

Awareness Of Malaybalay City on Ordinance No. 962 On Plastic and Polystyrene: Basis for Intervention

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ABSTRACT

Plastic pollution has become one of the world's most critical environmental issues that people are facing today. In Malaybalay City, Article 7 Ordinance 962, known as Plastic and Polystyrene Regulation, was enacted to address the problem of banning single-use plastic. This study will assess the level of awareness of market vendors, other establishments vendors, and customers on Plastic and Polystyrene Regulation Article 7 Ordinance 962 in Malaybalay City. This research assessed the plastic and polystyrene regulation practices that are applied the most, and then the study formulated ordinance intervention for Malaybalay City. This study used a descriptive quantitative research design in data gathering. The instrument that used in gathering data for this study is a researcher-made questionnaire that utilizes a Likert scale and an open-ended questionnaire. Findings disclosed that the market vendors, other establishments vendors, and customers in Malaybalay City encounter problems in the awareness of plastic and polystyrene. The results overall mean was high awareness. The recommendation included bringing your bags and following the regulations, ordinances, and platforms such as signage and internet information to spread properly the said awareness of regulation. Based on the data gathered, mostly prefer a necessary resources and guidelines, continuous monitoring and evaluation that enables the market vendors, establishments vendors, and customers adopt and apply the regulation in the use of plastic bags, regulation in the use of polystyrene. Article 7 of ordinance No. 962, and adaptation of the residents on the mandate on "bring your own bag" program that must encourage individuals to strengthen the enforcement of regulation or law.

Keywords: Awareness, Vendors and Customers, Plastic and Polystyrene

INTRODUCTION

Plastic bags and Polystyrene contain hazardous chemical substances that can cause environmental damage, health risks, and effects in global concern. Plastics are created with different life span, some can last a decade but packaging type of plastic typically has a very short useful life among other types (Geyer, 2019).

Plastic banning in the Philippines is also a problem that plastic bags, straws, bottles, and takeaway containers are so ingrained in daily lives that is hard to escape. Government bans the use of plastic on dry goods and regulates the use of plastic on wet goods very loosely. A prohibition on the sale of single-use plastic products like bags, straws, cutlery, cups, stirrers, and styrofoam goods went into force in the Philippines in 2020. (ASTM, 2018).

In Malaybalay City, Article 7 Ordinance No. 962 known as Plastic and Polystyrene Regulation had been enacted method to address the problem regarding on banning single use plastic. The legal basis of this study is Republic Act 9003 is an act providing for an ecological solid waste management program and City Ordinance 962 known as Plastic and Polystyrene Regulation in Municipality of Malaybalay to keep the City clean and green by banning the use of plastic bags and Styrofoam.

This study is supported by the theory of waste management, is more detailed account of the domain and includes conceptual waste analysis, waste activity, and a comprehensive view of waste management's objectives. Theory of Waste Management is based on the belief that waste management should stop waste from creating harm to the environment and human health. Reduce, Reuse, and Recycle. Each of us needs to contribute in order to keep as much waste out of the landfill as possible. (Phillips, E. Pogracz and R.L. Keiski, 2004).

This study will seek to assess the level of awareness of market vendors, other establishments vendors and customers on Plastic and Polystyrene Article 7 Ordinance 962 in Malaybalay City. Specifically, this study attempts to answer the following questions.

1. What is the level of awareness of market vendors, establishment vendors, and customers in Malaybalay City on Article 7 Ordinance 962 series of 2020 in terms of:
 - 1.1 Regulation on the use of plastic bag;
 - 1.2 Regulation on the use of polystyrene;
 - 1.3 Regulation on the use of plastic straw; and
 - 1.4 Adoption of the residents on the mandate on "bring your own bag"?

2.What are the challenges encountered by the market vendors, establishment vendors, and customers in Malaybalay City in their awareness of Article 7 Ordinance 962?

3.What intervention initiative can be proposed to improve the awareness of market vendors, establishment vendors, and customers on plastic and polystyrene in Malaybalay City Article 7 Ordinance 962?

