

# Solid Waste Management System of Barangay Deet

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## ABSTRACT

This study aimed to establish a Solid Waste Management System of Barangay Deet. There were 210 respondents taken from the seven sectors of the barangay. This study utilized the descriptive-correlational research design employing the questionnaire as an instrument in gathering data, which was adapted from Fontanilla (2003); Ajith (2014). The majority of the respondents are female. Most of the respondents attained high school level and have a monthly income of below 3,000.00. Results further revealed that the respondents have a moderate level of awareness on solid waste management. And in terms of the extent of the practice of the different components of solid waste management is often practiced by the respondents. In terms of the degree of seriousness on the problems slightly met in the implementation of solid waste management all were described as serious. Results further revealed that there exists a significant relationship between socio-demographic profile and the level of awareness of the

respondents on solid waste management particularly on gender and educational attainment. There is a significant relationship between the socio-demographic profile and the extent of practice on the respondents on gender and educational attainment. There exist a significant relationship between the level of awareness and the extent of the practice of the respondents on solid waste management.

## **KEYWORDS**

Waste management, degree of seriousness, biodegradable, non-biodegradable, waste segregation, waste disposal, descriptive- correlational, Philippines

## **INTRODUCTION**

Barangay Deet has a total population of 1,679 (source RBI) with 441 families. With this number of population, it is expected that this is coupled with generation of large amount of waste such as biodegradable, non-biodegradable and residual wastes. In terms of wastes, how do the residents dispose their wastes? What is the solid waste management practices of the residents?

In the past, residents of the barangay were not aware of the proper handling, and disposal of solid wastes. They did not realize the dangers that mishandled wastes could cause to the environment and most especially to the people. They relied too much on the garbage collection truck that came every Saturday to collect the week-long household wastes. People just put together the wastes in a sack or a garbage bag thus wastes segregation was not practice by them. The collected wastes were transported to an open dumpsite. Then the closure order of the dumpsite was enforced and garbage collection suddenly stopped. The residents were not ready of the closure and they did not know what to do with their wastes that started to pile up. So the easiest way to get rid of their wastes is burning, others throw their wastes in vacant lots where plastics started to be blown by wind and were scattered everywhere, some throw their wastes in the river and there are also some who just piled their garbage in their backyard attracting rodents, pests and insects. The people did not think of the consequences the way they managed their wastes.

The Barangay government has seen the importance of proper solid waste management – thus the campaign has started. The barangay officials attended and participated to various Waste Analysis and Characterization Studies (WACS)

conducted by municipal government. They also attended the demo on solid waste management conducted by the Municipal environment and Natural Resources Office. To further spread more information and further educate the residents on proper solid waste management, the barangay officials conducted zonal visits around the barangay and urged the people to segregate household wastes and make their own compost pit as mandated by the Comprehensive Solid Waste Management Ordinance (CSWMO) of the Barangay. The CSWMO is reiterating the prohibition of burning of any kind of wastes and thus any violation of the ordinance has a corresponding penalties. Another undertaking of the barangay government to lessen the problem on solid waste management was the construction of Material Recovery Facilities (MRF's). Clean up drive are regularly conducted and it is spearheaded by the barangay officials, barangay health workers and barangay tanod. Residents already started segregate their wastes and refrain from the improper disposal of garbage. Thus the barangay government is performing a big role in the implementation of solid waste management.

Solid waste management is the collection, transport or disposal and treatment of waste materials. It relates to materials produced to human activities, and the process generally undertaken to endure its effects on health, the environment and aesthetics. It reduces or eliminates adverse impacts on the environment and human health rather supports economic development and improved the quality of life. In today's polluted world, learning the correct methods of handling the waste generated has become essential (Marello & Helwege, 2014).

