoes, and etc.

Pollution- the introduction of harmful materials into the environment caused by over consumption of energy, burning of fossils, deforestation, and throwing of garbage anywhere.

Population- a distinct group of individuals, whether that group comprises a nation or a group of people with a common characteristic. The higher the population, the more waste generated.

Regulation- the management of complex systems.

Rural- geographic area that is located outside towns and cities, few house, less population, less garbage, and less pollution.

SPSS version 25- also called as Statistical Package for Social Sciences is a software package used in statistical analysis of data.

SWM- All aspects of solid waste management (SWM) planning are predicated on sound knowledge of the waste components and quantity that need to be managed.

Tukey's (HSD) – also called as Tukey's Honest Significant Difference test determine which groups in the same differ. While ANOVA can tell the researcher whether groups in the same differ, it cannot tell the researcher which group differ. Tukey's HSD can clarify which groups among the sample in specific have significant differences.

Urbanization- a population shift from rural to urban areas, the corresponding decrease in the proportion of people living in rural areas, and the ways in which societies adapt to this change.

Waste- is unwanted or unusable materials. Waste is any substance which is discarded after primary use, or is worthless, defective and of no use.

Chapter 2

PRESENTATION OF DATA AND ANALYSIS OF FINDING

This chapter deals with data presentation gathered from the actual survey interview aided by a qualitative questionnaire to the residences in Barangay Buenasuerte Pilar, Bohol. By using the purposive sampling technique, these 209 purposively selected households were involved.

Demographic Profile of Respondent's

The demographic profile contained information about the residents' age, gender, highest educational attainment, and seminars/training/activities attended related to Environmental Protection. Profiling is essential as the basis of respondents perception of knowledge, awareness and practices on solid waste management.

Table 2 shows the category of the demographic profile, such as age and gender highest educational attainment. Profiles of the respondents were measured according to the frequency of their responses and their percentage. Based on the result majority of the respondents were 31-41 years old, females with the percentage of 60.9% and 63.4 % were high school graduate

Table 2
Demographic Profile of the Respondents
n=209

Category	Frequency	Percentage %
Age		
30 yrs. Old and below	40	19.3
31-40 years old	85	41.1
41-50	45	21.7
51-60	30	14.5
61 and above	6	2.9
Total	209	99.5
Gender		
Female	126	60.9
Male	80	38.6
Total	209	99.5
Educational attainment		
Elementary Graduate	17	28.3
High School Graduate	106	63.4
College Graduate	84	8.3
Total	209	99.5

Knowledge on Ecological Solid Waste Management

Table 3 presents the respondents' perception of the knowledge of solid waste management. Based on the data gathered, knowledge of laws and regulations on solid waste management are stated mostly as highly knowledgeable. The majority of the respondents were highly knowledgeable, but they were moderately in Republic Act 9003. This implies that solid waste management is inadequate access to basic knowledge and does not get into the technicality of the law itself. However, nonetheless, the respondents have

educational attainment, which explains that they are knowledgeable on solid waste management policies. Based on the result, it was found that the respondents' knowledge level was highly knowledgeable. As the demographic profile, the respondent's majority were highly knowledgeable about school graduate, which affects their level of ecological solid waste management.

Table 3
Respondents' Level of Perception of the Knowledge on
Solid Waste Management
n=209

