Innovations

Perceived Effects of Adopting Waste Segregation Practices to Homes and School

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Abstract

The study entitled, "CLSU Student's Adoption on Waste Segregation Practices and Its Perceived Effects at their Homes and School" determined the waste segregation practices adopted by the students at homes and school and the relationship between student's socio-demographic characteristics and information source with their adoption on waste segregation practices. The study used random sampling and 72 students served as respondents. A combination of qualitative and quantitative research approaches was used. Survey questionnaire was utilized to gather information. Major findings reveal that the students' socio-demographic characteristic like age, sex, educational attainment, seminars attended and annual family income were highly significant related to their adoption of waste segregation practices. Meanwhile, the students' sources of information such as interpersonal and media were highly significant with the students' adoption of waste segregation practices. Akin to this, source is significant in adoption on waste segregation. It can create awareness to individuals about the importance and benefits of recycling, both in the short term and long term, for them as well as the societies they live in and the world at large. The study recommends that students and professors should be given more trainings on waste segregation because they serve as role models. Households should also be taught and reminded to adopt waste segregation practices. Also, further study should be conducted to determine the adoption level of waste segregation and its effects to the environment.

Keywords: *1. Adoption 2. Waste Segregation 3. Practices*

Introduction

Waste segregation is one of the important things that every individual should observe to protect our environment. Whether the person is living in a community, provinces, or cities, he should take his part in taking care of the environment as the importance of waste segregation is something that we can no longer afford to ignore (Axil Integrated Services, n.d).

Due to the rapid growth in population and consequently, rise in the consumption of packed goods, the amount of non-biodegradable waste is increasing over time. According to Metropolitan Transfer Station (2017), the improper waste management is considered as the main cause of environmental pollution. Within the areas of the household and school, an individual or a student in particular, is one of the waste generators. Environmental protection has attained highest importance globally, but the practices of basic concepts of waste segregation are often neglected. Each person is aware of the impact of improper waste disposal practices, but the negative attitude of implementation gives rise to negative situations.

In 2000, waste segregation has been put into a law through *Republic Act 9003*, also known as the Ecological Solid Waste Management Act. The law was crafted in response to the looming garbage problems in the country. The law ensures the protection of public health and the environment and the proper segregation, collection, transport, storage, treatment, and disposal of solid waste through the formulation and adoption of best environmental practices.

After several years, since the law was enacted, Central Luzon State University implemented the same law through Ramon Magsaysay - Center for Agriculture Resources and Environmental Studies (RM-CARES). The main thrusts of the policy of solid waste segregation are anti-littering at CLSU and segregating of wastes in all dormitories and stall owners in the University Marketing Center and Old Market to protect the university's environment. All of the trash bins at CLSU premises are in color yellow (non-biodegradable) and color green (biodegradable), and there are several signs which state that littering is prohibited. Due to this law, all students have been aware that the university is implementing a law to protect our environment. However, until now, most of the students are not following the university's policies and rules on waste segregation. They are just throwing their garbage anywhere with the perception that the janitor will clean it.

In a broader view, Nueva Ecija, home of 1.95 million Filipinos ranked no. 3 in garbage production leaving the province with greater responsibility to manage the wastes (World Bank, 2010). Having a small amount of garbage gives us worry, but managing an enormous amount of garbage gives a bigger problem. In CLSU, though the collectors are collecting the garbage on the bins, there are trashes that are not in the bins, which are both biodegradable and non-biodegradable. This is because most of the students do not throw their wastes in respective bins. This is one problem because it is hard for the collector to segregate the wastes.

Based on the problem presented above, this research was conducted to look at the factors that opted the students to disobey the waste segregation practices implemented by the university. Further, this provides some empirical data that would suggest some strategies to make students be more aware of the practices on proper waste segregation and be more responsible in waste segregation, and to make the university's environment clean and green.

Objectives of the Study

This study has the following objectives:

1. To determine the socio-demographic characteristics of the CLSU students;
2. To identify the source of information on waste segregation recommended practices;
3. To share the waste segregation practices done by the students at their homes and school;
4. To determine the perceived effects of adopting waste segregation practices by the students at their homes and school; and
5. To determine the relationships of the students' socio-demographic characteristics and their source of information with their adoption of waste segregation practices.

