

## The Environmental Responsibilities of Food Service Establishments in Nabua, Philippines

<sup>1</sup>Maria Joy I. Idian, <sup>1</sup>Louraine T. Florendo, <sup>1</sup>Princess Mae Ll. Tagum,

<sup>1</sup>Godwin Kim Z. Zamudio

Corresponding Author: \*[lourdesiglesia21039@gmail.com](mailto:lourdesiglesia21039@gmail.com)

<sup>1</sup> Camarines Sur Polytechnic Colleges, Philippines

### ARTICLE INFO

### ABSTRACT

#### Article history

Received 26 August 2022

Revised 01 September 2022

Accepted 04 September 2022

Food service industry needs to observe and adopt existing and new environmental practices that are beneficial for the environment preservation and the conservation of natural resources on which they hugely depend to operate. With this, the purpose of this thesis is to assess the responsiveness of food service establishments specifically the local eateries or cafeterias in Nabua, Camarines Sur towards their environmental responsibilities. The study covers the demographic profile of the respondents and the business profile, the rate of environmental practices being observed by the establishments along: energy efficiency and conservation, water efficiency and conservation, recycling and composting, pollution prevention, and food packaging. These were the problems being encountered in observing these practices and the recommendations which are formulated based on the findings. At this moment in time, the food service industry has tended to be slower to adopt environmental practices than other segments of the hospitality industry, however, are currently following suit and are adopting practices that are beneficial for the environment and reduce the negative impacts. To collect data and information, descriptive method was used, and survey and informal interview were conducted. The respondents are the business owners and employees of eighteen selected food service establishments. The result showed that these establishments are highly observing environmental practices on the areas of pollution prevention, recycling and composting in observance with the existing ordinances. However, some of the practices in energy efficiency and conservation, water efficiency and conservation, and food

packaging still must be recognized and improved. Also, it was revealed that financial capacity is a big factor in observing such environmental practices. Nevertheless, with more information education campaign programs and activities implemented by the municipality and other concerned government agencies, food service operators will further deepen their understanding and intensify commitment to environmental initiatives within business.

### Keywords

environmental responsibility  
food service  
Philippines

This is an open-access article under the [CC-BY-SA](#) license.



### Introduction

The hospitality industry where food service businesses are included aims to be more responsible and sensitive to environment these days [1]. Various businesses are showing great commitment to practices which minimizes energy and water consumption, the solid wastes generated and the sources of pollution and adopt the 3R's or the reuse, reduce, and recycle [2] [3]. Over the past decade, businesses from across all sectors specifically in the food service have realized the importance of implementing these practices in daily operations [4].

In the Philippines, the Local Government Units, under Section 3(i) of R.A. 7160 are mandated to implement and enforce rules and regulations in maintaining an ecological balance within their respective jurisdictions. This includes observing the provisions of R.A. 9003 or the Ecological Solid Waste Management Act of 2000 which ensures the proper collection, segregation, handling, and disposal of solid wastes of entities like food service establishments. In response to these laws, the City of Iriga has also enacted the Ordinance No. 12 Series of 2012 which prohibits business establishments and individuals to use plastic bags and styrofoam or styropor in packaging goods and other products within its jurisdiction.

In full support and compliance to these rules and regulations, food service establishments in some parts of the country were found to actively practice waste management activities [5]. Aside from that, some food businesses often practice energy and water conservation activities and observe small portions of food supplies to lessen food waste [3]. While some of the business owners and managers are also motivated to adopt environmentally friendly marketing strategies like the use of paper boxes in take-out orders and the minimal use of straws and plastic cups because it allows them to gain more competitive advantage [6].

As more environmental practices are found to be beneficial both to business and the community and driven by the Ordinance No. 072 Series of 2016 known as the Environmental

Management Code of the Municipality of Nabua, food service establishments in Nabua are expected to be more responsible and motivated. However, with all the proven positive outcomes the food service industry was observed to be slower to adopt these practices than other segments of the hospitality industry [7]. Aside from the daily pressure of going back to business from the lockdowns, small food services like the eateries and cafeterias don't seem to have much focus on being environment friendly. Hence, a study entitled *The Environmental Responsibilities of Food Service Establishments in Nabua, Camarines Sur* will be conducted.