Category	WMS	Descriptive Interpretation
1 Republic Act 9003	3.18	Moderately Knowledgeable
2 Solid Waste Management (SWM)	3.38	Moderately Knowledgeable
3 Policies on SWM program	3.43	Highly Knowledgeable
4 Purpose of the management on implementing SWM at community	3.50	Highly Knowledgeable
5 Importance of SWM	3.48	Highly Knowledgeable
6 Practicing SWM saves money and energy	3.56	Highly Knowledgeable
7 The roles and responsibilities of the community towards SWM program	3.54	Highly Knowledgeable
8 Implementation will be successful and effective if concerned people will participate	3.76	Highly Knowledgeable
9 Proper disposal of garbage	3.87	Highly Knowledgeable
10 Discipline on SWM matters a lot	4.06	Highly Knowledgeable
11 Possible illnesses that you can get whenever trashes are not properly disposed	3.95	Highly Knowledgeable
12 Before throwing garbage, it is a must to read those trashcan label for segregation	3.90	Highly Knowledgeable
13 Importance of recycling	4.12	Highly Knowledgeable
14 Identification if biodegradable from non-biodegradable	4.27	Very Highly Knowledgeable
15 Importance of segregation	4.20	Highly Knowledgeable
16 Waste minimization practices like reuse, recycle, and reduce	4.16	Highly Knowledgeable
17 Schools' orientation on SWM program	4.16	Highly Knowledgeable
18 Practices on SWM implemented in school	4.11	Highly Knowledgeable
19 Advantage and disadvantages of SWM	4.00	Highly Knowledgeable
20 SWM program is a big help in environment	4.12	Highly Knowledgeable
21 Degradation/destruction that wastes can cause to the environment	4.15	Highly Knowledgeable
22 "Clean as You Go Policy"	4.11	Highly Knowledgeable

23	Composting method for organic waste	4.12	Highly Knowledgeable
24	Sanctions for violation of not disposing garbage properly	4.01	Highly Knowledgeable
25	Financial resource which can be generated from wastes	4.05	Highly Knowledgeable

Self-Awareness on Ecological Solid Waste Management

Table 4 presents the perceptions of self-awareness of the respondents on Ecological Solid Waste Management. Based on the data gathered, all respondents were highly aware, and the rest were highly aware of Solid Waste Management. Residence of Highly aware of the advantage of using eco-friendly paper bags instead of plastic. Some respondents prefer using eco bags since they are washable and paper bags can be burned quickly in their backyard. So were highly aware of the importance of reusing, reducing, and recycling. In the demographic profile, most of the respondents were females. It can affect their awareness of reusing some stuff instead of throwing garbage.

Table 4
Respondents' Level of Awareness on Solid Waste Management
n=209

Category	WMS	Descriptive Interpretation
A. REDUCE		
1. I am aware that reducing the use of plastic bags is environmentally friendly.	4.07	Highly Aware
2. Using paper bags is a good alternative of using plastic when shopping.	4.09	Highly Aware
3. Reducing the use of plastic bottles decreases stockpile of garbage.	4.02	Highly Aware
4. I am aware that reducing wastes is beneficial to the community.	4.05	Highly Aware
5. At home, I encourage my family to avoid using disposable table wares	4.06	Highly Aware

B. REUSE

1. Reusing old clothes is cost-saving and practical.	4.00	Highly Aware
2. Reusing scratched papers is economically-friendly.	4.04	Highly Aware
3. Reusing empty jar for other purposes reduces the generation of non-biodegradable waste.	4.01	Highly Aware
4. Repairing usable household cleaning tools help save money and decreases household garbage.	3.99	Highly Aware
5. Keeping old but usable items saves dumpsite space.	3.98	Highly Aware

C. RECYCLE

1. Recycling items is cost-saving.	4.01	Highly Aware
2. Recycling is the most commonly-used waste management practices.	3.99	Highly Aware
3. It is essential to motivate my family on recycling waste materials at home.	4.02	Highly Aware
4. Recycling items provides more opportunities to reduce wastes.	4.01	Highly Aware
5. Recycling allows household members to value their belongings and respond to environmental concerns.	4.00	Highly Aware

Self- Assessment on Ecological Solid Waste Management Practices

Table 5 presents the perceptions of practices of the respondents on ecological solid waste management. Based on the data gathered, most of the respondents in the barangay were found out highly practiced in Solid Waste Management. As per the data result, this found that the residents were highly practiced in disposing of biodegradable and non-biodegradable unto its final waste collection point and burying the waste for backyard composting. As to demographic profile, most of the respondents were practicing at home. The majority of them they were not practiced segregation of biodegradable and non-biodegradable on solid waste management