Hypothesis of the Study

This study attempted to test the following null hypotheses.

1. There is no significant relationship between the socio-demographic characteristics of the respondents and their adoption on waste segregation practices; and

2. There is no significant relationship between the source of information of the respondents and their adoption on waste segregation practices.

Review of Related Literature

Adoption of Waste Management

The main legal instrument governing solid waste management (SWM) in the country is the Ecological Solid Waste Management Act of 2000 (*RA 9003*), signed into law by President Gloria Macapagal-Arroyo on January 26, 2001. This law declares the adoption of a systematic, comprehensive, and ecological solid waste management program as a policy of the state. It adopts community-based approaches to SWM and mandates waste diversion through recycling and composting, among others. Households can adopt the law to segregate their waste in their houses. However, Banga (2011) mentioned the reason cited by the households for not participating in any form of waste separation activity, and this is being time consuming.

Waste Management is a multifaceted problem comprising political, socioeconomic, institutional, and environmental aspects. Due to exponential urban growth, it has become one of the most significant issues faced by developing countries. The gap in environmental knowledge among the youth and the old within developing countries contribute to ecological issues resulting in unsustainable development (Debrah, et al., 2021). However, according to Community Tool Box (n.d), adoption of best practices is recognized as solution to problems.

Student's Source of Information

Information source may vary on certain person on how they would adopt the technology/program that you are introducing to your target audience. Information is power that encourages audience to follow certain technology.

Mrema (2008) states that source is significant in adoption on waste segregation. It can create awareness to individuals about the importance and benefits of recycling, both in the short term and long term, for them as well as the societies they live in and the world at large.

Types of information source

It is almost universal finding in studies investigating human information behavior that people choose other people as their preferred source of information. Studies of academic researchers in humanities have revealed the importance of consulting with their colleagues at different stages of their research. Personal sources are also among the most important sources consulted by anyone (Johnson, 2004). Ordinary citizens confirm the importance of personal contacts in information seeking behavior. The poor, as well, prefer interpersonal sources over other sources of information. The use of people as information sources has often been typically easier and more readily accessible than the most authoritative printed sources. People are indeed important and inevitable source of information *(*Ridenour, 2021). The use of people is *a least effort* option in the search for information (Johnson, 2004).

Communication Techniques

There should be a method of communicating waste management system and proposed strategies with the community (McAllister, 2015). Technique is one of the best ways to equip people with knowledge on waste segregation or management and other important issues.

According to Reyes, P & Furto, M. (2003), one of the factors that influenced the effectiveness of solid waste management system in a particular city or municipality is proficiency in public communication. However, whether a person is knowledgeable on certain policy or not, if they are not following what they know is vain. In addition to this, Douangchanh (2008) concluded that some of the reasons for the low level of community participation in solid waste management development are inadequacy of campaigns, workshops

and community awareness and education programs, lack of coordination and lack of incentives for people to participate in the activities.

Research Methodology

A combination of qualitative and quantitative approaches was employed in this research. Quantitative approach for the numerical data and qualitative approach for verbatim in support of the numerical data.

Since the study used simple random sampling, the researcher picked out two among eight colleges of the university through draw lots. Two courses with the most number of summer/midterm enrollees in two colleges were chosen. Forty-one (41) from free section and 31 from food technology. A total of 72 respondents represent the population.

To gather information, a survey questionnaire was utilized. Descriptive statistics and the Pearson Product-moment Correlation Coefficient (Pearson r) was applied for quantitative data and to test the relationship of dependent variables to the independent variables, respectively.

Results and Discussion

Socio-demographic characteristics

Out of 72 respondents, table 1 shows that most of the students belonged to 18-19 years old with 84.72%. Eight respondents are 20-21 years old, and three are 22-23 years old with 11.11% and 4.17%, respectively. There are 50 female respondents (69.44) and 22 males (30.56%). Most (45.83) of the respondents are 3rd year college. However, majority (97.22%) of them have not attended any trainings related to solid waste management. Also, respondents with 70,001-110,000 and 230,001 and above annual family income recorded a percentage of 27.79 and 26.39, respectively.