Waste management is a science that addresses the logistics, environmental impact, social responsibility and cost of an organizations' waste disposal. Solid Waste Management (SWM) has 3 basic components namely collection, transportation and disposal. Comprehensive solid waste management incorporates a diverse range of activities including reduction, recycling, segregation, modification, treatment and disposal which have varying levels of sophistication (Zagozewski et al., 2011). The objective of SWM is to reduce the quantity of solid waste disposed off on land by recovery of materials and energy from solid waste in a cost effective and environmental friendly manner (MF, 2009).

Public awareness and attitudes to waste can affects all stages in the SWM process, as noted in other studies (Imam, 2008) There are three measures to encourage users' and partners' involvement: information diffusion, awareness campaigns, and tax incentives (Suttibak et al., 2008). Indeed, the strategies which emphasize individuals' intrinsic and moral motivation to recycle and correctly

manage MSW are imperative for promoting household waste reduction behaviour (Pakpour et al., 2014). Introduction of sensitivity campaigns (Narayana, 2009) and economic incentives for those who demonstrate the best collection results (Torreta et al., 2013) are recommended in order to achieve high recycling rates. The lack of direct benefits, low public awareness, and lack of organized collection and planning do not encourage public collaboration, in particular among those who are not interested in environmental issues (Thomas, 2001). As a result, many studies encourage municipalities to introduce economic benefits, associated with high recycling rates (Verdugo, 2012), for reducing environmental impacts and improve the collection system.

The indiscriminate disposal of solid wastes is one major threat to environmental and human well-being (Ejaz, Akhtar, Hashmi & Naeem, 2010; Neller & Neller, 2009; Domato, 2002). Experts attribute the worsening problem on solid wastes dumping to the increasing human population and rapid industrialization (Barloa, Lapie, & de la Cruz, 2016). Solid wastes are any rubbish or refuse generated from undesirable or useless materials or substances (Desa, Kadir, & Yusoooff, 2011). Environmental degradation is worsened by the escalating accretion of solid wastes which have been improperly thrown everywhere (Arias, 1998). Solid wastes pertain to all unnecessary wastes coming from households, institutions, farming, and industries. Solid wastes have been the problem of rapidly urbanizing communities (Ogbona, Amangabara, & Ekere, 2007; Ramachandra & Bachamanda 2007; Khanal, Bhoj, Souksavath, & Bounsouk, 2015) because of improper solid waste management practices in terms of waste segregation, collection, and transport, waste disposal, and recycling. Dumping of solid wastes had exacerbated the effects of rains, typhoons, and storms, resulting in impeding water flows and flash floods (Al-Khatib, Monou, Abu, Shaheen, & Kassinos, 2010; Matunog, Victoria, & Awa, 2013). Thus, Solid Waste Management (SWM) remains a pressing environmental issue.

The solid wastes have become a major consequence of development, modernization and urbanization. The solid waste affects the natural environment and is a serious threat as these materials remain unless removed, burned or washed away (Anand, 2010). Impacts on problems concerning health and setting of the people will arise without proper management and planning. According to Mustaq (2010), eradicating the risk of community health and protecting the locale are the significant endeavors of Solid Waste Management (SWM). Solid waste is a waste a person considers to dispose of. Managing waste is one of the most expensive public services the government offers. Collecting, transporting,

treating and disposing of waste that doesn't harm the environment came to be a problem because of the increasing of waste production levels as the outcome of urbanization and growth in economic. The countries that face the worst scenarios of managing wastes are the ones developing because their revenue to enforce is limited (Mustaq, 2010).

## **FRAMEWORK**

This study is anchored on RA 9003 or the Ecological Solid Waste Management Act. This Act provides for an ecological solid waste management program which shall ensure proper segregation, collection, transport, storage, treatment and disposal of solid waste (Republic Act 9003). Moreover, solid waste management is a form of waste control, often associated with storing, collecting, transporting, processing, and disposing of solid waste that is in agreement with the codes of conservation, public health, engineering, economics and other environmental concerns (Robles, 2015). The implementation and enforcement of the provisions of this Act shall be the primary responsibility of the Local Government Units (LGUs) within their respective jurisdictions as stipulated in the RA 7160, otherwise known as the Local Government Code of 1991.

