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Implementation of Solid Water and Waste Water Management of Beach Resorts in Anda, Bohol, Philippines

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ABSTRACT

Resorts operation in developing economies has provided a visible contribution towards improving the economy through tourists' spending and countless social transformation. However, in any economic growth, environmental integrity has always been compromised by its future viability. This study aims to determine the extent of the implementation of solid waste and wastewater management and the contribution of the beach resort. The findings of this study served as a basis for devising an environment-friendly model for beach resorts. This investigation utilized the descriptive-correlational method of research with the use of researcher-designed survey tools. This study was conducted in Anda, Bohol. Using the purposive sampling technique, twenty respondents provided information on their demographic profile and the extent of solid waste and wastewater management implementation in the beach resorts. Frequency count and percentage, weighted mean, chi-square test of independence were computed. More respondents belonged to the 40 & above age range, and the majority were females, single, college graduates, and worked as general managers of the beach resorts. The solid waste management of waste minimization and waste reuse was moderately implemented, while wastewater management was highly implemented. Lastly, there is a significant relationship between the respondents' civil status and their perceptions on the extent of implementation of solid waste management as to waste reuse. The beach resorts in the rural location were fully compliant with the proper solid waste management since there are standard operating procedures that they need to perform to ensure customer satisfaction. They failed to ensure the reduction of waste thrown in the landfills. Several beach resorts' operations had provided the residents with jobs and different income sources paired with significant social benefits.

Keywords **—** Hospitality management; sustainable tourism; beach resort operations; descriptive-correlational research; Anda, Bohol, Philippines

INTRODUCTION

In Less Economically Developed Countries (LEDCs), the tourism industry is often driven by conventional mass tourism, constraining small firms' growth prospects and limiting the opportunities to reduce poverty that tourism could generate. Biggs and Shah (2003) suggest that tourism can help reduce poverty in LEDCs if there is a significant expansion of the indigenous small and medium-sized enterprise (SME) sector. In LEDCs, the collective bargaining power of SMEs to compete with large international tour operators and established ground-tour operators and access tourism markets to their advantage is a major challenge. Therefore, forming global network relationships and trade agreements so SMEs can commercialize their products/services through the international tourism supply chain is one strategic intervention that can reduce foreign currency leakage and contribute to poverty alleviation (Ashley & Haysom, 2006).

However, marketing directly to tourists in developed countries before arrival and during their stay at an LEDC destination is a challenge due to the lack of access to appropriate marketing channels. Overcoming this barrier is important for the development of SMEs in LEDC destinations so they can attract global demand directly. In an LEDC mass tourism context, large hotels, multinationals, and foreign investors mainly have access to the expertise and resources to develop these global networks and therefore dominate tourism destinations. The SME sector is notoriously ill-prepared for such expansion and requires considerable support from the government, non-governmental organizations (NGOs), and private sector ventures (Rogerson, 2005).

Innovation and entrepreneurship have helped develop the reputation and advancement of the international tourism industry, particularly through alternative tourism offers (e.g., eco-tourism and cultural tourism). Increasingly tourists are responding to and demanding the development of niche products and creative innovations that increase the quality of tourists' experiences and satisfaction while developing destinations and local communities. Among other benefits, local innovation and entrepreneurship help link tourism benefits into the local economy and encourage local enterprises to create more employment. However, the practice of entrepreneurship and innovation in tourism strongly differs between developed countries and LEDCs due to, among other reasons,

the lack of support to SMEs that is independent of government-led programs (Gurel et al., 2010).

Beaches Bohol Island has been closed by the Department of Environment and Natural Resources (DENR) from July 1 to 15, 2021, due to high coliform levels. This underscores the urgent need for the Bohol provincial and municipal governments to resume their infrastructure projects, including the construction of sewerage treatment plants, said a highly-placed government source. The closure of Alona Beach was announced by Panglao Municipal Tourism Officer Leonides E. Senica in a letter to stakeholders on June 30, 2021. However, he only attributed the beach closure "to the scheduled conduct of scientific study or personnel from the and the Environmental Management Bureau (EMB)." However, government and private-sector sources cited information from the Provincial Environment and Natural Resources of Bohol that analysis of water samples taken from the beach showed "high fecal coliform levels at 700-800 most probable number/100 milliliters." This far exceeds the fecal coliform standard of 100 mpn/100 ml. Coliform or e.coli bacteria are found in human feces. Bohol Gov. Arthur Yap has been promoting Bohol Island for tourism and undertaking steps to ensure guests feel safe by pushing for the vaccination of its tourism workers (Arnaldo, 2021).