In line with the above notions the researchers aim to assess the responsiveness of food service establishments towards practices within business which are considered a part of their environmental responsibilities; assess the problems encountered in observing these practices; and propose a recommendation based on the findings. With the data gathered, researchers will be able to identify the environmental responsibilities highly observed and those that still must be improved in the daily operations of food services. At the same time, the study will be essential in intensifying the knowledge of the concerned institutions, business owners, hospitality employees, the researchers and future researchers on the reasons why environmental responsibilities are not fully observed by food service businesses and by that be able formulate strategies that would help them change the approach to business.

### **Objectives of the Study**

The main objective of this study is to assess the responsiveness of food service establishments in Nabua, Camarines Sur towards their environmental responsibilities. It specifically intends to determine the demographic profile of the respondents as business owners and employees and the business profile; assess the environmental practices being observed by the food service establishments along the areas of energy efficiency and conservation, water efficiency and conservation, recycling and composting, pollution prevention, and food packaging and; assess the problems being encountered in observing these practices. Lastly, to develop and propose an information education campaign material to improve the environmental management of the food service establishments specifically the local eateries/cafeterias in Nabua.

### **Methods**

The researchers used descriptive method to assess the responsiveness of selected food service establishments in Nabua, Camarines Sur towards practices which are considered a part of their environmental responsibilities and the problems encountered in observing these practices. This research study had a total of 36 respondents on which 18 were business owners and the other 18 were employees. The researchers determined the sample size through a convenience sampling method based from a set of criteria which includes that the

establishment must be: a local eatery/cafeteria which serves snacks, breakfast, lunch and dinner, operating business for at least one year, consists of two or more employees, and can cater more than twenty (20) customers daily. The researchers constructed a descriptive survey which is guided by the related literatures and studies and the environmental guidelines of Green Restaurant Association (GRA). The instrument was initially validated by the adviser, panel and research experts within the school and a dry run was also conducted to improve the quality of the instrument. A permission to conduct study from the Office of the Municipal Mayor of Nabua was also secured and presented to the selected food service establishments. The questionnaires were personally distributed to the identified respondents wherein the researchers also explained the purpose of the study and the confidentiality of the information gathered. Various statistical tools such as weighted mean and percentage technique was used to analyze and interpret data.

**Result and Discussion**

Below are the tables of results based from the data gathering and its discussion. As shown, out of 18 owners, 13 or 72.2 percent are female and 5 or 27.7 percent are male. While with the employees, 15 out of 18 or 83.3 percent are female and 3 or 16.6 percent are male. The result shows that among the owners, majority are female and this is the same with the employees.

This implies that more women are involved in the food service since they possess certain characteristics that enable them to work competently either as owner or employee. Women nowadays are almost in every sector and most importantly doing well. The workplaces which were male-dominated once now do not exist, with women entering in such business. This might be the result of gender equality or the willingness and confidence of female employees [8]. See Table1.

**Table 1.** Gender Distribution of Owners & Employees

Gender	Owners		Employees	
	Freq.	%	Freq.	%
M	5	27.7	3	16.6
F	13	72.2	15	83.3
<b>Total</b>	<b>18</b>	<b>100</b>	<b>18</b>	<b>100</b>

Table 2 represents the frequency distribution of owners and employees according to age. The result indicates that most or the 44.4 percent of the food service owners are from 35-44 years old and 33.3 percent of the employees are from 45-54 years old. It shows that business owners are mostly younger in age than the employees. The social impact is one of the

main reasons why entrepreneurship is attractive to young people [9]. Also, by hiring qualified older workers, employers gain a force in the labor market that has yet to be shaken, despite myths about aging in the workforce [10].

It can be implied that young business owners or entrepreneurs are not only motivated by the return of investment but also by the opportunity to provide something to the community. And just like these young business individuals who are striving to become productive, older employees use their time and energy to share their knowledge, values and experiences in work.

**Table 2.** Age Distribution of Owners and Employees

Age	Owners		Employees	
	Freq.	%	Freq.	%
18-24	0	0	4	22.2
25-34	1	5.5	3	16.6
35-44	8	44.4	4	22.2
45-54	2	11.1	6	33.3
55 and above	7	38.8	1	5.5
<b>Total</b>	<b>18</b>	<b>100</b>	<b>18</b>	<b>100</b>

It is illustrated from Table 3 that business owners and employees have different level of education attained or completed. Most or the 72.2 percent of the business owners attained college degree while the rest were college undergraduates and high school graduates. As to the educational background of the employees, most or 38.8 percent are high school graduates while the others have attained different levels of education from elementary to college and some also attended technical and vocational programs. This shows that business owners have higher level of education than the employees.