The law also mandates that segregation and collection of solid waste shall be conducted at the barangay level while a collection of non-recyclable materials and special wastes shall be the duty of the municipality or city (Republic Act 9003). It is the responsibility of LGUs to practice segregation because segregation facilitates the processing of wastes and substantially decreases the amount of wastes directed to the dumpsite. Thus, waste source segregation significantly cuts budget allotted to waste collection and transport which are the most expensive element in the total process of waste management (Nasrabadi, Hoveidi, Bidhendi, Yavari, & Mohammadnejad, 2008).

The lawmakers of the Philippines authored and passed Ecological Solid Waste Management (ECOSWAM) also known as Republic Act 9003. ECOSWAM presented a complete pursuit to the dilemmas of SWM. It provides the plan of the government “to adopt a systematic, comprehensive and ecological solid waste management program that will ensure the protection of public health and environment” (RA 9003, Art. 1, Sec. 2). The act led the creation of Solid Waste Management and Board National Solid Waste Management Commission in every Local Government Unit (LGU) making LGUs accountable in implementing services of ECOSWAM (Corinthia & Tucsán, 2008). It mandates

the SWM of the provincial/city, municipality and barangay level to implement, require reduction, segregation, recycling and recovery of waste. Local government units are also ordered to collect, transfer, treat and dispose solid wastes. This law was enacted by the Philippine Government and was signed into law by former president Gloria M. Arroyo during her administration. This law is in accordance to Section 15 of Article II in the Philippine Constitution that the „State shall protect and promote the people’s right to health and instil health consciousness. Moreover, Section 16 states that „the State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.

Deet folks respond to the mandate of RA 9003 by creating its own barangay-based solid waste management program. It is then the ardent desire of the researcher to look into the level of awareness, extent of practice on solid waste management of the respondents and the degree of seriousness on the problems met on the implementation of solid waste management system of the barangay.

## **OBJECTIVES OF THE STUDY**

The objective of this study is to establish the status of Solid Waste Management System of Barangay Deet.

This research determined the following:

1. Demographic profile of the respondents;
2. Level of awareness of the respondents on solid waste management in terms of control, transfer and transport, processing, and disposal;
3. Extent of practice on solid waste management in terms of control, transfer and transport, processing, and disposal;
4. Degree of seriousness on the problems met in the implementation of solid waste management system
5. Significant relationship between level of awareness and socio-demographic profile of the respondents;
6. Significant relationship between extent of practice and demographic profile of the respondents; and
7. Significant relationship between the level of awareness and extent of practice of the respondents on solid waste management in terms of control, transfer and transport, processing, and disposal.

## METHODOLOGY

### Research Design

The study utilized the descriptive-correlational research design to gather relevant information about the socio-demographic profile of the respondents, the level of awareness and extent of practice on solid waste management and the degree of seriousness on the problems met in the implementation of solid waste management system. It also determined the relationship between the level of awareness and extent of practice on solid waste management.

### Population and Locale of the Study

The study was conducted at Barangay Deet Tayum from June 25, 2019 – July 15, there were 210 respondents in this study who were taken from the seven sectors of the barangay using the Slovin's formula. The breakdown of the respondents are presented in table 1 below:

Table 1. Distribution of the Respondents

Respondents	N	n
Sector 1	80	38
Sector 2	59	28
Sector 3	71	34
Sector 4	52	25
Sector 5	54	26
Sector 6	64	30
Sector 7	61	29
TOTAL	441	210

### Data Gathering Instrument

Questionnaire-checklist adapted from Fontanilla (2003) was employed in gathering the data needed in the study. The questions evolved from the need to determine the level of awareness and extent practice of the respondents on solid waste management. The questionnaire was designed with emphasis on the four dimensions of solid waste management, namely; control, transfer and transport, processing and disposal. The first part of the questionnaire elicited basic information on the socio-demographic profile of the respondents. The second part was comprised of the level of awareness on solid waste management, the third part was comprised of the extent of practice on solid waste management

and the last part comprised of the degree of seriousness on the problems met in the implementation of solid waste management system which was adapted from Ajith (2014).