The study will be delimited with 70 participants which are the market vendors, other establishments vendors, and customers of Malaybalay City Bukidnon. The participants will be randomly selected using stratified random sampling.

This research is made with the aim to have accurate information regarding the awareness of market vendors, other establishments vendors, and customers in plastic and polystyrene regulation. The vital results of this study could be highly significant specially to Local Government Unit (LGU), City Economic Enterprise and Management Office (CEEDMO), City Health Office, City Environment and Natural Resources (CENRO), Market Vendors and Business Establishments Vendors, Consumers, and Future researchers.

LITERATURE REVIEW

Republic Act 9003 an act providing for an ecological solid waste management program creates the necessary institutional mechanisms declaring certain prohibited acts, providing penalties, appropriating funds, and other purposes. This act measures the aims to promote a more justifiable system that is in lined to the visions of sustainable development. Banning single-use plastics only in the public sector. Banning its production, distribution, use, disposal, and trade as mandated by Republic Act 9003 will have tremendous benefit to the ocean and the health of the people and wildlife as we grapple with the COVID-19 pandemic, climate change and the fisheries and biodiversity crisis.

In Malaybalay City, an Ordinance No. 962 series of 2020 on Plastic and Polystyrene Regulations was enacted to prohibit the use of plastic bags and polystyrene. The legislation provides management and advancement to changes in the use of plastic materials from various establishment kinds. It encourages people to choose environmentally friendly products or to bring their own bags instead of recycling bags. The ordinance also known as "No to single use plastics ordinance of 2020" was enacted on March 2. It aims to regulate the sale, distribution, and use of plastics in the city. The ordinance also aims to implement waste reduction plans, programs, and practices within the city and to "enhance the right of the people to a balanced and healthful ecology in accord with the harmony of nature.

The legal basis of this study is Republic Act 9003 is an act providing for an ecological solid waste management program and City Ordinance 962 known as Plastic and Polystyrene Regulation in Municipality of Malaybalay to keep the City clean and green by banning the use of plastic bags and Styrofoam. The regulation encourages individual to adopt changes for being aware and address its concern, issues, and problem to plastic and polystyrene. It aims to improve the ordinance by spreading the informations in a specific place. To provide alternative solutions on strategic plan that is essential for environment and health.

This study is supported by the theory of waste management theory Phillips, E. Pogracz and R.L. Keiski (2004) is a more detailed account of the domain and includes conceptual waste analysis, waste activity, and a comprehensive view of waste management's objectives. Theory of Waste Management is based on the belief that waste management should stop waste from creating harm to the environment and human health.

METHOD

The respondents of this research were seventy (70) participants divided into public market vendors, other establishments vendors, and customers of Malaybalay City, they were chosen through stratified random sampling. This study used a descriptive quantitative research design in data gathering. The instrument that was used in gathering data for this study is a researchers-made survey questionnaire which utilizes likert scale and open-ended questionnaire. The questionnaire is composed of three parts. The first part deals with the personal profile of the research participants which collects important information required in the research. The second part is the level of awareness on ordinance of plastic and polystyrene regulation and the part three will be the generated questions on the challenges encountered by the market vendors. To analyze and interpret gathered data relative to the level of awareness of market vendors, the mean and standard deviation will be used for problem one. On the challenges, frequency count and percentage. While proposed intervention used the thematic analysis.

RESULT AND DISCUSSION

Table 3 Level of Awareness of Market Vendors on Ordinance No. 962 of Malaybalay City

General	Specific regulation	Mean	SD
Description regulations			
1.Use of plastic bags in dry	3.85	1.08	High
Awaren			
goods;			
2.Use of plastic bags in wet	4.20	0.95	High
Awaren			

