

# Waste Management Awareness and Practices of Manuel M. Garcia Elementary School

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**Abstract** -The improper waste management is one of the many reasons of the recent floods that resulted to thousands of homeless here in the Philippines and other countries. The purpose of this study is to determine the waste management awareness and practices of Manuel M. Garcia Elementary School. Descriptive – correlation research design was employed. A total of 50 primary students, 50 intermediate students and 25 faculty and staff members were selected as respondents through purposive sampling. A researcher-made questionnaire was used as an instrument. Mean and t-test were the tools used in the data treatment. Results revealed a moderate level of waste management awareness in terms reduce, reuse and recycle. Likewise, on the level of waste management practices in terms of home, school and community, results showed low level practices. Furthermore, the data indicated that there was a significant difference in waste management awareness and practices when analyzed by profile. Additionally, results indicated that there is a significant relationship between waste management awareness and practices. Hence, it is recommended that education authorities should intensify the proper waste management among stakeholders to ensure full awareness on the wise disposal of garbage. Lastly the, the school and community should collaborate for the improvement of the waste management program and both should monitor the students' behavior towards the program.

**Index Terms** – Waste management, reduc, reuse, recycle, home, school, community

## I. INTRODUCTION (HEADING 1)

Solid waste management is the biggest environmental problem and has turned out to be an issue of increasing global concern facing not only in the Philippines but also in the whole world today. It is our foremost duty to be aware of and conserve our environmental resources.

Humans are born from the earth, they return to the earth, and they sustain by the earth. Hence the environment in which humans live is very important, and it directly affects their lives. Many families experience the loss of their houses, and their loved ones because of floods, landslides, and typhoons. Most of such tragedies are brought by improper waste disposal. Hence, it is high time to look into waste management practices of human beings to safeguard the environment.

According to Hannah (2018), Pope Francis said creation has often suffered because of humanity's sins and failings, stressing that human beings must take care of it because as Christians they see signs of hope in Christ's Resurrection in nature every day. The pope also observed that water is beautiful, water is important and water is life; yet human beings have helped to destroy creation by contaminating water. Taking care of the world is not just an ecological issue, but a moral and spiritual issue. It reflects the way human beings treat the life God has given. It is about what happens to the future (Rebekah, 2018).

Moreover, according to Stuff (2018), Pope Francis, in the first papal document dedicated to the environment, said that it is time to act to save the planet from destruction. He pointed to an increasing disconnect in modern life to, nature, such as the increased urbanization of people. He goes to great lengths to argue that ecological problems can only be solved by also fixing the ethical, cultural, and spiritual crisis of modernity and the isolation and disconnection between humans.

In other perspectives, the best way to provide awareness for environmental issues, and promote environmentally, responsible behavior in throwing waste is through increased access to environmental education. Students will be allowed to explore environmental issues, engage in problem-solving, and take actions to improve the environment. Students increase public awareness and knowledge of environmental issues (Mansaray, Ajiboye, & Audu, 1998). However, this education can be effective when it is based on life experiences beginning in the early years of life. For this reason, experiences gained during school age shape an individual's outlook on the environment.

Asian countries have witnessed flooding, particularly in Japan, where floods and landslides killed at least 122 people in the southwest and at least 27 people are missing, based on the nation's Fire and Disaster Management Agency. Thousands of houses have been damaged, and even the ones that stand intact have been impacted. Nearly 17,000 households are still without power, and phone lines are down across multiple prefectures. Further complicating repair efforts is the fact that many railroads and highways are closed and too flooded to operate, placing many affected areas out of reach. Floods are hazardous, and we cannot cope with the consequences, which contribute to a major disaster that creates a huge amount of loss that costs billions. However, the flood has resulted in injury or death of human lives and can have effects on the economy, and the environment (Jessie, Yoko, & Junko, 2018).