### Statistical Treatment of Data

The data that have been gathered in this study were treated statistically in the following manner:

1. The responses to the questionnaires were tallied and analyzed through the use of table of frequencies and percentages.
2. The Weighted mean was used to describe the level of awareness, extent of practice on solid waste management and the degree of seriousness on the problems met in the implementation of solid waste management system of the respondents.
3. Bivariate Correlation Analysis was used to determine the following;
  - a.) the relationship between the socio-demographic profile of the respondents and their level of awareness on solid waste management;
  - b.) the relationship between the socio-demographic profile of the respondents and their extent of practice on solid waste management; and
  - c.) the relationship between the level of awareness on solid waste management and their extent of practice on solid waste management of the respondents.

## RESULTS AND DISCUSSION

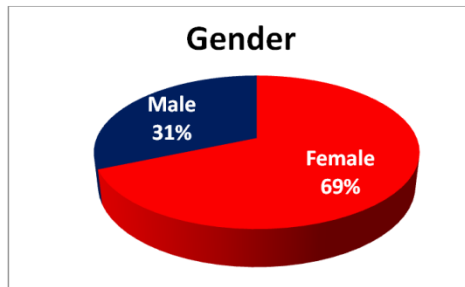
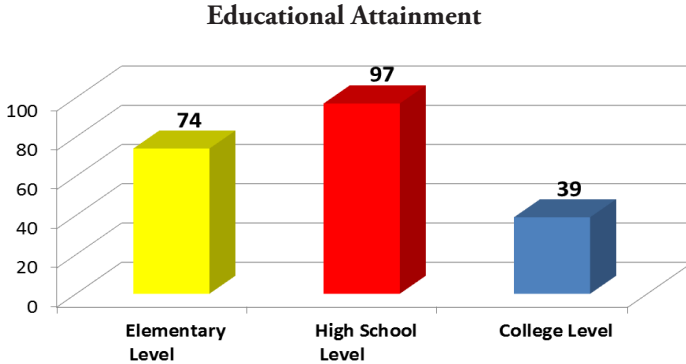


Figure 1



It is gleaned from the graph that in terms of gender, there are 144 (69%) female respondents and there are 66(31%) male respondents.

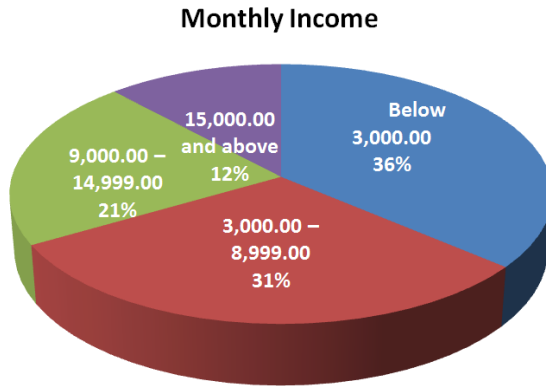
These results is similar to what was observed by Mlozi (1995) that urban agriculture is largely carried out by women and youth. This is probably due to the fact that, large proportion of solid wastes is generated at household level where women are key actors in terms of household activities.



**Figure 2**

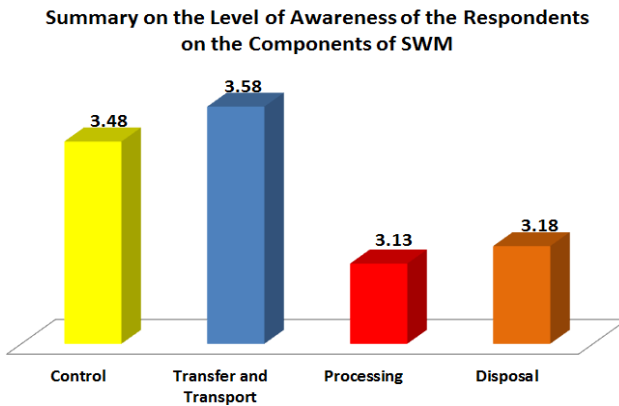
Figure 2 reveals that in terms of educational attainment, there are 74(35.24%) respondents who attained elementary level, 97(46.19%) respondents who attained high school level and 39 (18.57%) respondents who attained college level.