Use of Plastic goods; 3.60 0.94 High Awareness	3.60	0.94	High	Awareness
3.Regulation on the selling and distribution of plastic bags;				
4.Individual participation in providing reusable and recyclable bags; and	4.50	1.00	Very H	Awareness
5.Exemption of primary packaging.	3.50	0.94	High	Awareness
Mean	3.93	0.06	High	Awareness
6.No business owner shall sell Styrofoam or expanded polystyrene foam;	3.45	1.05	High	Awareness
7.Private and Public institutions shall not utilize or provide Styrofoam; and	3.40	1.09	Fair	Awareness
8.Exemption of pre-pack foods.	3.55	1.05	High	Awareness
Mean	3.46	0.02	High	Awareness
9.Plastic straws; and	3.35	1.13	Fair	Awareness
10.Plastic stirrers	3.35	1.08	Fair	Awareness
11.Plastic utensils.	3.30	1.21	Fair	Awareness
Mean	3.33	0.06	Fair	Awareness
Bring your own bag' program	4.10	0.64	High	Awareness
Mean	4.10	0.64	High	Awareness

Overall Mean	3.67	0.14	High	Awareness
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Legend:

1.00 – 1.80	Very Low Awareness
1.81 – 2.60	Low Awareness
2.61 – 3.40	Fair Awareness
3.41 – 4.20	High Awareness
4.21 – 5.00	Very High Awareness

Table 3 presents the level of awareness of market vendors on Ordinance No. 962 of Malaybalay City. The results found out that market vendors and other establishments vendors has in high awareness. This means that the market vendors were high awareness. This implies that it is efficiently had a proper dissemination of information in strict prohibition of the use of plastics and polystyrene. The enforcement methods have often contributed to ban the use and good managed of singleuse plastics and polystyrene. It also serves that LGU and CEEDMO in Malaybalay City inform the market vendors to follow the rules on strengthening the banned and awareness of the regulation on Article 7 Ordinance No. 962.

Asian Development Bank 2013, current status and policy recommendations practices reduce, reuse, recycle waste especially in urban areas. Disposal methods is helpful way to improve plastic and polystyrene ordinance. It also intended to increase awareness on the regulation.

Table 4 Level of Awareness of Other Establishments vendors on Ordinance No. 962 of Malaybalay City

General regulations	Specific regulation	Mean	SD	Description
1.Use of plastic goods;	goods; 4.10 0.59	4.10	0.59	High Awareness
2.Use of plastic goods;	goods; 4.15 1.03	4.15	1.03	High Awareness
3.Regulation on the selling and distribution of plastic bags;	4.60 0.68	4.60	0.68	Very H Awareness
4.Individual participation in providing reusable and recyclable bags; and	4.45 0.68	4.45	0.68	Very H Awareness
5.Exemption of primary packaging.	3.90 0.91	3.90	0.91	High Awareness
Mean	4.24 0.18	4.24	0.18	Very H Awareness
6.No business owner shall sell Styrofoam or expanded polystyrene foam;	4.15 0.87	4.15	0.87	High Awareness
Mean	4.00 1.02	4.00	1.02	High Awareness

7.Private and Public institutions shall not utilize or provide Styrofoam; and					
8.Exemption of pre-pack foods.	3.85	0.98	High		Awareness
Mean	4.00	0.07	High		Awareness
9.Plastic straws; Article 7 of Ordinance No. 962	4.40	0.75	Very	H	Awareness
10.Plastic stirrers; and e	4.35	0.81	Very	H	Awareness
11.Plastic utensils.	4.10	1.16	High		Awareness
Mean	4.28	0.22	Ver	H	Awareness
Bring your own 'Bring your bag program	4.30	0.97	Very	H	Awareness
Mean	4.30	0.97	Very	H	Awareness
Overall Mean	4.19	0.17	High		Awareness

Legend:

Table 4 presents the level of awareness of establishment vendors Ordinance No. 962 of Malaybalay City. The results found out that establishment vendors has high awareness. This means that the customers were highly aware on plastic and polystyrene regulation. It consisted with the regulation on the use of plastic bag, polystyrene, Article 7 of Ordinance 962, and adoption of the mandate on "bring your own bag" program. The credibility and effectiveness of the city ordinance will be enhanced by the compliance of establishment vendors with the plastic and polystyrene regulation. This will address a number of issues such as the regulation of plastic bags and is now helping to shift consumers behavior towards a more environmentally conscious attitude. Additionally, this will directly benefit the local communities and contributes to the city's objective of becoming a clean, green, and sustainable city for all. In the global fight against plastic pollution, establishments are crucial. Waste production decreased according to the number of plastics produced. According to Global Alliance for Incinerator Alternatives report GAIA (2019) stated that if only manufacturers were mandated at the national level to reduce production of throwaway plastic packaging, for example through innovations such as alternative delivery systems or reusable packaging, this would address a large part of the countries plastic waste problem, including plastic waste leakage to rivers and seas.

