AWARENESS, ATTITUDE, AND PRACTICES OF GUIMARAS STATE COLLEGE (GSC) PERSONNEL ON E-WASTE MANAGEMENT

Ethel P. Junco
ORCID No. 0000-0002-2422-6210
ethel.junco@gsc.edu.ph

Rodrigo G. Paglomutan Jr.
ORCID No. 0000-0001-8082-6838
rodrigo.paglomutan@gsc.edu.ph

Fernando Libutaque, Jr.
fernado.libutaque@gsc.edu.ph

ABSTRACT Electronic waste (e-waste) is the fastest growing waste stream, and its disposal is a major environmental concern in all parts of the world. These waste components are responsible for hazardous pollution of the environment and affect the health of the population. This study was carried out to ascertain the GSC Personnel's level of awareness, attitude, and practices on e-waste management, their mode of disposal of the e-waste and their awareness of the dangers inherent in the improper handling and disposal of wastes. The study made used of descriptive research design. Data were collected from 73 faculty and staff respondents. Likert Scale and Positive-Negative scale were adopted for the analysis of the data. The findings of the study revealed that majority of the personnel were in the age bracket of 18 to 25 years old, female, single, baccalaureate degree holder and casual personnel of GSC. High level of awareness and Positive attitudes of the GSC personnel were found regardless of their ages, sexes, civil status, degrees, and positions. Moreover, moderate level of practices was found in terms of age, sex, civil status, degree, and position. However, low level of practices was found on the personnel with doctoral degree. The level of awareness of the respondents were significantly influenced by their degree and position in the organization, in which those baccalaureate degree holders show a higher level of awareness while undergraduate personnel have higher positive attitude, and master's degree holder has a higher level of practices on e-waste management compared to other degrees of the respondents. There were no significant differences in the levels of awareness, attitude, and practices when grouped according to sex, age, and civil status. While there were significant differences in the level of awareness, attitude, and practices of the respondents in terms of degree and position. Furthermore, there were significant relationships between attitude and awareness and also between practices and attitude.

Keywords: e-waste, awareness, attitude, practices, personnel, GSC

INTRODUCTION

Background of the Study

Waste Electrical and Electronic Equipment (WEEE) or e-waste for short is a generic term embracing various forms of electric and electronic equipment which are disposed of or are required to be disposed of (Needhidasan, Samuel, & Chidambaram, 2014; Basel convention, 2017). During the last few decades, the electrical and electronics industry has experienced enormous growth. The increase in consumption of electronic equipment, personal computers, and mobile phones in particular has been unprecedented. Coupled with increasing consumption is the increasing accumulation and generation of e-waste (Liza, 2015). Advances in technology, decreasing product prices, and product designs that discourage upgrading and repair have increased the demand for new products and the disposal of old ones.

In 2018, 50 million metric tons of e-waste is estimated to be generated globally. E-waste contains of over 1000 different substances, some of which are hazardous substances such as arsenic, beryllium, lead, mercury and cadmium (Balde, et al., 2015; UN Nations Environmental Programme as cited in (Ohajinwa, et al., 2017).

In the Philippines, the International Telecommunications Union estimates that cellular mobile phones ownership increased from 34,000 units in 1991 to almost 52 million units in 2007. With a population of about 80 million, approximately 2 out of 3 persons in the country possess a cellular phone. The same is true for personal computers, wherein a phenomenal increase in ownership is observed over the last 15 years. In 1991, personal computer ownership was estimated to be around 6,300 units and it went up to 6.3 million units in 2006.

The flood of used and discarded information and communication equipment, as well as other electronic products, is a growing concern. In addition to the quantities of waste, there are a number of toxic substances that require special handling, and precious metals are being lost.

Hence, this study is conducted to facilitate the development of an E-waste management infrastructure in the Guimaras State College, develop the policy framework for E-waste management, identifying E-waste generation and accumulation, and finally, to promote a favorable climate which encourages recycling and materials recovery of E-waste.