The result affirms the findings of Mlozi (2011) that the majority of community members had basic education and therefore likely to adopt new practices and ideas. Most of the respondents in the study were expected to be more helpful in relation to participation in solid waste management in their communities.



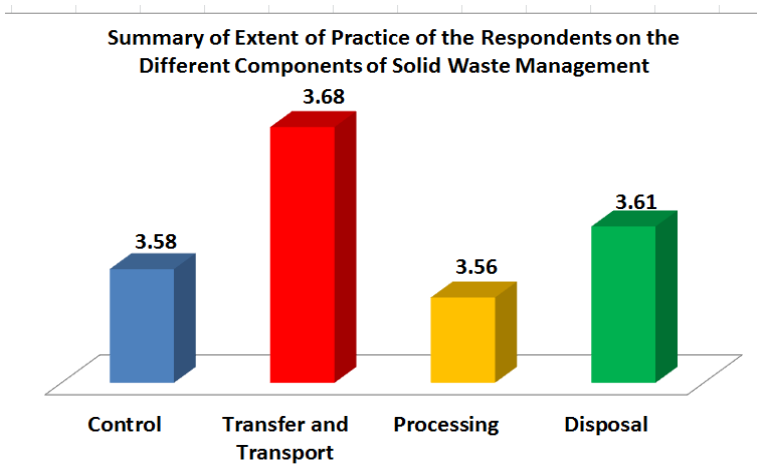
**Figure 3**

As shown on the graph, in terms of monthly income, there are 76(36.19%) respondents who have a monthly income of below 3,000.00, 64 (30.48%) respondents have monthly income that ranges from 3,000.00- 8,999.00 , 45( 21.43%) respondents have a monthly income ranging from 9,000.00- 14,999.00 and there are 25(11.90%) respondents having a monthly income ranging from 15,000.00 and above. The results implies that people of barangay Deet employ different livelihood strategies in meeting their daily lives.



**Figure 4**

As gleaned from figure 4, it is evident that the respondents are highly aware on the transfer and transport and control as revealed by a mean of 3.58 and 3.48 respectively. They are aware how to convey and where to bring their wastes. It also reflects that the respondents know already how to regulate the wastes they produce. The results affirm the findings of Adeyemo and Gboyesola (2013) which states that the level of awareness of people on solid waste management is affected by their attitude they also reported that homes with waste bins engage more in proper way of storing waste than homes without waste bins. In terms of processing and disposal as a whole, the respondents have a moderate level of awareness. The respondents know a little about recycling, there still need more seminars and lectures where they can gain insights on how they really manage their solid wastes. Studies by Taneja (2006) suggest that lack of awareness is one of the barriers to effective community participation. And according to Joshi (2016), lack of awareness, inappropriate technical knowledge, inadequate funding, unaccountability, implementation of legislation and policies are major reasons for the failure of SWM. Issues like proper site selection, adequate financial support, and improper human resource management, can be overcome with enhanced capacity, improved procedures and training. The solution to the problems associated with development and adoption of appropriate technologies and lack of trained manpower will require at realistic time frame. As stated by Palczynski (2002), proper waste management is a public benefit and obligation. Improper waste disposal by one individual affects the entire citizenry, so, as a policy, countries have tasked every individual, establishment or institution to contribute significantly to the process of keeping their communities and environment clean.