Table 5
Respondents Level of Practice on Solid Waste Management
n=209

SWM Practices on Different Dimensions	WMS	Descriptive Interpretation
Economic Dimension		
1. I refrain from buying disposable products such as food containers, cellophanes among others, instead I bought reusable ones.	3.98	Highly Practiced
2. At home, I instruct my children to keep empty bottles and plastic containers and sold them to garbage buyers.	3.93	Highly Practiced
3. I utilize empty big plastic containers to be used as trash bins.	4.00	Highly Practiced
4. I bring my reusable items to junkshops and sold them at reasonable price.	3.80	Highly Practiced
5. I encourage my family and my neighbors to wise utilization of garbage and make money from it.	4.08	Highly Practiced
Environmental Dimension		
1. I do proper waste disposal because it is important for protection and sustainability of our environment.	4.26	Highly Practiced
2. We have a compost pit in our backyard where we properly dispose all our wastes.	4.22	Highly Practiced
3. I prefer burning dried leaves rather than burning plastic and rubberized materials.	4.26	Highly Practiced
4. I apply the integrated approach of organic composting of garbage that are used in home gardening	4.12	Highly Practiced
5. My family use to dispose our wastes that minimize environmental damage.	4.05	Highly Practiced
Health Dimension		
1. I am equipped with personal protective paraphernalia like gloves, masks, and boots in collecting wastes.	3.71	Highly Practiced
2. I dispose my leftover foods in the right container/receptacle.	3.82	Highly Practiced
3. I clean and wash the trash bins or receptacles after garbage disposal to avoid unpleasant smell.	3.86	Highly Practiced
4. I use rubbing alcohol in sanitizing my hands before and after collecting wastes.	3.94	Highly Practiced
5. I use to dispose tin cans properly so that no mosquito can thrive and reduce the risk of dengue fever and other illnesses.	3.95	Highly Practiced
Social Dimension		
1. I participate in a community-based educational forum on ecological protection and conservation.	3.83	Highly Practiced
2. I join waste management programs implemented by the Local Government through the motivation of our Barangay Officials.	3.92	Highly Practiced
3. I use to practice "CLAYGO" or "Clean as You Go" wherever I am and encouraged my fellows to do the same.	3.99	Highly Practiced
4. I set myself as an example cooperative participation on waste management in our Barangay.	4.15	Highly Practiced

5. I share valuable ideas to my neighbors on the positive effects of proper waste management to the community.	4.18	Highly Practiced
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Statistical Result on Significant Difference

Table 6 shows the significant difference in knowledge, awareness, and practice. When grouped according to profile respondents, respondents of perception were highly knowledgeable, highly aware, and highly practiced. Based on the result of the demographic profile of the respondents, such as age, gender, and educational attainment has not affected their perception of knowledge, awareness, and practice. Most of the respondent's households were highly practiced in solid waste management. Most respondents were aware of how essential the reuse is in conserving the environment.

Table 6
Analysis on the Significant Difference in Three Perceptions on SWM when Grouped According to Profile of the Respondents

Category (Perceptions)	Tukey's Grouping	Significance
Knowledge		
HEA- Highest Educational Attainment		0.000
HEA- High School Graduate	3.784151 ^a	
HEA- Elementary Graduate	3.420000 ^b	
HEA- College Graduate	4.093333 ^a	
Awareness		
HEA- Highest Educational Attainment		0.001
HEA- High School Graduate	3.982540 ^a	
HEA- Elementary Graduate	3.952941 ^b	
HEA- College Graduate	4.061635 ^a	

Note : superscript (a-b) denotes significant difference

Statistical Result on Significant Relationship

Table 7 shows the analysis of the relationship between the knowledge and awareness of the respondents. The result shows a correlation between respondents' knowledge and awareness of solid waste management, which

indicates that respondents affected their knowledge and awareness, the knowledge their learning according to their level of awareness. Therefore awareness leads to practicing something.