Moreover, it is also claimed that with the rapid growth of tropical beach resorts, it is claimed that all tourism stakeholders should play a role in helping sustainability to be achieved. Prior studies posited that the ideal situation for achieving what is desired would be to get everyone to move in the same direction, and it can be done through the management of the organization via performance management. However, there are limited studies in the area of beach resorts. Thus, this study aims to explore how the management of a beach resort on the east coast of Anda, Bohol, Philippines manages its performance. The study explores the strategies used by this beach resort which has managed to sustain the business for the last 25 years.

Thus, this study aims to explore beach resort operations that assist beach resorts in sustaining themselves in the industry. Specifically, it seeks to examine the implementation and contribution to the management of beach resorts in Anda, Bohol, and how it can further assist beach resorts to continue flourishing and sustaining in the industry. This study aims to contribute to the existing literature relating to beach resorts. It also helps the resort owners/management understand the attributes of competitiveness in the industry and the means to sustain the industry during a downturn in the economy.

OBJECTIVES OF THE STUDY

This study aims to determine the extent of implementing solid waste and wastewater management of beach resorts in Anda, Bohol, Philippines, and C. Y. 2021. The findings of this study served as a basis for devising a sustainable beach tourism development and management model.

Specifically, this study sought answers to the profile of the respondents, the extent of implementation of solid waste and wastewater management in the beach resorts, and the significant relationship between the respondents' profile and their perceptions of the extent of implementation of solid waste and wastewater management of the beach resorts.

METHODOLOGY

This study was conducted in Anda, Bohol, situated on the island's eastern coast, roughly 110 kilometers or a three-hour ride from Tagbilaran City. 20 respondents from the beach resorts provided the data on how they manage the different kinds of waste out from the beach resort's operation. The questionnaires pertain to how the beach resorts manage the solid waste and wastewater produced by operations. This tool was answered by the general managers of the beach resorts. Moreover, the Cronbach's Alpha value of the questionnaires for the beach resort operators was 0.9404. The researchers secured permission from the Mayor's Office of the Municipality to administer the survey questionnaire among the beach resort managers. When permission was secured, the researchers personally administered a survey questionnaire to the target respondents.

For the ethical considerations, the researchers explained the purpose of the study to the intended respondents to be well-aware of the study's objectives before they were asked to participate. Once the respondents signified their permit to participate, they were asked to sign the Informed Consent document. However, it was also made clear that their initial permission cannot be withdrawn since their participation is fully voluntary. It is built upon volunteerism elements, which entails the capacity to make this choice freely and without coercion. Deliberateness, the purposefulness of intent, clarity, genuineness, and coherence with prior life decisions are implicitly emphasized in this construction. The participants were made aware of how the findings will be used. The dominant approach was used to protect the respondent's confidentiality. Under the dominant approach, if data cannot be collected anonymously, the researcher

collected, analyzed, and reported data without compromising the respondents' identities to observe every research participant's confidentiality. The researcher was fully aware of one's obligation not to harm the informants or expose people to unnecessary risks. The researcher assumed that every research undertaking involved some form of harm and considered how best to deal with it in advance. Finally, this study is only carried out if some benefit or good can be derived from it. Therefore, whether or not research is worth undertaking should always be uppermost in the researcher's mind.

The following statistical tools were used in the study: Frequency Count and Percentage were used to analyze and interpret the profile of the respondents; Weighted mean is used to analyze and interpret how the beach resorts manage different kinds of wastes, and Chi-Square test of independence was used to determine the significant relationship between the extent of implementation of solid waste and wastewater management and the respondents' profile.

RESULTS AND DISCUSSION

Demographic Profile

This part shows the respondents' profile, including their age, gender, civil status, highest educational attainment, and occupation. The respondents' demographic profile is an important aspect of administrative research as the nuances of managerial decisions vary with changes in the demographic variables.

Table 1. Profile of the Respondents (n = 20)

Indicators	Frequency	Percentage
I. Age (in years)		
21 - 24	4	20.00
25 - 29	5	25.00
30 - 34	3	15.00
35 - 39	2	10.00
40 and above	6	30.00
Mean: 33.20 StDev : 9.64		
II. Gender		
Female	16	80.00
Male	4	20.00

III.	Civil Status		
	Married	6	30.00
	Single	14	70.00
IV.	Highest Educational Attainment		
	Masters Level	6	30.00
	College Graduate	13	65.00
	Vocational	1	5.00
V.	Occupation		
	General Manager	11	55.00
	Human Resources Manager	5	25.00
	Front Office Manager	3	15.00
	Purchase Chief Officer	1	5.00

The respondents' highest proportion (30.0%) belonged to the age bracket of 40 years old & above. Expectedly a manager or personnel belonging to the higher management of the beach resorts were already in middle adulthood and possessed the ideal level of maturity and experience to manage people and the organization's general operations. On the other hand, only a few (10.0%) respondents were 35-39 years old. This age bracket still belonged to the early adulthood stage, who already have the competence and capability to manage the organization, such as beach resorts, wherein operations are complex.