The higher the level of education attained by the owner/manager, the higher the likelihood of growth is [11]. This implies that business owners with college degrees have broader understanding and capabilities to run and improve operations. Environment on which business is being operated will also be a concern that will keep balance to the business goals and other social responsibilities. Through the supervision of business owners, employees will follow practices that are deemed to be important and through time, gaining experience in the industry will allow more improvements.

Result shows that out of 18 food service establishments, 17 or 94.4 percent are in rural barangays or within the Poblacion area and 1 or 5.5 percent is located in a barangay outside the Poblacion Area. Most of the establishments are operating in urban barangays where population is high and business opportunities are great. Moreover, only 1 establishment is operating outside the Poblacion Area which is also advantageous because there is less competition.

**Table 3.** Educational Attainment of Owners and Employees

Educational Attainment	Owners		Employees	
	Freq.	%	Freq.	%
Elementary Undergraduate	0	0	0	0
Elementary Graduate	0	0	1	5.5
High School Undergraduate	0	0	1	5.5
High School Graduate	3	16.6	7	38.8
Vocational Education	0	0	2	11.1
College Undergraduate	2	11.1	5	27.7
College Graduate	13	72.2	2	11.1
<b>Total</b>	<b>18</b>	<b>100</b>	<b>18</b>	<b>100</b>

Finding the right location means understanding the right qualities to look for in a potential space [12]. With this, it can be implied that most of the food service establishments chose a strategic location where they could offer their food services effectively. Having this type of business around the Poblacion area allows good exposure to target customers and the smooth flow of daily operations. With the ease of access to market, it will be more convenient to get all the raw materials and other necessities. However, with this positioning, the not-so-good part would be the presence of a lot of competitors.

Most of the establishments have been operating food service business for more than a decade with 6 responses. Others whose operating from 3-4 and 5-6 years have a total of 10 responses while the rest are new in the industry. This indicates that food business is really in demand, and it continuously grows with the increasing population and the changing needs and wants of the people.

Longevity has a constantly evolving definition. A business could be created just to fill a need, for personal reasons such as to support a family, to fill a need in the market that isn't being met, or it could just be a passion project - to start a business that makes the world a better place [13]. This implies that many of food service establishments have been operating for a long period of time for the reason it has become an essential part of the community where most of the busy working individuals, students and others rely on to eat. Aside from the profit or income gained, the business operators are determined to stay in business because their employees depend on them to support their family's needs. Most of all, this type of business which have existed for many years were a product of passion to continually serve people. See Table 4. Employees or workers play an essential role in the success of the business. From the table below, it is illustrated that most or 55.5 percent of the establishments have fewer workforce and only 5.5 percent hired a greater number of workers.

When the pandemic happened, restaurants sales declines have forced operators to cut staffing levels [14]. The implication of the limited number of workers in the food service

establishments is that the nature of business does have fewer workforce needed. However, during these times of pandemic and lockdowns, more businesses were forced to cut most of their workers because of the limited work available and the low income compared from before. Until the confidence of eating out is not yet regained, schools remained close for face-to-face classes and regular pattern of work doesn't get better, then businesses will always be affected. See Table 5.

**Table 4.** Length of Years in Business Operation

<b>Length of Business Operation</b>	<b>Freq.</b>	<b>%</b>
2 years and below	1	5.5
3 - 4 years	5	27.7
5 - 6 years	5	27.7
7 - 8 years	1	5.5
9 - 10 years	0	0
11 years and above	6	33.3
<b>Total</b>	<b>18</b>	<b>100</b>

**Table 5.** Number of Employees

<b>Number of Employees</b>	<b>Freq.</b>	<b>%</b>
3 and below	10	55.5
04-Jun	7	38.8
07-Sep	0	0
10-Dec	0	0
15 and above	1	5.5
<b>Total</b>	<b>18</b>	<b>100</b>

Results indicated that the highest ranking on the average number of customers catered is from 100 and above with 33.3 percent while the lowest in ranking is from 70-80 customers with 5.5 percent. People who are in a hurry and have no time preparing food for the day would most likely buy at karinderyas [15].