Table 7
Analysis on the Significant Relationship between the Respondents' Awareness Level and their Practices

	Mean	Number of Respondents	Computed r	Significant level
Awareness	4.02	207	0.526**	0.00
Practices	4.00	207		

***Correlation is significant at the 0.01 level 2-tailed*

Chapter 3

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Findings

The respondents included a few students, farmers, mothers/homemakers, and some barangay officials. An interview guided by the researcher with a structured qualitative questionnaire was conducted.

The study employed descriptive analysis based on the frequency of information collected from responses from retrieved questionnaires filled up by respondents. The demographic profile in terms of age showed that most respondents are 31- 40 years old and were high school graduates.

The majority of the respondents were highly knowledgeable but moderately knowledgeable in Republic Act 9003. In ecological waste management law, this implies that information on solid waste management is inadequate access of knowledge were basic and did not get into the technicality of the law. Furthermore, the profile of the respondents, especially the highest educational attainment, is not significant to respondents' perception of knowledge, awareness, and practice on solid waste management. The higher education attained, the greater their awareness of solid waste management. Null hypothesis (H_{01}) rejected knowledge awareness and practiced grouped according to the profile of the respondents. Based on the result of the study, there is a significant correlation between the respondents' awareness level and their practice. The null hypothesis (H_{02}) is accepted when respondents' awareness level and practice correlate.

CONCLUSIONS

Most respondents were 31-40 years old and high school graduate females. The result showed that respondents were highly knowledgeable and, highly aware, highly practiced. Respondents' profile significantly relates to their perception of knowledge awareness and practice, especially their highest education. It indicates that levels of knowledge, awareness, and practice significantly differ according to their level of education. Awareness of the respondents has a significant result on their practice too. The more awareness they have of solid waste management, the greater knowledge that they will practice what they have learned based on the education they have attained.

RECOMMENDATIONS

1. The study recommends improvements in implementing good management. The study proposed conducting a continual survey of residents to assess their knowledge, awareness and attitude towards solid waste management.
2. Every barangay should have adequate trash segregation implemented by the Local Government Unit.
3. Reduce the amount of waste created, incredibly toxic products that cannot be recycled.
4. Barangay officials and purok leaders should take the lead in sharing knowledge and ideas about reuse, reduce, recycling. And they must support volunteers for local environmental organization.

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APPENDICES



APPENDIX A-1

TRANSMITTAL LETTER

Republic of the Philippines
 BOHOL ISLAND STATE UNIVERSITY – Bilar Campus
 Zamora, Bilar, Bohol

November 19, 2021

DR. MARIETTA C. MACALOLOT

Campus Director

Bohol Island State University

Bilar Campus

Zamora, Bilar, Bohol

Madam:

Good Day!

I am Rufa C. Amolato, a fourth-year Bachelor of Science in Environmental Science Student at Bohol Island State University – Bilar Campus.

I am currently working on my undergraduate thesis entitled "PERCEPTION OF THE KNOWLEDGE, AWARENESS, AND PRACTICES ON SOLID WASTE MANAGEMENT IN BARANGAY BUENASUERTE, PILAR BOHOL". In line with this, I would like to ask for your approval to allow me to conduct a study starting November 29 – December 29, 2021 every weekday, 8am – 5pm in Buenasuerte.

Thank you and God bless.

Respectfully yours,

(Sgd.) **RUFA C. AMOLATO**

Researcher

Noted:

Recommending Approval:

(Sgd.) **NATHALIE T. BORDIOS**

Research Adviser

(Sgd.) **NOEL T. LOMOSBOG, Ph.D.**

Dean, CANR

Approved:

(Sgd.) **MARIETTA C. MACALOLOT, Ph.D.**

Campus Director



APPENDIX A-2

TRANSMITTAL LETTER
 Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY – Bilar Campus
 Zamora, Bilar, Bohol

November 19, 2021

HON. NECITAS CUBRADO
 Municipal Mayor
 Pilar, Bohol, Philippines

Dear Ma'am,

Good Day!