Concerning gender, the data shows that more than three-fourths (80.0%) of the respondents were females, while males comprised only 20%. This data implies that females nowadays take the higher management level of beach resorts, unlike several decades ago, where male managers assigned such positions. Aside from that, lots of ladies took the Bachelor of Science in Hotel and Restaurant Management or Hospitality Management courses and were most likely to work in the hospitality sector where beach resorts belonged. Graduates in this particular course or program could greatly benefit as they have already trained and equipped in the specific field.

Regarding the respondents' civil status, more than two-thirds of the respondents (70.0%) of the respondents' total number were singles, and almost one-third (30.0%) were married. This data shows that in the current generation, the majority of the educated people would prefer to focus more on their career

rather than getting married and starting a family even though Anda, Bohol is a rural area where people are most like to get married earlier. The highest proportion of the respondents (65.0%) were college graduates. This means that the beach resorts are employing managers who have finished a bachelor's degree. Despite that Anda, Bohol is located in a rural community, the management of beach resorts preferred employees who had formal training in hospitality management since their major market are foreigners or those belonging to the higher income class in the society who have a higher preference when it comes to hospitality services. On the other hand, there was only one (5.0%) who had a vocational course. The management hired these individuals due to their long years of experience running resorts and exceptional hospitality operations' exceptional technical skills.

In terms of the respondents' occupation, most (55.0%) or eleven respondents were general managers of the beach resorts. In this study, the respondents' inclusion criteria should be those employees who could provide information on the beach resort operations. General Managers are expected to do this task well compared to other employees. There was only one respondent, comprising only 5% was the purchase chief officer. This employee was chosen to represent this study since he has a vast knowledge of the beach resort's overall operations.

Table 2. The Extent of Implementation of Solid Waste Management as to Waste Minimization (n=20)

	Indicators	Weighted Mean	Description
I.	Accommodation *The resort management implements the policy of the following,*		
1.	Sorting and recycling of glass, aluminum items, papers, andplastics from the guest rooms.	3.45	Highly Implemented
2.	Returning laundered clothes to guests in reusable cloth bags/baskets, mitigating the use of plastic bags.	3.35	Highly Implemented
3.	Not replacing half-used rolls of toilet papers/tissue boxesand leaving the replacements for guests to use when required.	3.20	Moderately Implemented
4.	Using partially used items from guestrooms at the employee restrooms or donating for charitable purposes.	2.75	Moderately Implemented
5.	Extending the lifespan of equipment by having it serviced/maintained regularly.	3.80	Highly Implemented

	Indicators	Weighted Mean	Description
	Aggregate Mean	3.31	Highly implemented
II.	Food and Beverage		
	The resort management implements the policy of the following,		
1.	Use refillable containers for sugar, salt, pepper, flour, soda, syrup, and cream.	3.60	Highly Implemented
2.	Using dispensers for straws and toothpicks and avoiding the purchase of individually wrapped items.	2.90	Moderately Implemented
3.	Using cloth roll towels or hand dryers instead of paper products.	3.30	Highly Implemented
4.	Donating unused food to local food banks or other charitable organizations.	2.50	Moderately Implemented
5.	Offering guests the option to order half-portions of food.	2.60	Moderately Implemented
	Aggregate Mean	2.98	Moderately Implemented
III.	Administrative and Office Functions		
	The resort management implements the policy of the following,		
1.	Using bulletin boards for memos, pamphlets, and brochures Instead of circulating hard copies to all employees.	3.45	Highly Implemented
2.	Using emails and requiring documents to be double-sided or use a smaller font and margins.	3.35	Highly Implemented
3.	Purchasing refillable pens and toner cartridges and using refillable, reusable toner cartridges for laser printers.	2.70	Moderately Implemented
4.	Using shredded paper instead of bubble wrap or foam for packaging purposes and re-labeling and reusing cardboard boxes for shipping and recycling all office paper and cardboard boxes.	2.35	Less Implemented
5.	Donating old computers and equipment to schools or charities.	2.20	Less Implemented
	Aggregate Mean	2.81	Moderately Implemented
	Overall Aggregate Mean	3.03	Moderately Implemented

Legend: Highly Implemented- 3.26-4.0; Moderately Implemented-2.51-3.25; Less Implemented-1.76-2.50; NotImplemented-1.00-1.75

The overall aggregate mean of 3.03 denotes that the resort management is moderately implemented in terms of minimizing solid wastes of the beach resorts in the areas of accommodation, food and beverage, and administrative and office functions. This result indicates that their adherence to the provisions of the Solid Wastes Management Act was only in many cases, and there are still several aspects in its operations that need to be studied to reduce the solid wastes that are just thrown but are still useful in many ways especially to other fewer privilege people in the society.

