Knowledge, Attitude, and Practices of Waste Management

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ABSTRACT

Garbage has become a growing global concern, particularly in developing countries like the Philippines, where waste generation continues to rise. Effective Municipal Solid Waste Management (MSWM) is vital for maintaining public health and environmental sustainability, yet its success depends largely on community participation. This study assessed the level of knowledge, attitude, and practices (KAP) on waste management among residents of the Municipality of Pavia, Iloilo. Using a descriptive quantitative design, data were collected from 300 respondents (150 males and 150 females) through a researcher-made Likert scale questionnaire and analyzed using mean and standard deviation. Findings revealed that residents exhibited an excellent level of knowledge, a highly positive attitude, and a very high level of practice toward waste management. Higher educational attainment and older age correlated with slightly higher KAP levels, while females showed marginally higher scores than males. The results underscore the importance of education in promoting environmental awareness and responsible waste behavior. It is recommended that local governments strengthen information campaigns and partnerships with community organizations to enhance waste management engagement and sustainability.

Keywords: waste management, knowledge, attitude, practices

INTRODUCTION

Garbage has emerged as a worldwide issue. It is involved in the global movement of goods, people, money, information, and visuals. Garbage can also move across the globe in less visible ways. For example, it can spread unintentionally, as highlighted by troubling environmental reports about the massive amounts of plastic waste floating in the world's oceans (Lindner et al., 2015).

According to Coracero et al. (2021), the volume of waste generated in the Philippines is steadily increasing and is expected to escalate further in the coming years, posing greater challenges for effective waste management and environmental sustainability. Municipal Solid Waste Management (MSWM) plays a crucial role in enhancing urban livability and safeguarding public health. Despite its importance, MSWM is often perceived as solely the government's responsibility. However, there is growing global consensus among stakeholders that active citizen participation is essential, as residents are the primary producers of municipal waste. One of the main barriers to fostering this involvement is the limited public awareness and weak communication channels between governments and communities. Addressing this challenge requires targeted policy measures aimed at bridging the communication gap and engaging citizens effectively (Kang et al., 2020).

Desa et al. (2011) found that both knowledge and attitudes toward solid waste management are shaped by several interrelated factors. Their study identified education level as a critical determinant, with individuals possessing higher educational attainment demonstrating greater knowledge and more positive attitudes toward environmentally responsible waste practices. Supporting these findings, Babaei et al. (2015) reported that demographic factors such as age and education significantly influence household knowledge, attitudes, and practices (KAP) related to solid waste management, emphasizing their impact on individuals' understanding and recycling behavior. Similarly, Adeolu et al. (2014) examined the influence of sex, age, and educational background on the KAP of secondary school students in Ibadan, Nigeria. Their findings revealed that sex did not significantly affect students' KAP, as both male and female students showed comparable levels of awareness and participation. However, age and educational background were found to be more influential, with older students and those at higher educational levels exhibiting greater knowledge and more responsible waste management practices.

Therefore, this study aimed to determine the level of knowledge, attitudes, and practices of residents regarding waste management, in order to assess community engagement and support the effective implementation of the municipal waste management plan.

METHODOLOGY

This study aimed to determine the level of knowledge, attitudes, and practices regarding waste management among residents of the Municipality of Pavia, Iloilo. A descriptive research design was employed to achieve this objective.

A descriptive research design is a quantitative research method used to systematically describe the characteristics of a population, situation, or phenomenon without manipulating variables. It focuses on answering the "what" rather than the "how" or "why" of a research problem (Creswell, 2014).

In addition, Kumar (2011) says, descriptive research attempts to systematically describe a situation, problem, phenomenon, service, or program, or provides information about the living conditions of a community.

The respondents of this study were 150 male and 150 female residents of Pavia, Iloilo and were chosen using non probability sampling technique specifically quota sampling. Quota sampling is a non-probability sampling technique in which researchers divide the population into mutually exclusive subgroups (such as age, gender, or income level) and then select participants from each subgroup based on a predetermined quota. This method ensures that specific characteristics of the population are represented in the sample (Etikan et al., 2016).

In conducting the study, ethical considerations were followed, ensuring that informed consent is obtained from all participants and that their confidentiality and anonymity are protected throughout the research process.