I am Rufa C. Amolato, a fourth-year Bachelor of Science in Environmental Science Student of Bohol Island State University – Bilar Campus.

I am currently working on my undergraduate thesis entitled "PERCEPTION OF THE KNOWLEDGE, AWARENESS, AND PRACTICES ON SOLID WASTEMANAGEMENT IN BARANGAY BUENASUERTE, PILARBOHOL". In line with this, I would like to ask for your approval to allow me to conduct a study starting November 29 – December 29, 2021 every weekday 8am – 5pm in Buenasuerte.

Thank you and God bless.

Respectfully yours,

(Sgd.) **RUFA C. AMOLATO**

Researcher

Noted:

Recommending Approval:

(Sgd.) **NATHALIE T. BORDIOS**
 Research Adviser

(Sgd.) **NOEL T. LOMOSBOG, Ph.D.**
 Dean, CANR

Approved:

(Sgd.) **HON. NECITAS CUBRADO**
 Municipal Mayor



APPENDIX A-3
TRANSMITTAL LETTER
 Republic of the Philippines
BOHOL ISLAND STATE UNIVERSITY – Bilar Campus
 Zamora, Bilar, Bohol

November 19, 2021

HON. ALEJANDRO BERNALDES
 Barangay Captain
 Buenasuerte, Pilar, Bohol

Dear Sir,

Good Day!

I am Rufa C. Amolato, a fourth-year Bachelor of Science in Environmental Science Student of Bohol Island State University – Bilar Campus.

I am currently working on my undergraduate thesis entitled "PERCEPTION ON THE KNOWLEDGE, AWARENESS, AND PRACTICES ON SOLID WASTE MANAGEMENT IN BARANGAY, BUENASUERTE, PILAR BOHOL". In line with this, I would like to ask for your approval to allow me to conduct a study starting November 29 – December 29, 2021 every weekday, 8am – 5pm in Buenasuerte.

Thank you and God bless.

Respectfully yours,

(Sgd.) **RUFA C. AMOLATO**
 Researcher

Noted:

Recommending Approval:

(Sgd.) **NATHALIE T. BORDIOS**
 Research Adviser

(Sgd.) **NOEL T. LOMOSBOG, PhD**
 Dean, CANR

Approved:

(Sgd.) **HON. ALEJANDRO BERNALDES**
 Barangay Captain



APPENDIX B

Republic of the Philippines
 BOHOL ISLAND STATE UNIVERSITY
 Bilar Campus
 Zamora, Bilar, Bohol

Vision: A premier S&T university for the formation of a world class and virtuous human resource for sustainable development in Bohol and the country.

Mission: BISU is committed to provide quality higher education in the arts and sciences, as well as in the professional and technological fields; undertake research and development and extension services for the sustainable development of Bohol and the country.

SURVEY QUESTIONNAIRE

PART 1. RESPONDENT'S PROFILE

Direction. Kindly put a check (✓) mark on the space provided that corresponds to your personal background.

1. Age: 30 years old and below _____
 31- 40 _____
 41-50 _____
 51-60 _____
 61 and above _____

2. Sex: Male _____
 Female _____

3. Highest Educational Attainment:
 Elementary Graduate _____
 High School Graduate _____
 College Graduate _____
 Others (Please specify) _____

4. Seminars, training and any Activities attended related to Environmental Protection and Conservation:

Please specify:

PART II. KNOWLEDGE ON ECOLOGICAL SOLID WASTE MANAGEMENT

Direction. Please rate the following statements by putting a check (✓) mark in the box provided, which corresponds your honest answer. Kindly reflect your responses by using the scale below:

