



THE PERCEIVED LEVEL OF IMPLEMENTATION OF THE CAGAYAN STATE UNIVERSITY CANTEEN OF THE CITY ORDINANCE NO. 11-2000

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ABSTRACT: *Solid waste has been one of the major problems of countries all over the world and several acts and ordinances have been passed with the aim to control the solid waste management. The City Ordinance No. 11-2000 also known as the “The Solid Waste Management Code of Tuguegarao City” provided by the Local Government Unit of Tuguegarao City which mandates and monitors the proper compliance of Ecological Solid Waste Management within the city. It is an order implemented in accordance to the R.A. 9003 or the “Ecological Waste Management Act of 2000”. This study aimed to determine the perceived level of implementation Cagayan State University Canteens of the City Ordinance No. 11-2000 as per RA.9003 mandate. This study made used of the data triangulation method to determine the level of implementation of the CSU-Andrews canteen owners regarding their solid waste management specifically directed to the solid waste segregation as perceived by the respondents. The data sources of this study were the customers, canteen owners, and University committee in charge in monitoring the solid waste segregation of the Canteens. The statistical tools used in this study are the frequency counts, means. Weighted mean was used to analyze the level of implementation of solid waste management of canteen owners as perceived by the customers and the employees with regard to City Ordinance No. 11-2000. Results of the study therefore bring to the conclusion that canteen owners are not fully implementing the city ordinance as perceived by the student-customers and the employees. The researcher strongly recommends a stricter implementation of the city ordinance and must be observed by the canteen owners and that a blatant violation of it shall be dealt with by the University*

KEYWORDS: *ordinance, solid waste, management, canteen owners, employees, customers, perceived level, compliance*

INTRODUCTION

Solid waste has been one of the major problems of countries all over the world and several acts and ordinances have been passed with the aim to control the solid waste management. One of the laws implemented by the government is Republic Act 9003 or the “Ecological Waste Management Act of 2000” which serves as a framework for other ordinances. This act tackles all types of waste distinguished as biodegradable, non-biodegradable, hazardous and even those recyclable wastes.

The City Ordinance No. 11-2000 also known as the “The Solid Waste Management Code of Tuguegarao City” provided by the Local Government Unit of Tuguegarao City which mandates and monitors the proper compliance of Ecological Solid Waste Management within the city. It is an order implemented in accordance to the R.A. 9003 or the “Ecological Waste Management Act of 2000”. But despite the existence or presence of these acts and ordinances, the government has faced the difficulty of monitoring the different sources or producers of wastes.

In technical note, the term ‘solid waste’ is used to include all non-liquid wastes generated by human activity and a range of solid waste material resulting from the disaster, such as



general domestic garbage such as food waste, ash and packaging materials; human feces disposed of in garbage; emergency waste such as plastic water bottles and packaging from other emergency supplies; rubble resulting from the disaster; mud and slurry deposited by the natural disaster; and fallen trees and rocks obstructing transport and communications. Other specialist wastes, such as medical waste from hospitals and toxic waste from industry, will also need to be dealt with urgently, but they are not covered by this technical note (World Health Organization, 2011).

Historically, solid waste management did not get any specific attention in policy and legislation except as part of the larger domain of environmental issues on utilization, protection and conservation, management of natural resources and the regulation of behavior causing negative impact on the environment (Reyes B., Furto M., 2013). It was provided however in Article 11 of the Philippine Constitution, 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. Thus, the Philippine government takes into consideration the promulgation of various Presidential Decrees and the enactment of several Republic Acts which took direct action on solid waste management (Reyes B., Furto M., 2013).

Solid waste management has been one of the major concerns of the government as well as its implementation and compliance. Along with the growing population and the urbanization and industrialization, people's lifestyle, especially the children of today's generation, affect their behavior in conforming to the practice. According to Mazzanti, waste generation is the most important aspect to look at in order to have an effective solid waste management system (Mazzanti&Zoboli, 2008). The generation of waste varies considerably between countries based on the culture, public awareness and management (Kathiravale & Mohd Yunus, 2008). The saying goes that "if you can measure it you can manage it" this is a viewpoint that is especially important and a solution that most developing countries have not been able to accomplish in solid waste management. There is no measure of the waste generated and so management becomes difficult and inefficient (Mazzanti & Zoboli, 2008). The generation of waste is reported to be associated with the economic status of a country. Generally, according to Kathiravale & Mohd Yunus (2008), developed countries generate more waste than developing countries. In Asia, countries with higher GDP, namely Hong Kong and Japan were reported to generate more waste compared to developing countries such as India, Vietnam and Nepal. Waste composition from these countries also differs where rural areas often produce more organic waste and fewer recyclable items.