In the Philippines, some places have already experienced tropical cyclones, landslide and flash floods, storm surges, heavy rains, and the deadliest typhoon that lost their family and loved ones, homes; trees were uprooted, poles were strewn on the streets and rooftops were blown off. Towns and provinces are largely destroyed. Years ago, Typhoon Basyang left a traumatic experience for the people of the provinces of Cagayan, Isabela, and Aurora that kills hundreds of people, and many buildings, homes, and roads were destroyed. Many roads are closed, and they stopped their daily routine because of typhoon Basyang. The Affected area is paralyzed. Telecommunication is also lost and stopped in their daily routine, and some of them need to evacuate to other places because of the damage left of typhoon Basyang.

Two years after, typhoon Pablo made landfall in Mindanao on December 4, 2012, and is considered one of the worst typhoons to hit the island. Mostly, affected were the provinces of Davao Oriental and Compostela Valley, where the strong typhoon caused massive flooding and landslides that killed many. It destroyed houses, disrupted communications, and caused power outages, flooding, and uprooted trees. The storm caused widespread destruction in Mindanao, leaving thousands of people homeless. Losses of agricultural infrastructure, irrigation facilities, fishery structures/equipment, and other facilities. Many sources of livelihood are washed out (Padua, (2012).

These are the visible effects of improper waste management if humans continue to destroy the environment and not take care of it. Human beings continue cutting trees and disposing of waste anywhere. It does not take a rocket scientist to grasp the need to keep the waterways free of rubbish and debris to allow the water to freely flow and minimize flooding, but many have yet to realize what that waste that is recklessly thrown on the ground or creek will come back to haunt and harm us (Alejandre, 2017).

Hence, this study aimed to explore the level of waste management awareness, of students, faculty and staff as well as their readiness to engage in, reduce, reuse, recycle, which could involve some change in their lifestyle. The level of waste management practices was determined in terms of home, school and community of primary, intermediate students and faculty, and staff. This study is also expected to reveal the role of the school head, students, faculty and staff to the waste management awareness and practices.

This study aimed to determine the relationship of waste management awareness and practices of students, faculty and staff of Manuel M. Garcia Elementary School for the school year 2018 to 2019.

Specifically, it aims to answer the following questions:

1. What is the profile of the respondents in terms of:
  - 1.1 sex
  - 1.2 category
2. What is the level of waste management awareness of Manuel M. Garcia Elementary School in terms of:
  - 2.1 reduce;
  - 2.2 reuse; and
  - 2.3 recycle?
3. What is the level of waste management practices of Manuel M. Garcia Elementary School in terms of:
  - 3.1 home;
  - 3.2 school; and
  - 3.3 community?
4. Is there a significant difference in waste management awareness when analyzed by the profile of the respondents?
5. Is there a significant difference in waste management practices when analyzed by the profile of the respondents?
6. Is there a significant relationship between waste management awareness and practices of Manuel M. Garcia Elementary School?
7. Based on the findings of the study, what waste management program can be designed?

## II. LITERATURE SURVEY

*Waste Management Awareness.* Waste management is the collection, transport disposal, and treatment of waste materials together with monitoring and regulation. It relates to materials produced for human activities, and the process generally was undertaken to endure its effects on health, environment, and aesthetic as well as a manuscript that address waste management policy, education, and economic and environmental assessments. As a human who truly affected the waste, we need to be aware and have a proper understanding of waste management issues.

Ajiboye and Ajitoni (2008) said that public awareness is key to successful waste management and will create change in how people look at garbage. Environmental education is considered an appropriate intervention for creating public awareness and understanding of the challenges of environmental degradation (Daniel & Nadeson, 2006).

Moreover, Barret and Buchanan-Barrow (2005) asserted that the best easy to provide awareness for environmental issues and promote environmentally responsible behavior is through increased access to environmental education. Give environmental knowledge to students, so the students have good attitudes and practices and contribute to our environment (Ifegbesan, 2010).

People know the problem we face today in our environment but still cannot practice good waste management because they are not fully aware (Nalan et al., 2011). However, people behavior about the environment is a choice and have a consequence on their own. People need to be motivated to practice a good waste management Venatesh and Davies (2000). Similarly, Stern et al., (1993), give motivation to people, the stronger the motivation is, the more they practice good waste management is.

Moreover, according to Alejandre, (2017) said that all actions that we made and wrong decision has a consequence; what we do in our environment is waste we receive in our day to day life and our near future. Always apply the 3r's because it's a big help to conserve our natural resources and landfill space and be responsible to our actions toward our environment and let's start to take care of it (Kennedy et al., 2009).