The adoption of the establishments on the mandate on "bring your own bag" program reveals that it is very high

awareness, this means that business establishments vendors were very high aware on the ordinance 962. This implies that the implementation of 'bring your own bag program' is effective and followed by the business establishments and customers.

Implementing Rules and Regulations of Ordinance No. SP2868, S-2019 in Quezon City that all establishments using plastic and paper bags in their business transactions should display conspicuously in their stores, especially in the transaction counter, the environment friendly notice. Vendors in establishments should encourage customers to bring their own bags when they shop. Costs will drop, at the same time the environment may be preserved. The lowest mean of the level of awareness of other establishments vendors on Ordinance No. 962 of Malaybalay City in terms of use of polystyrene was high awareness. This implies that other establishments vendors are aware in selling and distribution of plastics and polystyrene that is prohibited in Article 7 of Use of polystyrene.

This conforms with the findings of the study published by researchers at Woods Hole Oceanographic Institution WHOI (2019). Stated that Polystyrene is one of the world's most widespread plastics, it may degrade in decades and possibly up to centuries when it's exposed to sunlight, it is longer than we thought. Polystyrene is detected around the world's ocean since the 1970s. Most people say that sunlight could degrade plastics and polystyrene, it can be seen in playground toys, park, and benches. The WHOI study shows that sunlight doesn't just cause it to physically break down but also causes them to degrade. When polystyrene is being used, it contributes to easier life of people and it's the perfect solution for any problem but it also has disadvantages since it is not easy to dispose and may turns to environmental problem if it is mismanaged.

Table 5 Level of Awareness of Customers on Ordinance No. 962 of Malaybalay City

General regulations	Specific regulations	Mean	SD	Description
Use of Plastic Bags	Use of plastic bags in wet goods;	4.23	1.02	Very High Awareness
	Use of plastic bags in dry goods;	4.10	0.93	High Awareness
	Mean	4.16	0.98	High Awareness
Use of Polystyrene	no business owner shall sell Styrofoam or expanded polystyrene foam; and Private and Public Institutions shall not utilize or provide Styrofoam;	3.58	0.88	High Awareness
		3.83	0.88	High Awareness
	Mean	3.70	0.98	High Awareness
Article 7 of Ordinance No. 962	Plastic stirrers;	4.03	0.92	High Awareness
	Plastic utensils; and	4.15	0.81	High Awareness
	Mean	4.22	0.63	Very High Awareness
Bring your own bag program	Awareness of the “bring your own bag” program	4.54	0.63	Very High Awareness
		4.54	0.63	Very High Awareness
	Mean	4.54	0.63	Very High Awareness
Overall Mean		4.16	0.84	High Awareness

Legend:

1.00 – 1.80	Very Low Awareness
1.81 – 2.60	Low Awareness
2.61 – 3.40	Fair Awareness
3.41 – 4.20	High Awareness
4.21 – 5.00	Very High Awareness

Table 5 presents the level of awareness of customers on Ordinance No. 962 of Malaybalay City. The results found out that customers have high awareness. This means that the customers were highly aware. It consisted with the regulation on the use of plastic bag, polystyrene, Article 7 of Ordinance 962, and adoption of the mandate on “bring

your own bag” program. This denotes that the participation of individuals in the city ordinance is important in conserving the nature, maintaining community clean and green and reduce its negative effects to human health. It will lessen waste problems if individuals are willing to take their responsibility in following the ordinance regularly and reducing the production of plastic and polystyrene. Waste management ordinances would be strengthened with the help of effective engagement of community members.