It can be implied that the number of customers of food service establishments remains high but lower compared from the operations before. After the pandemic, many business entities were affected but it doesn't stop the food services from preparing meals for those people who rely on them. With the huge number lost from the day-to-day operation, the motivation is to at least feed the hungry, cope with changes and survive. See Table 6.

**Table 6.** Average Number of Customers

<b>Average Number of Customers</b>	<b>Freq.</b>	<b>%</b>
Oct-20	4	22.2
30 - 40	2	11.1
50 - 60	5	27.7
70 - 80	1	5.5
90 - 100	0	0
100 customers above	6	33.3
<b>Total</b>	<b>18</b>	<b>100</b>

Illustrated below are the working hours of the food service establishments. Most of the establishments observe 8-9 operating hours with 33.3 percent and few operates from 6-7 hours with 16.6 percent. In general, some preferred to operate food service in a half day or shorter period while most remained on the busy pace and lengthy working hours of preparing and serving food to the public.

Creating a longer day or a longer workweek for employees must have solid justification based on business need or a need to improve working conditions for staff. Extending work hours could mean increased business demand, lack of staff, flexible scheduling opportunities and seasonal schedule fluctuations [15]. This implies that this type of business requires long working hours which is from eight (8) hours and above. The long working hours also means that the demand on business is still good even though there are lower number of customers compared from before.

**Table 7. Working Hours**

<b>Working Hours</b>	<b>Freq.</b>	<b>%</b>
04-May	0	0
06-Jul	3	16.6
08-Sep	6	33.3
10-Nov	4	22.2
12 hours above	5	27.7
<b>Total</b>	<b>18</b>	<b>100</b>

The assessment on energy efficiency and conservation gained an average weighted mean of 4.0 from the response of owners and a total of 3.7 from the response of employees which means that practices under this area are being implemented and observed within the food business yet still must be improved. Result shows that shutting down or turning-off of computers, appliances, and lights when not in use and monitoring of energy (electricity & gas) bills were the most practiced ways of minimizing energy consumption.

Moreover, many food service professionals have been adopting energy conservation methods for the past decade and have drastically cut their energy use and expenses. With the daily business operation of food service establishments, it is imperative for business owners to look for ways to at least reduce consumption and encourage everyone to participate since it will be beneficial both for the business and the environment.

In terms of water efficiency and conservation, the assessment of the owners and employees show an average weighted mean of 4.0 and 3.8, respectively which signifies that food service establishments are taking the initiative to reduce water usage in daily business operation. Regularly monitoring and preventing leaks, spikes, or other potential problems, monitoring of water bills, and only serving water to customers upon request were the most



observed practice while posting of signs that encourage water conservation in kitchens and bathrooms was rated as least.

**Table 8.** Energy Efficiency and Conservation

No	Indicators	Owners		Employees	
		WM	I	WM	I
1.	Monitor energy (electricity & gas) bills	4.8	SA	4.4	SA
2.	Shutdown or turn-off computers, appliances, and lights at the end of the day or when not in use	4.9	SA	4.6	SA
3.	Use of energy-efficient electricity and gas equipment (refrigerators, air-conditioning, fryers, etc.)	3.2	MA	3.3	MA
4.	Use of longer lasting CFL (Compact Fluorescent Lamp) light bulbs or LED	3.5	A	3.2	MA
5.	Encourage guests and employees to follow energy-saving practices	3.6	A	3.2	MA
<b>Average Weighted Mean</b>		<b>4.0</b>	<b>A</b>	<b>3.7</b>	<b>A</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

Water conservation methods are becoming more prevalent as different sectors, such as the food and beverage industry, realize how important it is not only as a social responsibility and to the environment, but also to their operating costs. It can be implied that food service establishments in Nabua which observes water efficiency and conservation practices, understands the need to become a more responsible business. For small businesses, it means reducing bills and other additional expenses.