The world is facing an increasing number of environmental challenges, which includes climate change, global warming, droughts, water scarcity, floods, and pollutions. Children, as early as possible, should be aware of the environmental issues are facing. Individuals naturally place a high value on things that affect them personally. Environmental concern is developing as individuals establish the link between ecological sanitation and their wellbeing. Again, it may come from their concern about humanity (Dietz, Stern, and Guagnano, 1998).

The three R's are commonly used in solid waste management. They stand for reduce, reuse, and recycle. As waste generation rates have risen, processing costs increased, and available landfill space decreased, the three R's have become a central tenet in sustainable waste management efforts. A common misconception is that environmental protection and sustainable initiatives must come at the expense of economic development. This is particularly true for managing wastes, a process that depletes natural resources and pollutes the environment if not done correctly. Proper waste management can be costly in terms of time and resources, and so it is important to understand what options exist for managing waste in an effective, safe and sustainable manner (El-Haggar, 2007).

*Reduce.* Reducing waste before you purchase it, or by purchasing products that are not wasteful in their packaging or use make something smaller or use less, resulting in a smaller amount of waste and conserving using natural resources wisely and using less than usual to avoid waste. From thinking differently about what you buy to using re-usable items, to and composting at home. Ambayic et



al. (2013) cited that reduction is bringing down the amount of trash deposited by consciously buying items that generate a lot of trash. It instills a culture of responsible waste management among students while helping the school to reduce their waste.

Waste Reduction is defined by the Organization for Economic Co-operation and Development (OECD). As the principle that manufacturer and importers of products should bear a significant degree of responsibility for the environmental impacts of their products throughout the product life-cycle, including impacts from the selection of materials, the production process, and from the use and disposal of the products at the end of life cycle (OECD, 2001). Waste reduction is the logical extension of the polluter pays principle. This rests on the argument that environmental impacts are substantially determined at the point of design where key choices are made on materials, processing, and finishing technology, etc. (Gertsakis et al., 2000).

*Reuse.* The action or practice of using something again without further transformation without changing its shape or original nature. Whether for its original purpose. Reuse by taking, but not reprocessing, previously used items, helps save time, money, energy and resources. It brings other benefits by taking useful products discarded by those who no longer want them and passing them to those who do. Give your old materials and cloth with good condition to the less fortunate.

Reuse is the process of recovering materials intended for the same or different purpose without the alteration of physical and chemical characteristics. Reusing saves the energy and resources save the energy and resources that would have been used to make a new product and results in fewer products going into the rubbish bin and ending up in landfill (Griffiths et al., 2010).

*Recycle.* Recyclable materials refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use. These may be transformed into new products in such a manner that the original products may lose their original identity.

The material is reprocessed before being used to make new materials, objects, and products. Recyclable materials refer to any waste material retrieved from the waste stream and free from contamination that can still be converted into suitable beneficial use. These may be transformed into new products may lose their identity. The reprocessing activities can have an impact on people's health and the environment and can save material and lower green gas emissions, but these impacts are usually lower than those from making the product from new, raw materials and treating the materials as valuable resources rather than as waste. Thus, recycling aims at environmental sustainability by substituting raw material inputs into and redirecting waste outputs out of the economic system (Geissdoerfer et al., 2017).

Recycling saves landfill space and also rescues the resources that were used to make another new product. It treats used or waste materials through a process of making them suitable for beneficial use in a way that the original products may lose their identity. In many cases, recycling can also save energy. Schools are purchasing paper products made from recycled content help to ensure a viable market for recycled products. Moreover, the lack of awareness in recycling might prevent people from recycling (Diamantopoulos et al., 2003).

Also, while the materials recycled reduce virgin material use, they do still require additional energy to be used to reform them into manufactured products. Wastes cannot turn back into resources unless there is some external source of energy. Recycling does not just happen on its own; it has to be powered by an energy source. This is because the embodied energy (known as energy) used in production is lost during the recycling process. When none of the 3Rs options apply, then responsible disposal of the waste is required. One very common irresponsible disposal of waste is things that have been thrown away that are lying on the ground in a public place/littering (Griffiths et al. 2010).