Adviento (2014) asserts that the Philippines has experienced the advantages of using plastic over time. The nation's usage of plastic utilized mostly for packaging reasons. In commercial settings such groceries, marketplaces, pharmacies, quick service restaurants, and wet markets. Regardless of whether they were thick or thin, these plastic bags were provided to clients who make purchases of items. Humans are Enjoying the present benefit of using plastics without thinking about its future benefit to the environment.

Table 6. Results of Challenges encountered by the Market vendors, other Establishments Vendors and the Customers on Article 7 Plastic and Polystyrene Regulation on City Ordinance No. 962

Consolidated Participant's Responses	Frequency	Percentage	Common Intervention
Difficult to use paper bag	10	14.28%	<ul style="list-style-type: none"> Bring your own eco bag Discipline the self Follow the rules
Forgot to bring eco bag sometimes	7	10%	<ul style="list-style-type: none"> Monitor every store Practice Self discipline Self-awareness
Additional expenses	4	5.7%	<ul style="list-style-type: none"> Penalties
Difficult to adjust as a customer	6	8.57%	<ul style="list-style-type: none"> Prefer to bring eco bag Follow the policy

There is no proper information dissemination about the said ordinance.	15	21.42%	<ul style="list-style-type: none"> • Signage • Internet information • Conduct seminar in every Barangay • Clear instructions given to each establishment • Imposing fines
Not bringing own eco bag	4	5.71%	<ul style="list-style-type: none"> • Follow the rule • Display signage
Vendors are still using plastic	6	8.57%	<ul style="list-style-type: none"> • Public awareness campaigns • Banning vendors or paying for fines
Difficult to adjust as a Vendor	11	15.71%	<input type="checkbox"/> No more selling and distributions of cellophanes

Table 6 shows the challenges encountered by the Market vendors, other Establishments Vendors, and the Customers on Article 7 Plastic and Polystyrene Regulation on City Ordinance No. 962. The results found out that the customers and the vendors are encountered challenges based on their response on the open-ended questionnaire. Many customers and vendors have different response on the interventions that they propose to improve their awareness of the Plastic and

Polystyrene Regulation of the City Ordinance No. 962 Article 7 in Malaybalay City. This conveys that the Local Government Unit of Malaybalay should addressed the challenges encountered by the customer and vendors in making human intervention and do some effective way like Platforms such as signage and internet information to properly spread the said awareness on the regulation in finding the solution so that it could help to improve the implementation of the said policy.

The challenges encountered by market vendors, establishments vendors, and customers on plastic and polystyrene regulation deals with the effects on following the said ordinance. According to the data gathered from the participants, the responses are difficult to adjust, additional expenses, forgot to bring eco bag, difficult to use paper bag as an alternative, and some vendors still using plastics. With this, the researchers create strategic method or proposed intervention that could possibly enhance the awareness of individuals and strict

prohibition on using plastics and polystyrene. It also strengthens the enforcement on the mandate of City Ordinance No. 96. The challenges serve as lesson and learnings to discipline one self, above all participation and cooperation is the most important so that the implementation effectively and successfully regulate. Environmental knowledge takes into account people's level of environmental awareness, relationships with diverse ecosystem components, and a desire to prevent environmental damage in the years to come. Kumar (2012) emphasized the importance of a consumer's environmental awareness when choosing products that are environmentally sustainable, such as the eco-friendly bags used in this study. The knowledge of consumers greatly influences how they think and behave in an ecologically responsible manner. In this instance, information dissemination regarding plastic and polystyrene regulation enhances and improves individuals' awareness and compliance.

Table 7 Intervention Plan in Awareness of Market vendors on Article 7 Plastic and Polystyrene Regulation

Goal s	Activit y	Output Indicatio ns	Target	Time frame	Resp on din g	Offic e\ Perso n Resp on sible	Rea mrk s
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Pre-Implementation Stage							
To infor m	Daily remind er through announ cements	Reduc e the use of plastic and polyst yrene	Comm u nity of Malyb al ay City establis hments especia lly in Barang a y 9	June 2023		CEE D MO, LGU and Barn g ay Offic ia ls	
During Implementation Stage							