Source of information

For the interpersonal source of information of the respondents, table 2 shows that most (62.38%) of the respondents got information on waste segregation from their professors. However, respondents also get information thru friends, family, and dorm manager with 31.68%, 3.96%, and 1.98%, respectively.

For the media source, TV is still the top information source of the respondent on waste segregation with 76.39%. However, Facebook, google, and radio contributed to the level of awareness of the respondents with 8.33%, 8.33%, and 6.94%, respectively.

Students' waste segregation practices adopted at home and school

Table 3 reveled that respondents were following the recommended practices at home and school. As such, to keep their home clean and protect the nature from pollution caused by unsegregated waste, most of the them are not casting waste outside their homes and schools (77.78%), throwing their garbage at the right bins (69.74), segregating waste from biodegradable to non-biodegradable (66.67%), among others.

Further, since most of the students knew the negative impact of improper waste segregation, they are separating their waste base on the following classification: biodegradable (100%), non-biodegradable but non-recyclable (95.83%), and non-biodegradable but recyclable (90.28%). Moreover, they were throwing their garbage at the right bins and picking up bottles, candy wrapper scattered on classroom with 100% and 77.78%, respectively.

Perceived effects of adopting waste segregation practices at home and school

Table 4 shows that all respondents agreed that proper waste segregation advocates clean surroundings, decline in the population of harmful insects, low chance of having disease, fresh air, avoids flooding and clean classroom, among other are perceived effects of adopting solid waste practices at home and school.

Relationship between students' socio-demographic characteristics and information source with their adoption on waste segregation

Pearsons r was used to determine the relationships between student's socio-demographic characteristics and sources of information with their adoption on waste segregation practices. Table 5 shows that age, sex, educational attainment, annual family income, interpersonal and media are highly significant with their adoption on waste segregation. However, there is no significant relation between seminars attended with their adoption on waste segregation.

Conclusion

Based on the findings of this study, the following conclusions were made:

Majority of the respondents were the youth. Since most of them have no attendance in seminars/training on waste segregation programs of the university, their knowledge on waste segregation is limited.

Parents and professors remain to be the most credible and best sources of information on waste management. Among the media, television was still the primary source of information on waste segregation. Hence, interpersonal and media sources were highly related to their adoption of waste segregation.

Some socio-demographic characteristics of the students like age, sex, educational attainment, and annual family income, were highly significant related to their adoption on waste segregation practices. Their attendance to seminars/training have no significance to their waste segregation practices adoption.

Recommendations

Based on the findings of this study the following recommendations were made:

The university should conduct more trainings on waste segregation management programs for freshmen students. Students' organizations can also be mobilized to help in the waste segregation campaign within the university. Fellow students can teach and remind each other to adopt the waste segregation practices in their schools and at their homes.

Since the professor is the most credible and best source of information, their knowledge on waste management should be strengthened and the program should be integrated in the course syllabus. For a more massive campaign on waste segregation management, television should be tapped like the cable system to broadcast information on waste segregation. Print materials like streamers, banners, posters, or billboards carrying information on waste segregation management programs should be placed within the campus and vicinity of the university, most especially in the strategic points where the students were always hanging around.

The waste segregation program of the university should be implemented strictly for the proper management of waste disposal and sustain the pleasant environment of the university. The university should require all stall owners inside the university to have trash bins or garbage cans for biodegradable, non-biodegradable, and recyclable waste materials. Students, faculty members, and staff should observe proper segregation of waste. This will be achieved if the university would strictly implement the policy.