*Waste Management Practices.* Practices are doing something regularly and repeatedly work in orders to do it better. It is using an idea, belief of one individual. The development and application of codes of good environmental practice which covers all aspect of the activity in the product's life. Saving sources, including energy, making collection and disposals system available in public. Practice what is good we contribute to our environment because all we do is what we harvest someday.

Stern et al., (1993) said that solid waste is referring to the systematic administration of activities/behavior which provide for segregation at source, segregated transformation, storage, transfer, processing, treatment, and disposal of solid waste and all other waste management activities which do not harm the environment. Practicing this in our home, school and to our community is a good start to save our environment. One of the greatest challenges facing the developing countries is the unhealthy disposal of solid waste which resulted from human activities of development and survival (Kofoworola, 2007).

*Home.* Garbage that comes mainly from homes. Waste management starts at home. Teach our family loves ones to stop throwing garbage in the streets and waterways and to practice recycling and practicing recycle, reuse and reduce. All the members of the household must be informed how to recycle, reuse and reduced and how to segregate waste into compostable and non-recyclable.

Ecological solid waste management should start at the household level. Management of waste materials in the households are normally carried out by the servants' and often the housewives. Thus, they must be well informed about proper waste handling and management (Regional Public Affairs Office (RPAO) Department of Environment and Natural Resources, RXI).

*School.* The school is an institution to provide learning spaces and learning environment for the teaching of students under the direction of teachers. Helps students learn necessary concepts and skills, but it also allows the student to interact with other students socially, academically and emotionally. Through school, we become an educated person and have the skills needed to function every day to our society and through education we become more knowledgeable about the environment and its associated issues, we become more aware to our environment and its problems, thus, be more motivated to act toward the environment in more responsible ways.

Mor et al., (2006) described that school waste management requires proper infrastructure, maintenance and upgrade for all activities. This becomes increasingly expensive and complex due to the continuous and unplanned growth of the public school. The difficulties in providing the desired level of public school service in the urban centers are often attributed to the poor financial status of the school. The school solid waste amount is expected to increase significantly shortly as the country strives to attain an industrialized nation status by the year 2020 (Sharma & Shah, 2005).

Moreover, The Department of the Environment and Heritage (2005) believed that environmental education could increase the attitude and knowledge about the environment that is necessary to understand and solve the problems. Environmental education should prepare opportunity for people to participant processes to solve environmental problems and create a sense and commitment among them than to their living environment. Furthermore, they recommended environmental education as a goal to develop the curriculum. Hence, environmental education system (Courtenay-Hall & Rogers, 2002).

Poor collection in the school and inadequate transportation are responsible for the accumulation of school solid waste at every nook and corner. According to Rathi (2006), the management of school solid waste is going through a critical phase, due to the unavailability of suitable facilities to treat and dispose of the larger amount of school solid waste generated daily in school premises. Unscientific disposal hurts all components of the environment and human health. Inadequate waste policy in private and public level, low awareness of the school, shortage of budget and low private participation become the main reasons for the low level of service in school (Hilman, 2005). According to Punongbayan (2014), awareness and accompanied by participation is the key to waste management practices.

*Community.* This is a group of people sharing attributes and having a connection to each in everyone and having the same interest, facing the same problem in waste to their environment. Bring people together to advocate and support each other in the fight to overcome the treats particularly in flooding cause of waste throwing anywhere. Individuals and families are responsible for their health and welfare. They come to know their situation better and are motivated to solve their problems especially in our environment facing a problem today.

Community participation is the sociological process by which residents organize themselves and become involved at the level of a living area or a neighborhood, to improve the conditions of daily life (water, sanitation, health, education, etc.). It comprises various degrees of an individual or collective involvement (financial and physical contributions, social and political commitment) at different stages of a project since it implies that residents set up management committees in charge of equipment.