Legend:

Scale	Description	Interpretation
5	Excellent	Very Highly knowledgeable
4	Very High	Highly knowledgeable
3	High	Moderately knowledgeable
2	Low	Poorly knowledgeable
1	Very Low	No knowledge

Description	5	4	3	2	1
Republic Act 9003					
Solid waste management (SWM)					
Policies on SWM program					
Purpose of the management in implementing SWM at school					
Importance of SWM					
Practicing SWM saves money and energy					
Student's roles and responsibilities toward the school SWM program					
Implementation will be successful and effective if concerned people will participate					
Proper disposal of garbage					
Discipline on SWM matters a lot					
Possible illnesses that you can get whenever trashes are not properly disposed					
Before throwing garbage, it is a must to read those trashcan labels for segregation					
Importance of recycling					
Identification of biodegradable from non-biodegradable					
Importance of segregation					
Waste minimization practices like reusing, recycling, and reducing					
Schools' orientation on SWM program					
Practices on SWM implemented in school					
Advantages and disadvantages of SWM					
SWM program is a big help in the environment					

Description	5	4	3	2	1
Degradation/destruction that wastes can cause to the environment					
"Clean as You Go Policy"					
Composting method for organic waste					
Sanctions for violation of not disposing of garbage properly					
Financial resources which can be generated from wastes					

PART III. SELF-AWARENESS OF ECOLOGICAL SOLID WASTE MANAGEMENT PRACTICES

	SA (5)	HA (4)	MA (3)	SA (2)	D (1)
A. REDUCE					
1. I am aware that reducing the use of plastic bags is environmentally friendly.					
2. Using paper bags is a good alternative to using plastic when shopping.					
3. Reducing the use of plastic bottles decreases the stockpile of garbage.					
4. I am aware that reducing waste is beneficial to the community.					
5. At home, I encouraged my family to avoid using disposable table wares.					
B. REUSE					
1. Reusing old clothes is cost-saving and practical.					
2. Reusing scratched papers is economically friendly.					
3. Reusing empty jars for other purposes reduces the generation of non-biodegradable waste.					
4. Repairing usable household cleaning tools help save money and decreases household garbage.					
5. Keeping old but usable items saves dumpsite space.					
C. RECYCLE					
1. Recycling items is cost-saving.					
2. Recycling is the most commonly used waste management practice.					
3. It is essential to motivate my family on recycling waste materials at home.					
4. Recycling items provides more opportunities to reduce waste.					

5. Recycling allows household members to value their belongings and respond to environmental concerns.					
--	--	--	--	--	--

Direction. Please rate the following statements by putting a check (√) mark in the box provided, which corresponds to your honest answer. Kindly reflect your responses by using the scale below:

Scale	Description	Interpretation
5	Strongly Agree	Very Highly Aware
4	Highly Agree	Highly Aware
3	Moderately Agree	Moderately Aware
2	Slightly Agree	Poorly Aware
1	Disagree	Unaware

PART IV. SELF-ASSESSMENT OF ECOLOGICAL SOLID WASTE MANAGEMENT PRACTICES

Direction. Please rate the following statements by putting a check (√) mark in the box provided, which corresponds to your honest answer. Kindly reflect your responses by using the scale below:

Legend:

Scale	Description	Interpretation
5	Always	Fully Practiced
4	Often	Highly Practiced
3	Sometimes	Moderately Practiced
2	Rarely	Slightly Practiced
1	Never	Not Practiced

Economic Dimension	A (5)	O (4)	S (3)	R (2)	N (1)
1. I refrain from buying disposable products such as food containers, and cellophane among others, instead I bought reusable ones.					
2. At home, I instruct my children to keep empty bottles and plastic containers and sold them to garbage buyers.					
3. I utilize empty big plastic containers to be used as trash bins.					