Donoho (2018) shared a positive trend in the hospitality industry that was perhaps boosted by a strong economy like hotels that wanted to give back. In Las Vegas, for example, MGM Resorts collects unused banquet food and helps fund a unique process to store and deliver it to various food banks.

Regarding the accommodation, the aggregate mean of 3.31 denotes that the resort management is highly implemented in terms of the policies in minimizing the solid wastes in providing accommodation services to the beach resorts' guests. This result indicates that the top management adheres to the Solid Waste Management Act's provisions about recycling resort supplies, minimizing the practice of using plastic once, and prolonging the equipment's usefulness.

Maher (2009) understood that good waste management and recycling are effective public relations tools because they are dedicated to corporate responsibility with environmental policy. "Doing in-room recycling is important because the guest sees that," he says.

The highest weighted mean of 3.80 reveals highly implemented in terms of the policy of extending the lifespan of equipment by having it serviced or regularly maintained in the beach resort's accommodation aspect. In this way, the management was able to minimize the solid wastes. Thus, rather than throwing away that equipment with zero value in the accounting books, they will still use them if they are still in good and working condition as long as the maintenance cost is not high compared to a brand new unit.

Constant use of tools and equipment is prone to wear and tear. Performing routine inspections allows resort management to see and repair small damage before becoming a big problem. Having a regular service significantly reduces faulty machines to ensure that parts are still in good working order (Dowler, 2015).

On the other hand, the lowest weighted mean of 2.75 indicates that there was only moderate implementation in using partially used items from guestrooms at the employee restrooms or donating for a charitable purpose. This means that

the resorts' management immediately disposes of guests' partially used items like tissue papers, shampoo, soap, and lotion, as garbage.

Dupere (2015) said that there are items that guests will use daily that resort operators would never think of donating. Those extras are necessities for the guests, yet luxuries to those donation centers for their basic needs.

The aggregate mean of 2.98 in food and beverage aspects shows that the beach resort management was moderately implemented in terms of minimizing waste in food and beverage. This means that the operators have some degree of hesitation in donating unconsumed food items, offering a smaller portion of food to guests to ensure that there will be no leftovers, and using dispensers for items like straws toothpicks to avoid single-use plastics.

Braley (2020) opined that a beach resort should commit to forecasting guest count and maximizing ingredients to minimize waste accurately. These options should be discussed in advance. The management also desires to donate excess food by ensuring that overproduction should be minimized, but recoverable food should be rerouted for consumption when it cannot be avoided.

The highest weighted mean of 3.60 shows that the resort management highly implemented refillable containers for sugar, salt, pepper, flour, soda, syrup, and cream. In many cases, the resorts' management discouraged using sachets or any single-use plastics like wrappers of food and beverage condiments and other supplies that will become useless when the contents are loaded into the containers.

Devenyns (2019) discoursed that refillable containers benefit the planet and any business entities' bottom lines. The World Economic Forum reports that plastic packaging waste represents an annual loss of $80 billion to $120 billion to the global economy.

The lowest mean of 2.50 specifies that resort management is moderately implemented in unused food to local food banks or other charitable organizations. The data implies that the resorts' management missed to dredge up the necessities of unprivileged people in the community of Anda, Bohol considering that in the Philippines, there are no food banks. However, most organizations' management is afraid that their materials or ingredients might go up if they give their leftovers.

Lastly, the aggregate mean of 2.81 in administrative and office functions indicates that the resort is moderately implemented in terms of minimizing the solid wastes in its office and support operations. It can be inferred that in many cases only, the operations in the office avoid the use of supplies that will only add up to the pile of solid wastes that remained unused or just being thrown to the dumpsites.

The highest weighted mean of 3.45 shows that the resort management highly implemented bulletin boards for memos, pamphlets, and brochures instead of circulating hard copies to all employees in administrative and office functions. With the adoption of technology like the Internet and Intranet in the resorts and hotels' operations, paper-based materials in disseminating information had been lessened. In this manner, the management was able to lessen the cost of procuring supplies in the office. In all cases, the resorts in Anda, Bohol promote the importance of lessening supplies that produce much garbage when the hardcopy information becomes outdated.