**Table 9.** Water Efficiency and Conservation

No.	Indicators	Owners		Employees	
		WM	I	WM	I
1	Monitor water bills	4.8	SA	4.4	SA
2.	Regularly monitor and prevent leaks, spikes or other potential problems	4.6	SA	4.6	SA
3.	Only serve water to customers upon request	4.3	SA	4.3	SA
4.	Use of urinals and toilets which are low-flow or use less water for flush	3.6	A	3.3	MA
5.	Post signs that encourage water conservation in kitchens and bathrooms.	2.9	MA	2.4	D
<b>Average Weighted Mean</b>		<b>4.0</b>	<b>A</b>	<b>3.8</b>	<b>A</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

On the recycling and composting practices, response from owners present an average weighted mean of 4.4 and a total of 4.2 from the response of employees which indicates that they are responsible enough in handling wastes and are taking all the possible measures to minimize negative impact on the environment. Segregation of waste products and the

provision of recycling and composting bins in the establishment for daily business operation and for consumer use are highly observed.

Counter service restaurants like Jollibee and Chowking take responsibility in waste management very seriously, in full support and compliance to the Ecological Solid Waste Management Act [6]. The practice of waste management is also already in place among fast food chains in Ozamiz City [16].

The implication on the recycling and composting is that food service establishments are more responsive with this practice especially driven by the environmental laws and regulations. As one of the largest waste generators, the food service businesses are held accountable of managing and disposing their own wastes. Also, the food businesses are mostly observing waste segregation as part of the day-to-day operation. Awareness of both managers and employees on the importance of properly handling wastes is also key to right implementation.

**Table 10.** Recycling and Composting

No.	Indicators	Owners		Employees	
		WM	I	WM	I
1.	Provide recycling and composting bins for daily business operation of the establishment	4.5	SA	4.4	SA
2.	Provide recycling and composting bins in establishment for consumer use	4.6	SA	4.4	SA
3.	Recycle paper, plastic, cardboard, glass, and aluminum at the back of the house	4.1	A	3.9	A
4.	Organic waste is reused or composted	4.2	SA	3.9	A
5.	Segregation of waste products	4.7	SA	4.4	SA
<b>Average Weighted Mean</b>		<b>4.4</b>	<b>SA</b>	<b>4.2</b>	<b>SA</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

Assessment on the pollution prevention practices gained an average weighted mean of 4.6 both from the response of owners and employees. The use of cloth towels and sponge, regularly cleaning of grease trap or interceptor, limited use of disposable menu boards and tarpaulins, the use of washable utensils and dishes, and limited use of disposable items in serving food are the most evident practices observed in the food service establishments.

In an effort to alleviate some financial burdens on Los Angeles restaurants and reduce plastic waste, the City Council unanimously approved an ordinance to make disposable items such as utensils and napkins available at restaurants only when requested by customers [17]. This implies that it's possible for food service establishments to observe pollution prevention within business. Reducing the sources of wastes through limiting of disposable materials or

supplies is a big step to achieving a clean operation. Communicating it to employees and customers will also create more sense of what the business is trying to do for the environment.

**Table 11.** Pollution Prevention

No.	Indicators	Owners		Employees	
		WM	I	WM	I
1.	Use of washable utensils and dishes and limit use of reusable items in serving food	4.7	SA	4.9	SA
2.	Limit usage of disposable menu boards and tarpaulins	4.8	SA	4.9	SA
3.	Use of cloth towels and sponges in kitchens rather than paper towels	4.9	SA	4.9	SA
4.	No bottled water served onsite	3.4	A	3.2	MA
5.	Regularly clean grease trap or interceptor	4.9	SA	4.9	SA
<b>Average Weighted Mean</b>		<b>4.6</b>	<b>SA</b>	<b>4.6</b>	<b>SA</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

In terms of food packaging practices, assessment of the owners and employees both gained an average weighted mean of 3.4 which means that food service as a business is dependent on supplies and packaging materials which are made of plastics and styrofoam and eliminating these completely would not be easy. Based on the illustration, there are certain ways the establishments do to improve their packaging practices. These includes minimizing the use of plastics for food packaging or when storing food products inside the refrigerator, buying products in returnable, reusable, or recyclable containers, and not using of styrofoam cups and to-go containers.

It is not possible to eliminate the use of non-biodegradable or plastic food packaging completely. Non-recyclable plastic packaging is often used to pack meat and meat-based products which ultimately leads to pollution. However, reducing the amount of food packaging waste that are thrown out in the trash every day is certainly achievable [18]. It can be implied that food service establishments will find it challenging to remove plastics especially when its more convenient to use for raw materials and cheaper compared with paper made packaging containers which are considered as additional cost for food service operators.