Integrated Sustainable Waste Management (ISWM) system was then introduced in 1995 to improve earlier system that neglect unique characteristics of a given society, economy and environment. For example, European countries had applied various system assessment tools and engineering models to create sustainable communities, manage resources efficiently, tapping innovation potential of the economy, ensuring prosperity, environmental protection and social cohesion in their SWM system. Asian countries had also given attention in building the national legal frameworks, managing institutional, technology, operational and financial aspects, and creating public awareness and participation (Shekdar, 2009).



The motivations for materials separation and reuse in developing countries include: scarcity or expense of virgin materials; the level of absolute poverty; income supplement, the frugal values of even relatively well-to-do households; and the large markets for used goods and products made from recycled plastics and metals. (UNEP, 2005: Sarkhel & Banerjee, 2009: Fehret al, 2009). Fehr et al (2009) further recommended the introduction of legal instruments within a municipal model that mandate source separation and encourages educational and legal measures for solid waste management success (CG Conference).

Proper solid-waste collection is also an important aspect for the protection of public health, safety, and environmental quality. It is a labor-intensive activity, accounting for approximately three-quarters of the total cost of solid-waste management (Curley, 2011). Today, technology is advancing and chemical recycling of plastic wastes has also been made possible. Regardless of the technology chosen, each has its pros and cons. The information on each disposal option needs to be clarified to determine the suitable option for each particular country.

In many developing countries and countries with economies in transition there are two types of recycling sectors, a formal sector and informal sector. Formal recycling sector, using efficient technologies and state-of-the-art recycling facilities are rare. As a result, recyclable materials are managed through various informal sectors with low-end management alternatives such as manual separation of recyclable components, burning of some components in open pits to recover precious metals, and dumping of residues into surface water bodies. This informal sector of the economy employs thousands of poor people who are not aware of the hazard of exposure or hazards that exist in some recyclable materials (Yao Bedi, 2017).

In a recent article, the key institutions responsible for solid waste management services include public sector, formal private sector, informal private sector and community based non-governmental organizations. The proper identification of their roles and responsibilities has been cited as a major influence in a sustainable solid waste management. At present, the public sector is responsible for service delivery of solid waste management in most developing countries and they are finding it difficult due to the rapid explosion in population growth hence more waste to manage. Some major problems that affect the municipalities' inadequacy to provide good solid waste system include poor planning, lack of experienced staff, inappropriate equipment and technology, insufficient funds and landfill sites for disposal, and the behavior of each and every individual towards waste management (Yuan, et. Al, 2015).

The most recent of which is R.A. 9003 or the Ecological Solid Waste Management Act of 2000 which serves as the legal framework for the country's systematic, comprehensive and ecological solid waste management program that shall ensure protection of public health and the environment. It empowers local government units to actively pursue their own SWM systems through preparation of a 10-year SWM plans; creation of a SWM Board responsible for the preparation and implementation of a plan for the safe and sanitary management of solid waste; mandatory segregation of waste; implementation of recycling programs; setting up a Material Recovery Facility; prohibition of open dumpsites as final



disposal facility; promoting the establishment of multipurpose environmental cooperatives and associations responsible for undertaking SWM activities or projects; provision of monetary and other rewards and incentives to entities that have undertaken outstanding and innovative SWM programs; encouragement of LGUs to impose fees sufficient to pay the cost of preparing and implementing their SWM plans; creation of a local SWM fund from donations, collection of fines and fees, and allocation from the development fund; and definition of prohibited acts, penalties, suits and other legal actions concerning R.A. 9003. The 10-year SWM plan of an LGU should put emphasis on implementing feasible and environmentally sound techniques of waste minimization such as re-use, recycling, and composting programs.