**Figure 5**

The figure 5 above shows the average mean as a whole of the extent of practice of the respondents on solid waste management. It shows that transfer and transport has the highest average mean of 3.68 which means that often practiced the proper way of carrying and bringing their wastes at the proper wastes sites. Under disposal, it has a mean of 3.61 which has a descriptive rating of often practiced. This reflects that since the respondents often practiced the proper transfer and transport of wastes, it follows that they also often practiced controlling, managing their wastes.

This indicates that the respondents often practiced throwing solid wastes in properly-labeled containers, solid compost waste, properly dispose of solid waste to keep away from disease-carrying organism burning solid waste to avoid air pollution and discouraging neighbors, friends and peers to dump their waste in vacant lots & other neglected areas. This affirms the finding of Adogu *et al* (2015) that proper waste disposal management is essential to sustain healthy living conditions in any environment. Strict adherence to appropriate waste management practices in any community will insulate the inhabitants from detrimental and hazardous environmental conditions and improve the living standard of the people. And as mentioned by Ketibuah *et al.* 2004 that the use of burning as a method of waste disposal by some people in the area causes air pollution and possibly contributes to global warming. Open burning of plastic waste by residents could result in air pollution with associated health problems due to heavy metal additives.

Moreover, littering of the environment with plastics also cause environmental nuisance through choking of drains and reducing the aesthetic beauty of the environment. The practice of open dumping in the study area poses health risk to residents close to the dumping sites. Srivastava *et al.* (2015) asserted that in open dumping, wastes are casually disposed off in low lying areas in an unacceptable manner without any discrimination resulting in environmental, health and aesthetic hazards. According to Vinod & Venugopal (2010) solid waste disposal has been identified as a major cause of pollution and environmental threat globally.

A large amount of solid wastes are generated from homes. Household waste is a major source of solid waste. The quantity of solid waste grows faster than population. Whereas, processing, it has a mean of 3.56 and the respondents where they often practiced lessening the amount of wastes they produced and control with a mean of 3.15 where the respondents often practiced regulating their wastes. The respondents often practiced separating biodegradable from non-biodegradable, refrain from throwing solid waste in waterways, share knowledge with family, friends and other members of the community and attend seminars, lectures and other trainings on solid waste management. As Aquino *et al.* (2013) concluded in their study that human activities contribute significantly in waste management. Recognizing the effects of improper management, garbage crisis can be prevented by practicing waste characterization and segregation at source, proper collection and transfer, recycling, and composting as mandated by the law.

Table 2. Degree of Seriousness on the Problems met in the Implementation of Solid Waste Management System

<b>Problems met in the Implementation of an Effective Solid Waste Management System</b>	Mean	Descriptive Rating
1. Public opposition and lack of public support	1.9	SS
2. waste segregation at generation level	2.23	SS
3. public education and motivation	2.0	SS
4. strict Laws and improper Legislation	1.97	SS
5. incentives to public to boost effectiveness	2.03	SS
6. Littering of waste by public	2.03	SS
7. Waste thrown away to street from residential houses	1.97	SS
8. participation by NGOs and residents	1.7	SS
9. technical know-how on waste segregation	1.87	SS

10. Insufficiency of land for treatment and disposal	1.87	SS
11. Shortage of recycling facilities	2.03	SS
12. Excessive dependence on informal sector for recyclables	2.1	SS
13. Excessive use of use and throw products	1.67	SS
14. commitment of elected representatives	2.17	SS

Legend SS – slightly serious

Table 2 shows, there are fourteen (14) problems met during the implementation of solid waste management system at barangay Deet. It clearly reflects that despite of these numbers of problems, they were slightly serious. It is but normal that in every undertakings, it is coupled with some factors that cause distraction, hinders you what is supposed to be done and what disturbs you as you are doing what is right.