Overall, the most observed environmental practices by the food service establishments in Nabua, Camarines Sur were along the areas of pollution prevention and recycling and composting. The most common practices under recycling and composting are the provision of recycling and composting bins for consumer use and for daily business operation of the establishment and the segregation of waste products. While the most common practices on the area of pollution prevention are the use of cloth towels and sponges in kitchens rather than paper towels, limit usage of disposable menu boards and tarpaulins and regularly clean grease trap or interceptor.

**Table 12.** Food Packaging

No.	Indicators	Owners		Employees	
		WM	I	WM	I
1.	Minimizes the use of plastics for food packaging or when storing food products inside the refrigerator	3.9	A	3.9	A
2.	Not using Styrofoam cups and to-go containers	3.4	A	3.7	A
3.	Use of environmentally friendly take-out containers and boxes (biodegradable or recyclable)	2.9	MA	2.8	MA
4.	Buy products in returnable, reusable or recyclable containers	3.6	A	3.7	A
5.	Use less non-biodegradable supplies for takeaways	3.2	MA	3.1	MA
<b>Average Weighted Mean</b>		<b>3.4</b>	<b>A</b>	<b>3.4</b>	<b>A</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

This is followed by the practices on water efficiency and conservation, energy efficiency and conservation, and food packaging. Further improvements are needed to effectively achieve the goal of becoming an environmentally responsible business.

Over the last 10 years, more and more companies in the foodservice business have realized the importance of adopting the right tools, resources, and practices that would help to create increasingly sustainable products, reduce the usage of resources and improve recycling efficiency [4]. With this, it can be implied that food service establishments understand the need to observe environmental practices not only as a compliance to the existing ordinances but for the bigger purpose of saving the natural resources and environment. In this way, the business is also able to cater the needs of the community without compromising the future of the next generation.

**Table 13.** Summary Table of Environmental Responsibilities

No	Indicators	Owners		Employees	
		WM	I	WM	I
a.	Energy Efficiency and Conservation	4.0	A	3.7	A
b.	Water Efficiency and Conservation	4.0	A	3.8	A
c.	Recycling and Composting	4.4	SA	4.2	SA
d.	Pollution Prevention	4.6	SA	4.6	SA
e.	Product Packaging	3.4	A	3.4	A
<b>Average Weighted Mean</b>		<b>4.1</b>	<b>A</b>	<b>3.9</b>	<b>A</b>

Legend: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

Under the problems encountered, the owners' assessment gained an average weighted mean of 3.1 and a total of 3.2 from the employees' assessment which indicates that food service businesses find it hard to quickly change ways and fully adopt environmental practices as part of the daily operations. Result shows that the additional cost of implementing environmental

practices is identified to be the most common problem encountered by the food service establishments. While the knowledge of the managers and employees, low demand of customers, lack of government support including the weakly enforced environmental laws and regulations are slightly considered to be a problem.

With all the proven positive outcomes of environmental practices, restaurants find it challenging and still lack the willingness to incorporate more practices into daily business operations. There is a common misconception that restaurant sustainable practices cost more [7]. This implies that food service establishments in Nabua, Camarines Sur need to consider financial capacity as a big factor for the business especially during this pandemic where income was greatly affected. It is an additional cost, particularly the purchasing of environmentally friendly take-out containers and supplies and the provision of signages and reminders on utility usage.

**Table 14.** Problems Encountered

No.	Indicators	Owners		Employees	
		WM	I	WM	I
1.	Inadequate knowledge of the managers and employees with environmental practices and the benefits of its implementation	3.0	MA	3.1	MA
2.	Low demand of customers on environmentally friendly food establishments	3.1	MA	3.2	MA
3.	Additional cost of implementing environmental practices	3.8	A	3.8	A
4.	Lack of government support and weakly enforced environmental laws and regulations	2.9	MA	3.0	MA
5.	Time consuming ways of adapting existing and new environmental practices	2.8	MA	3.0	MA
<b>Average Weighted Mean</b>		<b>3.1</b>	<b>MA</b>	<b>3.2</b>	<b>MA</b>

Remark: WM - Weighted Mean; I - Interpretation; 4.20-5.00 - Strongly Agree (SA); 3.40-4.19 - Agree (A); 2.60-3.39 - Moderately Agree (MA); 1.80-2.59 - Disagree (D); 1.00-1.79 - Strongly Disagree (SD)