Statement of the Problem

This study was conducted to determine awareness, attitude, and practices of GSC personnel on e-waste management. Specifically, this sought an answer to the following questions: (1) What is the profile of the Guimaras State College personnel in terms of age, sex, civil status, and course, (2) What is the level of awareness, attitude, and practices of the GSC personnel on e-waste when grouped in terms of age, sex, civil status, course, and when taken as a whole, (3) Is there a significant difference between the level of awareness, attitude, and practices of the GSC personnel on e-waste management when grouped in terms of age, sex, civil status, and course, and (4) Is there a significant relationship between the level of awareness, attitude, and practices of the GSC personnel on e-waste management?

METHODOLOGY

The study used a descriptive research design. The respondents of this study were the 74 teaching and non-teaching personnel of the Guimaras State College regardless of the status of employment. A researcher-made questionnaire was used to gather data from the respondents. In addition, they were designed to retrieve further information about the presence and nature of possible informal recyclers and the purpose for which e-waste is used. Personal interview was also conducted with various experts in order to obtain or complement the information needed.

The total enumeration was used as a sampling procedure. The statistical tools to be used were frequency count, percentage distribution, mean, Mann Whitney U, Kruskal Wallis test, and Multivariate Analysis.

RESULTS AND DISCUSSIONS

Profile of the Respondents

Data in Table 1 shows the profile of the respondents. Results revealed that most of the respondents were young with age ranging from 18 to 25 years old and dominated by female respondents. Majority of them were single, attained bachelor's degree, and working as casual personnel.

Table 1. Profile of the Respondents

	Profile	Frequency	Percent
Age	18 to 25y/o	29	39.7
	26 to 34 y/o	12	16.4
	35 to 43 y/0	8	11.0
	44 to 52 y/o	11	15.1
Sex	Not Specify	13	17.8
	Male	28	38.4
	Female	45	61.6
Civil status	Single	40	54.8
	Married	33	45.2
Degree	Undergraduate	4	5.5
	Baccalaureate	49	67.1
	Master	14	19.2
	Doctoral	6	8.2
Position	Permanent	15	20.5
	Casual	37	50.7
	Job Hire	19	26.0
	Part-Time	2	2.7
	TOTAL	73	100.0

Level of Awareness, Attitude, and Practices on E-Waste Management

Data in Table 2 shows the level of awareness, attitude, and practices of GSC personnel towards e-waste management. Result revealed that part time personnel were very high aware on the level of awareness and regardless of the profile of the personnel they got high aware on e-waste management. On the level of attitude, shows positive attitude in terms of age, sex, civil status, degree, and position. On the level of practices, they got moderate practices in terms of the profile of the respondents. Further, moderate level of practices was found in terms of age, sex, civil status, degree, and position. While low level of practices was found on the personnel that attained doctoral degree.

Table 2. The respondents Awareness, Attitude and Practices towards E-Waste Management when grouped according to profile and taken as a whole

Profile		Awareness		Attitude		Practices	
		Mean	Interpretation	Mean	Interpretation	Mean	Interpretation
Age	17 to 25y/o	3.87	High	12.31	Positive	2.79	Moderate
	26 to 34y/o	4.04	High	12.50	Positive	3.21	Moderate
	35 to 43y/o	4.12	High	12.50	Postive	2.97	Moderate
	44 to 52y/o	3.97	High	12.27	Positive	2.87	Moderate
Sex	Male	3.97	High	12.57	Positive	2.97	Moderate
	Female	4.02	High	12.27	Positive	2.86	Moderate
Civil status	Single	3.93	High	12.30	Positive	2.90	Moderate
	Married	4.09	High	12.48	Positive	2.90	Moderate
Degree	Undergrad	3.79	High	13.00	Postive	2.95	Moderate
	Baccalaureate	4.03	High	12.49	Positive	2.91	Moderate
	Masters	4.01	High	11.93	Positive	3.04	Moderate
	Doctoral	3.92	High	12.17	Positive	2.51	Low
Position	Permanent	3.96	High	12.07	Postive	2.72	Moderate
	Casual	3.99	High	12.43	Positive	3.09	Moderate
	Job Hire	4.00	High	12.47	Positive	2.65	Moderate
	Part-time	4.50	Very High	13.00	Positive	3.14	Moderate
	Total	4.00	High	12.38	Positive	2.90	Moderate