According to Zurbrugg (2003), there are many challenges in solid waste management especially in developing countries such as inadequate service coverage for waste collection and operational inefficiencies of services due to lack of financial resources to cope with the increasing amount of generated waste produced by the rapid growing cities and due to inefficient institutional structures, inefficient organizational procedures, or deficient management capacity of the institutions involved as well as the use of inappropriate technologies; limited utilization of recovery and recycling activities due to high cost of storage and transportation; inadequate landfill disposal due to the financial and institutional constraints are the main reasons for inadequate disposal of waste especially were local governments are weak or under financed and rapid population growth continues; and inadequate management of hazardous and health care waste.

According to Tadesse (2004), the problems of solid waste management have been classified in to five major components such as low participation of households like in low community priority for solid waste management, low willingness to participate in collection and recycling, low willingness to keep public spaces clean, and low willingness to pay; management problems in the form of low willingness to manage, lack of accountability to the community and unrepresentative management; social operation problems such as low salary of operators, low status and bad working conditions, unreliable service, competition from private entrepreneurs and space problems; financial problems like cost recovery problems, inadequate fee collection and low ability to pay; and failing cooperation with municipalities such as direct obstruction of community-based solid waste management and lack of assistance from the municipality.

The findings of Beyene & Dessie (2014) in his study that the problems that hindered the public being participated in solid waste management in the study area are; poor awareness, lack of manpower who are coordinate and work in partnership with different stakeholders including the community at the city administration level, shortage of budget by the city administration, poor social participation causes poor solid waste management, poor rules and regulations implementation regarding to solid waste management and shortage of equipment.

Table 3. Correlational Matrix showing the Relationship between the Socio-demographic Profile of the Respondents and their Level of Awareness on Solid Waste Management

Socio-demographic Profile	Components of Solid Waste Management			
	Control	Transfer and transport	Processing	Disposal
Gender	-.447**	-.428**	-.483**	-.474**
Educational attainment	.759**	.827**	.850**	.864**
Monthly income	.173	.079	.089	.164

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The table shows that there is a significant relationship between the socio-demographic profile of the respondents and their level of awareness on solid waste management particularly gender and educational attainment, but there exist no relationship between the monthly income of the respondents and their level of awareness. This means that gender and educational attainment affects the level of awareness of the respondents and regardless whether they are female or male, whether they attained elementary level, secondary level or college level they are very much aware on the four components of solid waste management. This finding affirms Banga (2013) when he reported in her work that participation in solid waste management activities depends on the level of awareness, household income, educational level and gender. Also, Adeyemo & Gboyesola (2013) stated that, the attitude of people towards waste management can be affected by their level of knowledge and awareness of waste management.

The awareness, attitudes and behaviours of people in the community as cited by (Bartlett, 2005), are crucial to the management of waste. Reasons for individual participation in management of waste are related to environmental motivation, social pressures, attitudes and economic incentives Problems with waste management have arisen recently in developing countries where there is

a little history of environmental awareness education (Ojeda et al., 2000) and where many members of the community are illiterate and unaware of the problem of solid waste accumulation (Li, 2003)

Table 4. Correlational Matrix showing the Relationship between the Socio demographic -profile of the Respondents and their Extent of Practice on Solid Waste Management

Socio-demographic Profile	Components of Solid Waste Management			
	Control	Transfer and transport	Processing	Disposal
Gender	.074	.233**	.280**	.335**
Educational attainment	.645**	.440**	.560**	.488**
Monthly income	.022	.019	.031	.096

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The table shows that there is a high significant relationship between the Socio-demographic profile of the respondents and their extent of practice on solid waste management.

As stated by Ajani (2007) that gender and educational status, had been identified as factors influencing solid waste management in highly populated cities like Ibadan and Lagos. The positive attitude and practice of female towards waste management confirmed the findings of Pacey (1990) that formal education for women in particular is a prerequisite for change in sanitation behaviour. The findings indicate that most respondents understand waste management as a major environmental problem and also it indicates that the propensity for waste management practices to differ by gender. . Significant relationships were observed between respondent's sex, and their level of attitude, knowledge and practices of waste management.