Nates et al., (2012) said that ommunity participation can be seen as a process in which community members are involved at different stages and degrees of intensity in the project cycle with the objective to build the capacity of the community to maintain services created during the project after the facilitating organizations have left. Community participation throughout the whole project, thus from project design and implementation to evaluation, ensures the reflection of community priorities and needs in the activities of the project and motivates communities into maintaining and operating project activities after the project is completed. Furthermore, community participation can increase capabilities at the level of the community, and it encourages cost sharing of project activities in solid waste management. The school and the barangay together with the parents is the best way to meet the goal of the waste management program (Moningka, 2000).

### III. Methodology

The respondents of the study were the 50 primary students, 50 intermediate students and 25 faculty and staff members of Congressman Manuel M. Garcia Elementary School of the Division of Davao City. This study used purposive sampling in selecting respondents.

Data collection for this study started by sending a letter of request to the Schools Division Superintendent (SDS) of the Davao City Division. After the approval, the researchers submitted a letter with endorsement from the SDS to the Public Schools District Supervisor (PSDS) of Sta. Ana District, District 1. Upon the approval of the PSDS, the researcher redirected an endorsement letter from the PSDS to the School Heads of the identified Elementary Schools under the said district. Afterward, the researcher personally distributed the questionnaire to the students, teacher and other staff -respondents. The students, teachers, and other staff-respondents were assured of the utmost confidentiality of their responses. After all the responses were retrieved, the researcher began encoding them in the Microsoft excel office application. The encoded data was then transferred to IBM SPSS 25 for statistical analysis.

The researcher utilized a modified questionnaire taken from a previous study and readings. Likewise, the items were culled from the different literature and instruments compiled. The researcher used a modified questionnaire specifically designed to gather pertinent data from the respondents on the waste management awareness and practices of Manuel M. Garcia Elementary School. A Likert-type questionnaire was submitted for approval and validation by the three (4) panel experts. The questionnaire contained thirty (30) statements about the waste management awareness of the respondents, with (10) statements with subdomain and (30) thirty statements about the waste management practices of the respondents with (10) statement with a subdomain. After the validity test, the survey questionnaire was piloted to twenty (20) teachers. It was then checked for reliability using Cronbach’s alpha. Items with Cronbach alpha values of 0.954 and above were described as reliable. It showed that all items in waste management awareness and practices (0.954>0.70 reliability index) passed the required standard, thus considered reliable.

### IV. Results and Discussion

#### *Profile of the Respondents*

Table 1 is the profile of the respondents which include students, teachers and other workers of Manuel M. Garcia Elementary School which is located in Barangay. Leon Garcia Sr. Agdao Davao City Philippines.

Table 1 Profile of the Respondents

Profile	Frequency	Percentage
Sex		
Male	46	36.8%
Female	79	63.2%
Total	125	100%
Category		
Students	100	80%
Teachers	22	17.6%
Other Workers	3	2.4%
Total	125	100%



Table 1 shows the profile of the students, teachers and other worker. The male is composed of 46 with the percentage of 36.8 percent; while the female has 79 with the percentage of 63.2 percent. All in all, the female and male respondents are 125 with the percentage of 100. For students, the respondents composed of 100 with 80 percentages; while the teachers are 22 with 17.6 percentage. For the other worker group, there are three respondents with 2.4 percentage. The overall respondents included in the study is 125.

*Level of Waste Management Awareness*

Table 2 presents the level of waste management awareness of the students, teachers and another worker of Manuel M. Garcia Elementary School in terms of reducing, reuse, and recycle. These are carefully discussed after the table.

Table 2. Level of Waste Management Awareness

Indicators	Mean	Standard Deviation	Description
Reduce	2.844	0.4501	Moderate
Reuse	3.178	0.504	Moderate
Recycle	2.515	0.404	Low
Overall Mean	2.846	0.4527	Moderate

As shown in the table, overall mean of the level of waste management awareness is 2.846 with the description of moderate which means the respondents are moderately aware in the waste management in terms of reduce, reuse and recycle. Environmental education helps to achieve awareness, knowledge, attitude and responsible behavior about environment (Ajiboye & Ajitoni, 2008). It is parallel to the result of the study of Daniel and Nadeson (2006) where they stated that Malaysians in basic scientific idea generally have a moderately good understanding and awareness to waste management.