4. I bring my reusable items to junkshops and sold them at a reasonable price.					
5. I encourage my family and my neighbors to wise utilization of garbage and make money from it.					
Environmental Dimension					
1. I do proper waste disposal because it is important for the protection and sustainability of our environment.					
2. We have a compost pit in our backyard where we properly dispose of all our wastes.					
3. I prefer burning dried leaves rather than burning plastic and rubberized materials.					
4. I apply the integrated approach of organic composting of garbage that is used in home gardening					
5. My family uses to dispose of our wastes that minimize environmental damage.					
Health Dimension					
1. I am equipped with personal protective paraphernalia like gloves, masks, and boots in collecting waste.					
2. I dispose of my leftover foods in the right container/receptacle.					
3. I clean and wash the trash bins or receptacles after garbage disposal to avoid an unpleasant smell.					
4. I use rubbing alcohol in sanitizing my hands before and after collecting waste.					
5. I use to dispose of tin cans properly so that no mosquito can thrive and reduce the risk of dengue fever and other illnesses.					
Social Dimension					
1. I participate in a community-based educational forum on ecological protection and conservation.					
2. I join waste management programs implemented by the Local Government through the motivation of our Barangay Officials.					
3. I use to practice "CLAYGO" or "Clean as You Go" wherever I am and encouraged my fellows to do the same.					
4. I set myself as an example of cooperative participation in waste management in our Barangay.					
5. I share valuable ideas with my neighbors on the positive effects of proper waste management on the community.					

Appendix C-1

Analysis on the Significant Difference in Knowledge on Waste Management when Grouped according to Profile of the Respondents

Demographic Profile	Type II Sum of Squares	Degrees of Freedom	Mean Square	Computed F Value	Sig.
Sex	0.541	5	0.108	0.797	0.553
HEA	0.027	2	0.013	0.099	0.906
Age	6.942	2	3.471	25.590	0.000
Error	26.719	197	136		
Corrected Total	34.280	206			

Appendix C-2

Tukey's Test on the Knowledge on Waste Management when Grouped According to Profile of the Respondents

Highest Educational Attainment	Number of Responses	Tukey's Grouping
(B) High School Graduate	17	1
(A) Elementary Graduate	106	2
(C) College Graduate	84	3.784151 ^a
		4.093333 ^b

Appendix C-3

Analysis on the Significant Difference in Awareness on Waste Management when Grouped According to Profile of the Respondents

Demographic Profile	Type II Sum of Squares	Degrees of Freedom	Mean Square	Computed F Value	Sig.
Sex	0.196	5	0.039	1.171	0.327
Highest Educational Attainment	0.11	2	0.005	0.159	0.853
Age	0.456	2	0.228	6.796	0.001
Error	6.605	197	0.034		
Corrected Total	7.192	206			

Appendix C-4

Tukey's Test on the Awareness on Waste Management when Grouped According to Profile of the Respondents

Highest Educational Attainment	Number of Responses	Tukey's means Grouping	
		1	2
(B) High School Graduate	17	3.952941	
(A) Elementary Graduate	84	3.982540	
(C) College Graduate	106		4.061635

Means with the same grouping are not significant difference from each other

Appendix C- 5

Analysis on the Significant Difference in Practices on Waste Management when Grouped According to Profile of the Respondents

Demographic Profile	Type II Sum of Squares	Degrees of Freedom	Mean Square	Computed F Value	Sig.
Gender	0.086	5	0.017	0.413	0.839
Highest Educational Attainment	0.001	2	0.000	0.007	0.993
Age	0.331	2	0.165	3.968	0.020
Error	8.210	197	.042		
Corrected Total	8.595	206			

Appendix C-6

Correlation between the Respondents' Awareness Level and their Practices

	Mean	Std. Deviation	Number of Respondents	Computed r	Significant level
Awareness	4.20	0.18	209	0.526*	0.00
Practices	4.02	.0.19	209		

** . Correlation is significant