This study utilized a researcher-made questionnaire to assess the level of knowledge, attitude and practices on waste management of residents in the Municipality of Pavia, Iloilo. The questionnaire was designed with Likert scale items to facilitate quantitative analysis of the responses.

Mean and standard deviation was employed for descriptive data analysis to summarize and interpret the respondents' level of knowledge, attitude and practices on waste management.

RESULTS AND DISCUSSIONS

The level of knowledge, attitude and practices regarding waste management among the residents was assessed through a researcher-made questionnaire. Table 1 presents the level of knowledge of the residents when taken as a whole and when grouped according to age, sex and educational attainment. The result indicates that when taken as a whole (M = 3.65, SD =.30) the level of knowledge of residents is excellent. When analyzed by age groups, both residents aged 18 – 35 (M = 3.67, SD = .30) and those above 35 years old (M = 3.64, SD= .31) demonstrated an excellent level of knowledge. Similarly, when grouped according to sex, both male (M=3.63, SD= .33) and female (M=3.68, SD= .28) residents showed excellent level of knowledge. When grouped according to educational attainment, primary (M=3.44, SD=.35), secondary (M=3.60, SD= .29) and tertiary (M=3.76, SD=.27), got an excellent level of knowledge with a slight increase in the mean score as the educational attainment advances. This finding is in agreement with the result of the study conducted by Abushammala, H., & Ghulam, S. T. (2022) which implied that educational level does significantly impact the level of knowledge of residents of waste management. Similarly, a study conducted by Debrah et al. (2021), showed that knowledge of waste management can be increased through education.

Table 1. The Level of Knowledge of Residents When Taken as a Whole and When Grouped According Sex, Age and Educational Attainment

	N	**Mean**	**Std. Deviation**	**Description**
As a Whole	300	3.65	.30	Excellent

Age				
18- 35	132	3.67	.30	Excellent
Above 35	168	3.64	.31	Excellent
Sex				
Male	150	3.63	.33	Excellent
Female	150	3.68	.28	Excellent
Educational Attainment				
Primary	34	3.44	.35	Excellent
Secondary	127	3.60	.29	Excellent
Tertiary	139	3.76	.27	Excellent

Scale Range: 1. 00 – 1.75 Poor; 1.76 – 2.50 Fair; 2.51 – 3.25 Good; 3. 26 – 4. 00 Excellent

Table 2 presents the result on the level of attitude of residents towards waste management. When taken as a whole the level of attitude (M=3.72, SD=.29) of the residents towards waste management is highly positive. Similarly, when grouped according to age, 18 – 35 (M=3.73, SD=.27) and those above 35 years old (M=3.71, SD=.30) the level of attitude of residents is highly positive. Likely, when assessed according to sex, both male (M=3.69, SD=.31) and female (M=3.76, SD=.26) have highly positive attitude towards waste management, with females showing a slightly higher mean score compared to males. The result is consistent with the study conducted by Odok et al. (2018) which shows that female have a higher environmentally conscious attitude than male and concluded that gender significantly influences once attitude on waste management. Likewise, when grouped according to educational attainment, primary (M=3.64, SD=.28), secondary (M=3.71, SD= .28), tertiary (M=3.76, SD= .29), the residents have also a highly positive attitude with a slight increase in the mean score as the educational attainment advances. This result agrees with the conclusion by Adeolu et al. (2014) that people's attitude towards waste management can be linked to the levels of formal education.

Table 2. The Level of Attitude of Residents When Taken as a Whole and When Grouped According to Sex, Age and Educational Attainment

	N	**Mean**	**Std. Deviation**	**Description**
As a Whole	300	3.72	.29	Highly Positive
Age				
18- 35	132	3.73	.27	Highly Positive
Above 35	168	3.71	.30	Highly Positive
Sex				

Male	150	3.69	.31	Highly Positive
Female	150	3.76	.26	Highly Positive
Educational Attainment				
Primary	34	3.64	.28	Highly Positive
Secondary	127	3.70	.28	Highly Positive
Tertiary	139	3.76	.29	Highly Positive