*Level of Waste Management Practices*

Table 3 presents the level of waste management practices of Manuel M. Garcia Elementary School. As seen on the table, there are three indicators for the variable. The indicators are the home, school, and community. These are discussed in detail after the table.

Table 3. Level of Waste Management Practices

Indicators	Mean	Standard Deviation	Description
Home	2.57	1.35	Low
School	2.889	1.46	Moderate
Community	2.309	1.256	Low
Overall	2.589	4.0746	Low

This table showed the level of waste management practices of the respondents. The overall mean of waste management practices of the respondents is 2.589 with the description of low. Low has an interpretation that the respondents are never practicing the waste management at home, school and community.

Furthermore, Kowofoda (2007) revealed that the unhealthy disposal of solid waste which resulted from human activities of development and survival. People cannot practice good waste management, so we harvest today, what we do to our environment. The findings support the study of Ifegbesan (2010) on secondary school student's practices in waste management at Ogun state, Nigeria where it was noted that the students' practices were generally negative. They are still doing the negative activities that hurt the environment and that waste management was a serious environmental problem though, students at the secondary school level have a fair amount of environmental science and had a high awareness of the problem of solid waste management and the cause. Students noted to have low environmental knowledge, poor attitudes, and practices which were generally harmful to the environment (Ifegbesan, 2010).

*Significant Difference in Waste Management Awareness when Analyzed by Profile of the Respondents*

Table 4 shows the Significant Difference Between Level of Waste Management Awareness According to Profile of the Respondents.

To test the significant difference between the level of waste management awareness according to the profile of the respondents. A t-test was utilized to test the significant difference in waste management awareness according to the profile of the respondents in terms of sex. ANOVA was utilized to test the significant difference in waste management awareness according to profile in terms of students, teachers, and maintenance/another worker. The results generated in this presentation were used to decide whether to accept or reject the null hypothesis.

Table 4. Significant Difference in Waste Management Awareness when Analyzed by Profile of the Respondents

Profile	Mean	Degree of Freedom	Computed t-value	Critical t-value at 0.05	Computed F-value	Critical F-value at 0.05	Decision	Interpretation
Sex								
-Male	2.25	48	1.7964	1.678			Reject Ho	Significant
-Female	2.85							
Category								
-Students	SSB=	3-1=2		34.934	4.74		Reject Ho	Significant
-Teacher	3.165	3 (3-1) =6						
-Other	SSW = 0.272							

As shown in Table 4, there is a significant difference on waste management awareness according to profile of the respondents in terms of sex which is categorized as male and female as well as in terms of category which are students, teachers and maintenance/other worker.

The results showed that the mean of male respondents is 2.25; while the female respondents have a total mean of 2.85. The degree of freedom is 48, the computed t-value is 1.7964, and the critical t-value at 0.05 significance is 1.678. These results, lead to the decision to reject the null hypotheses which state there is a significant difference in waste management awareness according to sex; male and female.

According to Punongbayan (2014), awareness accompanied by participation is the key for students to be involved in the waste management program of the schools where effective and sustainable implementation of the proper waste management practices could be achieved. The profile of the respondents is not an important factor to the full awareness of the respondents in waste management. Similarly, the gender of the respondents cannot fully affect their awareness of waste management. All the stakeholders of the school support the program to make it successful. Teachers have an important role in making students and community aware of the program. Therefore, waste management awareness does not change according to the profile of the respondents. It is not dependent on age nor category.

The results strongly oppose the findings of Paghasian (2017). She expresses in her study that the respondents had good practices on solid waste management in terms of disposal. The awareness of the students had no influence on their practices on solid waste management and in terms of segregation, reduce and recycle. Further, this has a significant relationship on their awareness on solid waste management.

*Significant Difference between in Waste Management Practices When Analyzed by Profile*

The significant difference in the level of waste management practices according to profile is shown in Table 5. T-test was utilized to test the significant difference in waste management practices according to the profile of the respondents in terms of sex. Anova was utilized to test the significant difference in waste management practices according to profile in terms of students, teachers, and maintenance/another worker. The results generated in this presentation were used to decide whether to accept or reject the null hypothesis.