## Research Output

Based on the findings of the study, the researchers developed an information education campaign material to help improve the environmental management of the food service establishments specifically the local eateries/cafeterias in Nabua, Camarines Sur. This material is intended to primarily guide food business owners and employees on how to observe simple environmental efforts within the operations. This offers an overview of environmental practices along different areas and tips that are essential for a greener business management. It specifically includes energy efficiency and conservation, water efficiency and conservation, recycling and composting, pollution prevention, and food packaging ideas and tips that are easy to follow and applicable for both the business and customers. This will be printed and distributed to various food service establishments in Nabua specifically those who participated

in the study and also to the food stalls in the cafeteria of Camarines Sur Polytechnic Colleges (CSPC). Moreover, posters will also be reproduced in order to emphasize the advocacy of changing business approach to become environmentally responsible.

### **Conclusion and Recommendation**

The researchers conclude that food service establishments in Nabua, Camarines Sur are highly observing environmental responsibilities specifically on the areas of pollution prevention, recycling and composting. Guided by the existing ordinances, the establishments were able to properly manage, dispose and lessen the volume of wastes generated every day. However, further improvement and awareness on water efficiency and conservation, energy efficiency and conservation, and food packaging practices are needed. Moreover, assessment of the owners and employees indicate that the additional cost of implementing environmental practices is identified to be the most common problem encountered by the establishments. With this, it can be concluded that financial capacity is a big factor for the business to consider, particularly with purchasing environmentally friendly take-out containers and supplies and the provision of signages/reminders on utility usage which is really an additional cost. While the knowledge of the managers and employees, low demand of customers, lack of government support including the weakly enforced environmental laws and regulations are slightly considered to be a problem.

Overall, food service businesses find it hard to quickly change ways and fully adopt environmental practices as part of the daily operations. It is therefore vital for the business owners to first communicate with the employees the endeavors of the business and educate them how they could contribute. With regards to energy conservation, it is encouraged to take advantage of natural lighting to avoid unnecessary utility costs since most of the food service businesses are operating during the day and to change lightings to LED bulbs. In terms of water conservation, food service establishments are recommended to use heavy duty drums or big containers to store used water to be reused in flushing of toilet, washing and cleaning. With food packaging, the business should look for alternative containers that are biodegradable or reusable but at the same time environment friendly. And since it's pandemic, it can also be required for customers to bring their own containers when eating or having take-out orders which is safer, less in water consumption and is also a way of limiting the sources of pollution. Business owners are also encouraged to develop a monitoring and evaluation tool for the environmental practices of the business. The researchers also prepared an information education campaign material, specifically a pamphlet which could help the establishments in adopting simple environmental practices to improve operations and business performance.

Food service establishments are also encouraged to participate in information education campaigns regarding green business operations and seminars and trainings on the environmental ordinances of the local government of Nabua or other concerned agencies. Moreover, there are basic measures that businesses could apply in committing to environmental efforts which does not require expensive investments. These includes provision of properly labeled trash bins (which can also be recycled drums or other large containers) for different types of wastes produced before, during and after operation; tracking of energy and water consumption; and the practice of the reduce, reuse and recycle (3Rs). Owners and employees should also ask feedback from customers about the environmental initiatives of the business so it could still be improved.

### **Conflict of Interest**

All authors declare that there is no conflict of interest.