With the signing of the RA 9003 into law, a challenge is posed for the local government to implement the provisions of the Republic Act into local laws and ordinances (Bulay og, et al., 2010). Republic Act 9003 is the law that promotes a way of thinking that waste is a resource that can be recovered. This can be achieved by following the 3R's: reduce, reuse, and recycle. The law mandates one to put these principles into practice. By doing so, the problem of solid waste management can be solved. The law requires the following: solid waste must be reduced at source, recyclable and biodegradable materials have been separated and used, is to be disposed of properly. Solid waste management begins inside the household. Starting in the homes, people must learn to conserve resources so they can reduce the amount of materials that they throw away.

Higher institutions have the responsibility of having high moral and ethical obligation to the environment because they are expected to produce leaders in environmental protection movement. Armijo de Vega (2008) research acknowledges the good use of campuses for the reason that not much has not been reported on the topic and SWM practices adopted by higher education institutions have a great potential of being adopted by surrounding communities because these institutions generally are held in high esteem.

Academic institutions can become more environmentally responsible through the implementation of various conservation initiatives. Along this, the study attempt to transform the Camarines Sur Polytechnic Colleges into living models of ecologically sustainable learning institutions. Data was gathered from among the six administrators, 336 students, 62 teaching and 31 non-teaching personnel from school year 2013-2014. Questionnaire supported by interview and ocular inspection was utilized to assess the college practices along its environment policy, resource management, curriculum, project and budget. Results revealed that the college has an Eco Friendly Program and has implemented guidelines along solid waste management in classroom and laboratories. Awareness on environment policy, resource management in classrooms, buildings and grounds, purchasing, use of lights and electricity, paper conservation, water conservation, waste management were highly implemented. Maintenance on air quality and waste management in the canteen were moderately implemented in the college. Generally, the colleges are aware along environmental programs and highly implement its environmental practices. T-test result shows that there was no significant difference between the level of awareness and implementation on environmental practices. The proposed Eco Friendly



School Model developed by the researcher must be adopted by the college (Ibarrientos, 2015).

In Cagayan State University, there is no Material Recovery Facility that is put up for the wastes of the canteen stalls. Segregation of wastes of the canteen owners has become a primordial concern by the University.

STATEMENT OF THE PROBLEM

This study aimed to determine the perceived level of implementation Cagayan State University Canteens of the City Ordinance No. 11-2000 as per RA.9003 mandate. Specifically, it sought to answer the following questions:

1. What is the level of implementation of CSU canteen owners with regard to solid waste segregation and the observance of the City Ordinance No. 11-2000?
2. What is the level of implementation of CSU canteen owners with regard to solid waste segregation as perceived by the student-customers and the employees?
3. Is there a significant difference between the canteen owners and student-customers as well as the employees as regards the levels of implementation of stall owners on solid waste segregation and their compliance with City Ordinance No. 11-2000?

HYPOTHESIS

This study was guided by the lone hypothesis that there is no significant difference on the level of implementation of canteen owners on solid waste segregation as perceived by the canteen owners and student-customers as well as the employees as regards the implementation of the City Ordinance No. 11-2000?

METHODOLOGY

This study made use of the data triangulation method to determine the level of implementation of the CSU-Andrews canteen owners regarding their solid waste management specifically directed to the solid waste segregation as perceived by the respondents. The data sources of this study were the customers, canteen owners, and University committee in charge in monitoring the solid waste segregation of the Canteens.

RESPONDENTS OF THE STUDY

The participants of this study consisted of twenty (40) student-customers, fifteen (15) canteen owners and two (2) administrative employees. The student-customer respondents were chosen randomly.



RESEARCH INSTRUMENT

This undertaking made used of a structured questionnaire through random sampling as the main research instrument in the gathering of data.

STATISTICAL TOOL

The statistical tools used in this study are the frequency counts, means. Weighted mean was used to analyze the level of implementation of solid waste management of canteen owners as perceived by the customers and the employees with regard to City Ordinance No. 11-2000

A five-point likert scale was used to interpret the levels of implementation City Ordinance No. 11-2000

4.20---5.0---Fully Implemented

3.40---4.19---Moderately Implemented

2.60---3.39---Somewhat Implemented

1.80---2.59---Slightly Implemented

1.00---1.79---Not Implemented

ANOVA will also be used to test the significant differences on the level of implementation of solid waste management practices of stall owners as perceived by the stall owners themselves the customers and the CSU administration.