The result of the present study contradicts the findings of Abdella & Balla, (2013) that the low educational background of the residents reflect their poor practices and attitudes towards solid waste management. Moreover income and status of employment which are products of the level of education are good indicators to the degree of willingness and participation in recycling.

As Simmones & Widmar (1990) concluded that a lack of knowledge and a lack of personal salience and efficacy were barriers that interfered with the motivating effect of a person's sense of responsible action and conservation ethic.



He also emphasized that without the information and perception of individual ability to reduce waste, the individual will not act on their internal sense of responsibility by participating in waste reduction programs.

Table 5 Relationship between Level of Awareness on Solid Waste Management and the Extent of Practice on Solid Waste Management of the Respondents

Level of Awareness Versus Extent of Practice	r-value
Control	0.730**
Transfer and Transport	0.449**
Processing	0.521**
Disposal	0.440**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 8 shows that there is a significant relationship between the level of awareness of the respondents and their extent of practice on solid waste management. It can be deduced that the residents have a high awareness on the practices and that they are familiar on the why's and how's of doing such practices, and actions to sustain the cleanliness of their community. It also shows that since the respondents are aware then they practice the proper management of solid wastes. This result contradicts the finding of Licy et al. (2013) that barangay folks are well aware of the importance of waste management but they are lacking in the practice of proper waste management.

As Kumar et al (2017) said that there are major issues associated with public participation in waste management and there is generally a lack of responsibility towards waste in the community. There is a need to cultivate community awareness and change the attitude of people towards waste, as this is fundamental to developing proper and sustainable waste management systems. Sustainable and economically viable waste management must ensure maximum resource extraction from waste, combined with safe disposal of residual waste. Also, Visvanthan & Glawe (2006) said that public awareness and public participation is a very vital in effective implementation of the solid waste management system. The cooperation from citizen is an important for solid waste management. The social aspect cannot be separated from the overall waste management system. Public participation becomes a significant factor for a successful solid waste management.

The level of awareness and the extent of practice of the residents should be strengthened. As mentioned by PEPA (2005), through information and education processes can increase public participation in different community development works largely in many ways including; media: leaflets, posters, notice boards, books, stories, games, videos, newspapers, radio, television. Events: public meetings, community discussion groups, competitions, drama/street theatre/music, theme days, clean-up days.

## CONCLUSIONS

Based on the findings, the following conclusions were drawn;

1. Majority of the respondents are female. Most of the respondents reached high school level and have a monthly income of below 3,000.
2. The respondents have a high level of awareness on solid waste management
3. The respondents often practiced solid waste management.
4. In terms of the degree of seriousness on the problems met in the implementation of solid waste management system, all are slightly serious.
5. There is a significant relationship between the socio-demographic profile of the respondents and the level of awareness on solid waste management except monthly income.
6. There is a significant relationship between the socio-demographic profile of the respondents and their extent of practice on solid waste management except monthly income
7. There is a significant relationship between level of awareness of the respondents and their extent of practice on solid waste management.

## RECOMMENDATIONS

Anchored on the results, the researcher highly recommends the following in order to answer SWM problems:

1. The barangay government should always include as part of the program during barangay assembly on continuous educating the residents on detailed topics about solid waste management, their involvement, participation and cooperation in all the undertakings of the barangay towards attaining a zero waste community.
2. A full and continuous cooperation of all residents to fight the problem on solid waste management.

3. The barangay officials should strengthen the implementation on the different ordinances on solid wastes.
4. The continuous strict implementation on segregation, recycling, reusing, and reducing of waste.
5. The sufficient allocation of budget to LGUs to carry out the SWM program of the barangay.
6. The government shall have to exert more effort in giving financial assistance needed to educate people and raise awareness on solid waste management, implement solid waste management with commitment for a long-term and aide all LGUs to the support they require for the complete and satisfying delivery of the service of the government in their action towards solid waste management.
7. There should be a contest on the cleanest barangay sector for the sustainability of the solid waste management program.
8. A similar study should be conducted to affirm the findings of this research endeavour.

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