Scale:					
1.00-1.79	Very low	1-10	Negative	1.00-1.79	Very Low
1.80-2.59	Low	11-20	Positive	1.80-2.59	Low
2.60-3.39	Moderate			2.60-3.39	Moderate
3.40-4.19	High			3.40-4.19	High
4.20-5.00	Very High			4.20-5.00	Very High

An examination in Table 3 shows that there were no significant differences in the levels of awareness, attitude, and practices when grouped according to sex, age, and civil status. The result was supported based on the given p-values which were greater than 0.05 alpha level.

While the same examination shows significant differences in the level of awareness, attitude, and practices of the respondents in terms of degree and position. The result was also supported by the given p-values of less than 0.05 alpha level, therefore the hypothesis was rejected. This implies that the level of awareness, attitude, and practices of the respondents were significantly influenced by their degree and position, in which those baccalaureates shows a higher level of awareness, while undergraduate have higher positive attitude, and master's degree have a higher level of practices compare to those other degrees of the respondents.

Table 3. The difference between respondents Awareness, Attitude and Practices towards E-Waste Management when grouped according to profile

Variables	Tabular	Awareness value	Interpretation	Tabular	Attitude value	Interpretation	Tabular	Practices value	Interpretation
Sex	-1.23	0.618	Not Significant	-0.62	0.535	Not Significant	-1.418	0.102	Not Significant
Age	3.264	0.8055	Not Significant	2.001	0.78	Not Significant	1.658	0.563	Not Significant
Civil Status	4.3245	0.3555	Not Significant	1.97	0.373	Not Significant	0.882	0.643	Not Significant
Degree	42.885	0.000	Significant	23.265	0.003	Significant	19.264	0.002	Significant
Position	19.503	0.005	Significant	14.539	0.002	Significant	22.873	0.000	Significant

*p<0.05 level of significance

Table 4 below shows that there was no significant relationship between the level of awareness and the attitude of the respondents but a significant positive relationship between the practices and level of awareness and the attitude of the respondents was observed. This implies that the levels of practices were significantly dependent on the level of their awareness and attitude towards the management of e-waste, but their attitude was not influenced by their awareness. Further, the positive significant relationship implying that the higher the attitude of the respondents will have, their positive attitude will also increase, that will leads to a higher positive e-waste management practices.

Table 4. The relationship between respondents Awareness, Attitude, and Practices towards E-Waste Management

	r-value	p-value	Interpretation
Attitude*Awareness	0.240*	0.041	Significant
Practices*Awareness	0.220	0.062	Not Significant
Attitude*Practices	0.248*	0.034	Significant

p.0.05 level of significance

CONCLUSION

Based on the findings of the study, the following were plausibly concluded: The respondents have high awareness, positive attitude, and a moderate level of practices on e-waste management. The level of awareness, attitude, and practices of the respondents were significantly influenced by their degree and position, in which those baccalaureate shows a higher level of awareness, while undergraduate has a higher positive attitude, and master's degree has a higher level of practices compare to those other degrees of the respondents. There were no significant difference in the levels of awareness, attitude, and practices when grouped according to sex, age, and civil status while significant differences found in terms of degree and position. Further, there were significant relationships between attitude and awareness and between practices and attitude. The higher the attitude of the respondents will have, their positive attitude also increases, and that leads to higher positive e-waste management practices.

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