RESULTS AND DISCUSSIONS

**Table 1. Perceived Level of Implementation of City Ordinance No. 11-2000
By the Canteen Owners**

QUESTIONS	Mean	Std. Deviation	Descriptive Value
I properly practice waste segregation.	4.733	.5936	Fully Implemented
I sort the wastes by type.	3.867	1.5523	Fully Implemented
I have separate trash bins for biodegradable.	4.133	1.3558	Fully Implemented
I have separate trash bins for non- biodegradable.	4.200	1.2071	Fully Implemented
I have separate trash bins for residual waste.	4.400	.7368	Fully Implemented
I have separate trash bins for recyclable.	4.867	.3519	Fully Implemented
I label their trash bins according to their type.	4.200	.8619	Fully Implemented
I do the segregation of wastes themselves.	4.867	.3519	Fully Implemented
There is a responsible group for segregation in my stall.	4.000	1.1339	Fully Implemented
I place their trash bins in front of their stalls where customers may easily see them.	3.733	1.2799	Fully Implemented
I have spare trash bins for each type of wastes.	4.800	.4140	Fully Implemented
I use trash bins with proper covers.	3.667	1.2344	Fully Implemented
I see to it that if the trash bins are full, there is a designated area for the segregated wastes.	4.533	.7432	Fully Implemented
I see to it that if wastes are not on their proper bins, they segregate the wastes before finally disposing them.	4.400	.8281	Fully Implemented
I see to it that after initial segregation, the owners do not mix them up on one large container.	4.400	1.1212	Fully Implemented
AVERAGE	4.320		Fully Implemented

Table 1 shows the perceived level of implementation of the canteen owners of City Ordinance No. 11-2000. As shown from the table, the canteen owners perceived that they



have complied with the provision of the ordinance considering that this category got an average weighted mean of **4.320** or a descriptive value of **fully implemented**. The data further showed the canteen owners have provided separate bins for recyclable wastes as well as having the belief that they do the segregation themselves.

**Table 2. Perceived Level of Implementation of City Ordinance No. 11-2000
By the Student-Customers**

QUESTIONS	Mean	Std. Deviation	Descriptive Value
Canteen owners properly practice waste segregation.	2.850	1.2680	Somewhat Implemented
Canteen owners sort the wastes by type.	2.700	1.3416	Somewhat Implemented
Canteen owners have separate trash bins for biodegradable.	2.500	1.0000	Somewhat Implemented
Canteen owners have separate trash bins for non-biodegradable.	2.450	1.0501	Slightly Implemented
Canteen owners have separate trash bins for residual waste.	2.250	1.0699	Slightly Implemented
Canteen owners have separate trash bins for recyclable.	2.550	1.0990	Somewhat Implemented
Canteen owners label their trash bins according to their type.	2.500	1.1921	Somewhat Implemented
Canteen owners do the segregation of wastes themselves.	2.700	1.1286	Somewhat Implemented
There is a responsible group for segregation in every stall.	2.300	1.1743	Slightly Implemented
Canteen owners place their trash bins in front of their stalls where customers may easily see them.	2.750	1.4464	Somewhat Implemented
Canteen owners have spare trash bins for each type of wastes.	2.500	1.1002	Somewhat Implemented
Canteen owners use trash bins with proper covers.	2.650	1.0400	Somewhat Implemented
Canteen owners see to it that if the trash bins are full, there is a designated area for the segregated wastes.	2.450	1.1910	Somewhat Implemented
Canteen owners see to it that if wastes are not on their proper bins, they segregate the wastes before finally disposing them.	2.250	.9665	Slightly Implemented
Canteen owners see to it that after initial segregation, the owners do not mix them up on one large container.	2.550	.8870	Somewhat Implemented
AVERAGE	2.530		Somewhat Implemented



Table 2 shows the perceived level of implementation of the student-customers of City Ordinance No. 11-2000 by the canteen owners. As shown from the table, the student-customers perceived that canteen owners have somewhat implemented the provision of the ordinance considering that this category got an average weighted mean of **2.530** or a descriptive value of **somewhat implemented**. The data further showed the canteen owners have partially complied the provision of the ordinance.