Table 5. Significant Difference between in Waste Management Practices When Analyzed by Profile

Profile	Mean	Degree of Freedom	Computed t-value at 0.05	Critical t-value at 0.05	Computed T-value	Critical F-value	Decision	Interpretation
Sex								
-Male	1.94	48	0.983	1.678			Accept Ho	Significant
-Female	1.66							
Category								
-Students	SSB=	3-1=2			36.82	4.74	Reject Ho	Significant
-Teacher	3.94	3 (3-1) =6						
-Other	SSW =							
-Worker	0.107							

Table 5 above displays the findings on significant differences in the level of waste management practices according to profile. The computed mean of the male is 1.941; while the computed mean of the female is 1.66. The degree of freedom is 48; the computed t-value is 0.983; and the critical t-value at 0.05 significance is 1.678. These results led to the decision to accept the null hypotheses which states that there is a significant difference in waste management awareness according to sex which is male and female.

Students are fully aware that they need to protect and save our environment; however, they do not always practice waste management at home, school and to their community. If students are motivated to do the waste management in their day to day life and understand what the importance of it to their daily life, then that is the time they can practice waste management always wherever they go.

The result of the study is parallel to Stern et al., (1993) who defined that motivation is shaped by two components: intensity and direction both determine the behavior that is chosen and why, claim that the stronger the egoistic orientation of the individual, the stronger the motivation for environmental behavior is. Therefore, the waste management practices of the teachers, students, and maintenance/other workers of Manuel M. Garcia Elementary School does not show any changes according to the category and sex of the respondents. Solid waste practices are a habit that is inculcated in a person early on. It is not influenced by sex or by category. It is part of a person's lifestyle.

*Significant Relationship between Waste Management Awareness and Practices*

The significant relationship between waste management awareness and waste management practices of Manuel M. Garcia Elementary School is shown in Table 6.

The results showed that there is a significant difference between waste management awareness and practices of Manuel M. Garcia Elementary School where the computed t on  $r = 0.1435$  is 0.767, and the critical t-value at 0.05 level of significance is 1.675.

Table 6. Significant Relationship between Waste Management Awareness and Practices

Variables	Computed t on $r=0.1435$	Critical t-value at 0.05	Decision	Interpretation
Waste Management awareness and practices	0.767	1.675	Failed to reject Ho	Significant

Table 6 above displays the findings on the significant relationship between waste management awareness and practices. Computed  $t$  on  $r = 0.767$  and the critical  $t$ -value at 0.05 level of significance is 1.675. This results to a decision of failed to reject the null hypothesis. This means that there is a significant difference in waste management awareness and practices. The school personnel are fully aware that they need to protect and save our environment; however, they do not always practice waste management at home, school, and community. If the school personnel are motivated to do the waste management practices in their day to day life and understand what the importance of it to their daily life, then that is the time they always practice the waste management. The results strongly oppose the findings of Paghastian (2017) which stated that students have good awareness and practices in waste management. It also was also revealed in the study that the respondents are knowledgeable and mindful. The awareness of the students had a significant relationship with their awareness. The awareness on solid waste management of the students does not affect their practices.

## V. CONCLUSIONS

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

The level of waste management awareness of Manuel M. Garcia Elementary School in terms of reducing, reusing and recycling is moderate which implies that the students, teachers, and maintenance/other worker are moderately aware about waste management.

The level of waste management practices of Manuel M. Garcia Elementary School in terms of home, school and community is low which implies that the students, teachers, and the maintenance/other worker never practice waste management at home, school and community.

There is a significant difference in waste management awareness when analyzed the profile of the respondent which means that the waste management awareness does not directly impact the profile of the students, teachers, and maintenance/another worker.

There is a significant difference in waste management practices when analyzed the profile of the respondent which means that the waste management practices do not directly impact the profile of the students, teachers, and maintenance/another worker.

There is a significant relationship between waste management awareness and practices of Manuel M. Garcia Elementary School which means that the waste management awareness of Manuel M. Garcia Elementary School influences the waste management practices of Manuel M. Garcia Elementary School.

Based on the findings, the suggested waste management program is designed to increase the awareness and practices on recycling of students, teachers, and maintenance/another worker.

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