References

1. *Axil Integrated Services (n.d). The Importance of Waste Segregation. Retrieved from axil-is.com*
2. *Metropolitan Transfer Station (2017). 6 Negative Effects of Improper Waste Management. Retrieved from www.metropolitantransferstation.com.au*
3. *World Bank, (2010). Philippines: Toward Greener Waste Management. Retrieved from www.academia.edu*
4. *Banga, M. (2011). Household Knowledge, Attitudes and Practices in Solid Waste Segregation and Recycling: The Case of Urban Kampala. Retrieved from scholarship.law.cornell.edu*

5. *Debrah, J, Vidal D, & Dinis M.(2021). Raising awareness on solid waste management through formal education for sustainability: a developing countries review. Retrieved from bdigital.ufp.pt*
6. *Mrema, K. (2008). An Assessment of Students' Environmental Attitudes and Behaviors and Effectiveness of their School Recycling Programs. Retrieved from www.semanticscholar.org*
7. *Johnson, C. (2004). Choosing people: the role of social capital in information seeking behavior. Retrieved from informationr.net*
8. *Ridenour, R. (2021). Pursuing Truth: A Guide to Critical Thinking.Retrieved from bookdown.org*
9. *McAllister, J. (2015). Factors Influencing Solid-Waste Management in the Developing World. Retrieved from digitalcommons.usu.edu*
10. *Reyes, P & Furto, M. (2003). Greening of the Solid Waste Management in Batangas City Retrieved from research.lpubatangas.edu.ph*
11. *Douangchanh, V. (2008). Community Participation Development in Solid Waste Management in Lang Probing, Lao PDR. The World Bank Group. Retrieved from research.lpubatangas.edu.ph*

Tables 1 to 5

Table 1. Socio-demographic Characteristics of the Respondents

Profile	Frequency n=72	Percentage %
Age (years old)		
18-19	61	84.72
20-21	8	11.11
22-23	3	4.17
Sex		
Male	22	30.56
Female	50	69.44
Educational Attainment		
2nd year College (12 years of schooling)	28	38.89
3rd year College (13 years of schooling)	33	45.83
4th year College (14 years of schooling)	6	7.89
4th year College (overstaying)	5	6.94
Seminars Attended (waste segregation)		
Yes	2	2.78
No	70	97.22
Annual Family Income		
Below 70,000	14	19.44
70,001-110,000	20	27.79
110,001-150,000	8	11.11
150,001-190,000	6	8.33
190,001-230,000	5	6.96
230,001-above	19	26.39

Table 2. Source of Information

Particulars	Frequency n=72	Percentage %
Interpersonal Source		
Friends	23	31.68
Professors	45	62.38
Family	3	3.96
Dorm Manager	1	1.98
Media Source		
TV	55	76.39
Radio	5	6.94
Facebook	6	8.33
Google	6	8.33

Particulars	Frequency n=72	Percentage %
At home		
I separate my waste from biodegradable to non-biodegradable	48	66.67
I am throwing my garbage at the right bins	50	69.44
I am not casting my waste outside our home	56	77.78
I am not burning a garbage	4	5.56
At school		
I separate my waste based on the following classification: Biodegradable Non-biodegradable but non-recyclable Non-biodegradable but recyclable	 72 69 65	 100 95.83 90.28
I throw my garbage at the right bins	72	100
I pick up waste that I have seen when walking and casting in garbage	11	15.28
I pick up bottles, candy wrapper and Paper that are scattered on classroom	56	77.78

Table 3. Students' waste segregation practices adopted at home and school

*Multiple responses

Table 4. Perceived effects of adopting waste segregation practices at home and school

Particulars	Frequency n=72	Percentage %
Effects at home		
Proper waste segregation	72	100
Clean surroundings	72	100
Insects declined	72	100
Low chance of having diseases	72	100
Fresh air		
Avoid having flood		
Effects at school		
Clean surroundings	72	100
Fresh air	72	100
Clean classroom	72	100
Concern on environment	72	100

*Multiple responses

Table 5. Relationship between Students' Socio-Demographic Characteristics and Information Source with their Adoption on Waste Segregation

Particulars	Adoption on recommended practices R
Socio-demographic Characteristics	
Age	.673**
Sex	.971**
Educational attainment	.665**
Seminars attended	.115**
Annual family income	.838**
Information Source	
Interpersonal source	.613**
Media source	.585**

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