Scale Range: 1.00 – 1.75 Highly Negative; 1.76 – 2. 50 Negative; 2.51 – 3.25 Positive; 3.26 – 4.00 Highly Positive

The level of practices among residents is shown in Table 3. It presents that when taken as a whole (M=3.64, SD=.32) the level of practice of the residents in terms of waste management is very high. When analyzed according to age, 18-35 (M=3.62, SD=.33) and those above 35 years old (M=3.65, SD=.31) the level of practice is also very high with older group slightly higher than the younger. Likewise, when group according to sex, male (M=3.62, SD=.32) and female (M=3.65, SD=.32), the level of practice is very high showing a slightly higher mean of the female. These findings are in accordance to the study of Ifegbesan (2010) that showed that waste management practices differ by sex and age. Similarly, when grouped according to educational attainment, primary (M=3.57, SD=.33), secondary (M=3.61, SD=.32) and tertiary (M=3.68, SD.32) also showed a very high level of practice with tertiary level slightly higher than the primary and secondary. These results agrees with the conclusion of Abushammala, et al (2022) that age, sex and educational attainment affects waste management practices.

Table 3. The Level of Practices of Residents When Taken as a Whole and When Grouped According to Sex, Age and Educational Attainment

	N	**Mean**	**Std. Deviation**	**Description**
As a Whole	300	3.64	.32	Very High
Age				
18- 35	132	3.62	.33	Very High
Above 35	168	3.65	.31	Very High
Sex				
Male	150	3.62	.32	Very High
Female	150	3.65	.32	Very High
Educational Attainment				
Primary	34	3.57	.33	Very High

Secondary	127	3.61	.32	Very High
Tertiary	139	3.68	.32	Very High

Scale Range: 1.00 – 1.75 Low; 1.76 – 2.50 Moderate; 2.51 – 3.25 High; 3.26 – 4.00 Very High

CONCLUSIONS AND RECOMMENDATIONS

The result of the study showed that the level of knowledge of the residents on waste management whether taken as a whole or when grouped according to age, sex and educational attainment is excellent. This indicates that the residents are well knowledgeable in terms of the idea of waste management and are aware of the environmental impact caused by improper waste management across demographic groups including age, sex and educational background. It suggests that the residents understand the policies and regulations that are implemented in the area and that they are aware of the significant effect of reducing waste in daily life in the global environmental sustainability.

However, it showed that there is a slight increase in the level of knowledge of the residents as the educational attainment advances which may signify that education plays a significant role in enhancing the awareness and understanding of the residents of waste management.

It also shows that the level of attitude of the residents on waste management is highly positive whether taken as a whole or when grouped according to age, sex and educational attainment. This may signify that the residents believe in the importance of waste management for environmental protection and that it is the responsibility of not only the government but of each individual as well. It may also mean that the residents feel that it is very important to educate everyone on the importance of waste management and that everyone should be accountable for their contribution to waste. Although the result shows both sexes have a highly positive attitude towards waste management, slightly higher attitude of females shown on its mean result may be attributed to females' hands on role or involvement to household waste management. The result also indicates that there is a slight increase in the level of attitude of the residents as their educational attainment progresses that may signify that education plays an important role of not only enhancing the residents understanding of waste management but as well as contributing to positive perception or attitude towards waste management.

The study also reveals that the level of practice on waste management of the residents is very high when taken as a whole or when grouped according to sex, age and educational attainment. This indicates that both male and female are committed in participating in waste management, with females exhibiting a slightly higher level of practice that may reflect of its role on household waste management. As well as age and educational attainment plays a significant influence on the very high practice of waste management with older residents slightly higher that younger residents and those who are in tertiary level than primary and secondary. It indicates that more mature and educated residents are exhibiting a better waste management behavior.

Based on these results, education plays a vital role in the understanding of waste management and promoting positive attitude towards it. Therefore, it is recommended that programs and other platforms may be used to enhance the residents' knowledge, awareness and understanding. Campaigns may be conducted and may be tailored to different demographics such as age, sex and educational attainment of the residents to further improve their knowledge and understanding as well as encourage them to actively participate for the success of the implementation of waste management. Additionally, the local government unit may engage other private sectors and community organizations in the planning, monitoring and policy enforcement.

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