### **References**

- [1] A. Mohamed, M. Zohry, M. Mahmoud, and M. Elsaied, "Green practices in quick service restaurants in Egypt (Analytical Study)," *International Journal of Heritage, Tourism and Hospitality*, vol. 12, no. 3 (Special Issue), pp. 133–144, 2018.
- [2] S. Sumaylo, "Green Practices of Accommodation and Lodging Establishments in Siquijor Province, Philippines," *Journal of Educational and Human Resource Development (JEHRD)*, vol. 4, pp. 14–25, 2016.
- [3] J. C. B. Cuevas, M. A. INDICIO, A. F. Landrito, and E. C. Mandigma Jr, "Green Practices of Selected Restaurants in Solenad, Nuvali in Sta. Rosa Laguna, Philippines," *Ernesto C., Green Practices of Selected Restaurants in Solenad, Nuvali in Sta. Rosa Laguna, Philippines*, pp. 89–98, 2020.
- [4] W. Batat, "A phenomenological exploration into sustainability in the foodservice industry in the MEA region," *Journal of Services Marketing*, 2021.
- [5] B. T. Festijo and N. Yuzon, "Waste management practices among counter service restaurants in Batangas City, Philippines," *International Journal of Academic Research in Business and Social Sciences*, vol. 3, no. 8, p. 362, 2013.
- [6] R. Virola, "Green Marketing Strategies of Restaurants in Nueva Ecija, Philippines".
- [7] B. C. Tan, T. C. Lau, G. F. Yong, N. Khan, and T. P. L. Nguyen, "A qualitative study of green practices adoption for restaurants in Malaysia," *Social Responsibility Journal*, 2018.
- [8] D. Chandler, "What women bring to the exercise of leadership," *Journal of strategic leadership*, vol. 3, no. 2, pp. 1–12, 2011.
- [9] D. G. Blanchflower and A. Oswald, "What makes a young entrepreneur?," in *Handbook of youth and young adulthood*, Routledge, 2009, pp. 204–216.
- [10] Z. Gabriel and A. N. N. Bowling, "Quality of life from the perspectives of older people," *Ageing Soc*, vol. 24, no. 5, pp. 675–691, 2004.
- [11] A. Woldie, P. Leighton, and A. Adesua, "Factors influencing small and medium enterprises (SMEs): an exploratory study of owner/manager and firm characteristics," *Banks & bank systems*, no. 3, Iss. 3, pp. 5–13, 2008.
- [12] L. Coles, *Social media for business: foolproof tips to help you promote your business or your brand*. John Wiley & Sons, 2017.

- [13] C. Rossato and P. Castellani, "The contribution of digitalisation to business longevity from a competitiveness perspective," *The TQM Journal*, vol. 32, no. 4, pp. 617–645, 2020.
- [14] E. Ludlow, "One-quarter of American restaurants won't reopen, opentable says," *Bloomberg*. <https://www.bloomberg.com/news/articles/2020-05-14/one-quarter-of-american-restaurants-won-t-reopen-opentable-says>, 2020.
- [15] D. Matre *et al.*, "Safety incidents associated with extended working hours. A systematic review and meta-analysis," *Scand J Work Environ Health*, vol. 47, no. 6, p. 415, 2021.
- [16] A. M. Elmedulan Jr, M. M. Apat, and V. E. Matunog, "Waste Management of Fast Food Chains in Ozamiz City, Philippines," *Journal of Multidisciplinary Studies Vol, 3 (2)*, pp. 108–122, 2014.
- [17] Y.-F. Wang, S.-P. Chen, Y.-C. Lee, and C.-T. S. Tsai, "Developing green management standards for restaurants: An application of green supply chain management," *Int J Hosp Manag*, vol. 34, pp. 263–273, 2013.
- [18] K. Grönman *et al.*, "Framework for sustainable food packaging design," *Packaging Technology and Science*, vol. 26, no. 4, pp. 187–200, 2013.

## Authors



**Maria Joy I. Idian** has a doctoral degree in Business Administration and currently designated as the of Dean of College of Toursim, Hospitality and Business Management in Camarines Sur Polytechnic Colleges, Philippines. She has several research published and now working on funded research with Department of Agriculture, Philippines on the Market Assessment of Oyster Mushroom in her country. (email: [joyidian@cspc.edu.ph](mailto:joyidian@cspc.edu.ph)).



**Louraine T. Florendo** has just recently graduated the program Bachelor of Science in Hospitality Management from the Camarines Sur Polytechnic Colleges in Nabua Camarines Sur, Philippines. She is an active member of the college student organization where she practice her skills in cookery and housekeeping. (email: [Louraine.tflorendo@gmail.com](mailto:Louraine.tflorendo@gmail.com)).



**Princess Mae Ll. Tagum** is a cum laude graduate of the program Bachelor of Science in Hospitality Management from the Camarines Sur Polytechnic Colleges, Nabua, Philippines. She have trainings and seminars attended related to her field with willingness to engaged in more various researches. (email: [princess.llagas26@gmail.com](mailto:princess.llagas26@gmail.com)).



**Godwin Kim Z. Zamudio** is a newly graduate of the program Bachelor of Science in Hospitality Management. He is looking forward to work in a big company in the field of tourism and hospitality with the aim of helping his siblings on schooling. He is a serios young man of succeeding with his skills in hospitality management. (email: [krimzam@gmail.com](mailto:krimzam@gmail.com)).