**Table 3. Perceived Level of Implementation of City Ordinance No. 11-2000
By the CSU Administration/employees**

QUESTIONS	Mean	Std. Deviation	Descriptive Value
Stall owners properly practice waste segregation.	3.000	0.0000	Somewhat Implemented
Stall owners sort the wastes by type.	3.000	0.0000	Somewhat Implemented
Stall owners have separate trash bins for biodegradable.	3.000	0.0000	Somewhat Implemented
Stall owners have separate trash bins for non-biodegradable.	3.000	0.0000	Slightly Implemented
Stall owners have separate trash bins for residual waste.	3.000	0.0000	Slightly Implemented
Stall owners have separate trash bins for recyclable.	2.500	.7071	Somewhat Implemented
Stall owners label their trash bins according to their type.	3.000	0.0000	Somewhat Implemented
Stall owners do the segregation of wastes themselves.	3.000	1.4142	Somewhat Implemented
There is a responsible group for segregation in every stall.	4.000	0.0000	Fully Implemented
Stall owners place their trash bins in front of their stalls where customers may easily see them.	3.500	.7071	Somewhat Implemented
Stall owners have spare trash bins for each type of wastes.	3.000	0.0000	Somewhat Implemented
Stall owners use trash bins with proper covers.	3.000	0.0000	Somewhat Implemented
Stall owners see to it that if the trash bins are full, there is a designated area for the segregated wastes.	3.000	0.0000	Somewhat Implemented
Stall owners see to it that if wastes are not on their proper bins, they segregate the wastes before finally disposing them.	3.000	0.0000	Slightly Implemented
Stall owners see to it that after initial segregation, the owners do not mix them up on one large container.	3.000	0.0000	Somewhat Implemented
AVERAGE	3.067		Somewhat Implemented

Table 3 shows the perceived level of implementation of the University employees of City Ordinance No. 11-2000 by the canteen owners. As shown from the table, the employees



perceived that canteen owners have somewhat implemented the provision of the ordinance considering that this category got an average weighted mean of **3.067** or a descriptive value of **somewhat implemented**. The data further showed the canteen owners have partially complied the provision of the ordinance.

Table 4. Summary On The Test Of Significant Difference Between The Three Groups On Their Perception In The Level Of Implementation On Solid Waste Segregation Of Stall Owners

SUMMARY				
Groups	Count	Sum	Average	Variance
Canteen Owners	15	64.8	4.3	0.3
Student-Customers	40	50.6	2.5	0.7
CSU employees	2	6.1	3.1	0.0

Table 4.1 Test of Significant Difference between The Three Groups On Their Perception In The Level Of Implementation On Solid Waste Segregation Of Stall Owners

ANOVA							
Source of Variation	SS	df	MS	F	P-value	F crit	
Between Groups	27.56132	2	13.78066216	28.28338244	5.8435E-08	3.275897991	
Within Groups	16.566	34	0.487235294				
Total	44.12732	36					

Analysis of Variance (ANOVA) was used to test significant difference of the perception of canteen owners, student-customers and employees on the level of implementation of canteen owners with regard to City Ordinance No. 11-2000. Also, it can be viewed on the descriptive table that the mean level of the canteen owner and employees is significantly higher than that of the student-customers with 2.5. This means that the student-customers perceived that the stall owners are neither complying nor not complying with laws and rules of the City Ordinance No. 11-2000.

FINDINGS

Results showed that canteen owners perceived the implementation of the ordinance as **FULLY IMPLEMENTED** and compliant to its provisions on solid waste management. Student-customers and University employees perceived that the canteen owners is partially compliant as revealed in the result that canteen owners have **SOMEWHAT IMPLEMENTED** the provision of the city ordinance.

CONCLUSION

As revealed from the results, this study therefore concludes that canteen owners are not fully implementing the city ordinance as perceived by the student-customers and the employees.



RECOMMENDATION

Based on the findings, the following are strongly recommended:

1. A stricter implementation of the city ordinance be observed by the canteen owners and that a blatant violation of it shall be dealt with by the University
2. Regular monitoring of the canteens must be enforced to ensure the compliance of the canteen owners with the ordinances CSU Andrews Administration must mandate stall owners for a more proper waste segregation in their respective stalls.
3. Future researches of this kind shall be conducted with in-depth discussion of the areas not covered by this study

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