CEE D MO leads on follo w - up	Checki ng or consult every establis h ments	Some establi s hments shall be aware	Comm u nity of Malyb al ay City establi s hments especi all y in Barang a y 9	JulyAug us t 2023		CEE D MO and Bara n gay offici al s	
Post-Implementation Stage							
Stric tl y impl e ment the regul ation	Monito r every establis h ments	Minim iz e the use of plastic and polyst yr ene	Comm u nity of Malyb al ay City establi s hments especi all y in	Septe mberDe ce mber 2023		LGU and CEE D MO	

Table 7 explains that the market vendors and costumer should be compliant to the regulation by having a willingness to follow and comply all the provisions regarding on the regulation, they should response immediately so that all the concerns must be addressed to proposed solutions. This elucidates that the city of Malaybalay should give knowledge and information to the market vendors and costumer on what to do with the help of the intervention.

Earth Policy Institute (2014) stated that campaigns on plastic bag is worldwide. It shows that improper waste management of plastics has several effects to the environment, to people, both land and ocean based. Through improper handling of plastic and polystyrene waste, mass production of disposable materials like plastic and polystyrene cause pollution or damage in various parts of the world.

This means that the residents should implement the suggested intervention plan for the improvement of their awareness. This would help to influence themselves regarding on the regulation awareness and guide them in everything that they do. This implies that the establishments should completely implement the suggested interventions because doing so will enable them to engage more locals in their efforts and will also enable them to consume less plastic and polystyrene. This means that in order to benefit everyone and maintain a healthy environment, the City Economic Enterprises Development

Management Office (CEEDMO) should embrace the proposed actions as well.

Collaboration of government and individuals is what the world needs right now, encourage people to save our environment, restore our home, our source of life so we can build a sustainable world for everyone. The environment is one of the biggest phenomena that needs special consideration. Humans play a key role in attempts to protect the environment and have a responsibility to enhance environmental richness to ensure the survival of the ecosystem (Siahaan, 2007).

CONCLUSION AND RECOMMENDATION

On the bases of the findings, the following conclusion were drawn from the study. The market vendors, establishments vendors, and customers in Malaybalay City are in high level of awareness in City Ordinance No. 962 Article 7 regarding on plastic and polystyrene regulation. They are in level of high awareness.

In the implementation of City Ordinance in Malaybalay, the market vendors, other establishments vendors, and customers have encountered challenges regarding with the awareness of Article 7 Plastic and Polystyrene Regulation on City Ordinance No. 962. The intervention plan is proposed to improve the awareness of market vendors, other establishments vendors, and customers. Intervention plan also address the challenges that they encountered on plastic and polystyrene regulation that offered solutions for the full implementation and awareness regarding to Article 7 Plastic and Polystyrene Regulation.

In view of the findings the following recommendations are given. The City of Malaybalay, CEEDMO, and LGU in Malaybalay should take an action for strong implementation of City Ordinance for the improvement on the implementation of the City Ordinance No. 962. Human intervention would be the most effective way by providing proper dissemination of information and platforms or signage that beneficial in heightening market vendors, other establishments vendors, and customers awareness. Conducting regular education or training in prohibiting the use of plastics and polystyrene to fully adopt the proposed interventions of the researchers that could help the market vendors, other establishments vendors, and customers in Malaybalay City and maintain healthy environment and also enforce penalties to ensure public health safety and sustainability of City Ordinance.

For the Awareness of Market vendors on Article 7 Plastic and Polystyrene Regulation in Malaybalay City, it is recommended that the local government unit with partnership of City Economic Enterprises Development and Management Office (CEEDMO) will provide necessary resources and guidelines, continuous monitoring and evaluation that enables the market vendors, establishments vendors, and customers to adopt and apply

the regulation in the use of plastic bags, regulation in the use of polystyrene. Article 7 of ordinance No. 962, and adoption of the residents on the mandate on “Bring your own bag” program.

For the future researchers, they should adopt the research study for the improvement and progress on Article 7 Plastic and Polystyrene Regulation City Ordinance No. 962 so that the market vendors, other establishments vendors, and customers could maintain their compliance in a long run.

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