Kim (2018) said that bulletin boards are essential working tools in any busy environment. Ideally, they offer information to the employees and often update them on the daily routine duties and directives instead of printing memos and distributing them to all employees to give them a copy individually since it will cost energy in printing/ photocopying.

On the other hand, the lowest mean of 2.20 shows that resort management is less implemented in donating old computers and equipment to schools or charities. Usually, the old computers and equipment of beach resorts were just stored in the stockroom, which would consume their property and may add to disruption to their daily operations. Moreover, when resorts prolong the use of this type of equipment, the old ones will no longer be used when they decide to replace them with new ones. However, some items can still be used, but they were just stocked in the warehouse.

According to the Environmental Protection Agency, about 2.37 million tons of e-waste were in landfills in 2009. Unfortunately, many of the electronic gadgets dumped in landfills are still usable (Graves, 2021).

Table 3. The Extent of Implementation of Solid Waste Management as to Waste Reuse (n=20)

	Indicators	Weighted Mean	Description
I.	Accommodation		
	The resort management implements the policy of the following,		
1.	Donating used linens, towels, and blankets to local charities.	2.50	Moderately Implemented
2.	Installing a dispensing system for products such asshampoo, soap, and lotions.	2.50	Moderately Implemented
3.	Donating soap used and toiletries to local charities.	2.30	Less Implemented

4.	Using old linens to make aprons or cleaning rags.	3.35	Highly Implemented
5.	Reusing wastepaper as telephone answering pads or notes.	3.40	Highly Implemented
	Aggregate Mean	2.81	Moderately Implemented
II.	Food and Beverage		
	The resort management implements the policy of the following,		
1.	Donating empty buckets to schools or employees forstorage.	2.90	Moderately Implemented
2.	Donate old utensils and kitchenware to employees or charities and contact local recyclers to identify items/areas they are interested in.	2.80	Moderately Implemented
3.	Having old appliances repaired/rebuilt.	3.60	Highly Implemented
4.	Collecting unusable food scraps and giving or selling them to local pig farmers for animal feed.	3.00	Moderately Implemented
5.	Reusing linens for aprons and kitchen towels and providing recycling bins in kitchen/bar areas for glass, aluminum, and plastic containers.	3.50	Highly Implemented
	Aggregate Mean	3.16	Moderately Implemented
III.	Open Spaces and Grounds		
	The resort management implements the policy of the following,		
1.	Donating older equipment to employees or charities.	2.60	Moderately Implemented
2.	Donating healthy plants to community gardens, parks, and schools.	1.90	Less Implemented
3.	Leaving grass clippings when trimming as a source of nutrients to the soil and using organic gardening techniques.	2.90	Moderately Implemented
4.	Recycling motor oils, antifreeze, and paint used by grounds keeping and maintenance staff and phasing out the use of hazardous materials whenever possible.	3.25	Highly Implemented
5.	Removing dry leaves/branches regularly to prolong the freshness of other leaves/branches and collecting them in a dirty kitchen.	3.05	Moderately Implemented
	Aggregate Mean	2.74	Moderately Implemented
	Overall Aggregate Mean	2.90	Moderately Implemented

Legend: Highly Implemented- 3.26-4.0; Moderately Implemented-2.51-3.25; Less Implemented-1.76-2.50; Not Implemented-1.00-1.75

The overall aggregate mean of 2.90 indicates that the management of the resorts in Anda, Bohol, moderately implemented in terms of solid waste management in the context of wastes reuse. So in many instances, they were able to reduce the various forms of solid wastes like the used, old, worn out, and dysfunctional supplies, kitchen, and open spaces' equipment by either giving to the employees or donating them to the chosen group of beneficiaries.

The aggregate mean of 2.81 in the accommodation area shows that the resort management moderately implemented in terms of the policy of reusing the solid wastes in their operation of providing accommodation services to the guests or customers. These results denote that giving the old supplies to charities, using dispensers for bathroom supplies and other materials was done in many instances.

Erickson (2019) explained that guests love the experience of using hotel toiletries, but, unfortunately, some of those half-used bottles are likely to be thrown away. To be a five-star hotel, room service has to change the hotel bathroom amenities every day, even unused.

The highest weighted mean of 3.40 shows that the resort management moderately implemented the policy of reusing wastepaper as telephone answering pads or notes. This indicates that the accommodation personnel avoids wasting scrap papers in the front office as much as possible. Instead, they recycle it for other uses in the operations like telephone note pads. In this way, the papers that will be thrown into the garbage bins will be minimized.

Being a large part of the tourism industry, hotels can make a significant difference by applying certain policy changes. Apart from offering the necessary environmental benefits, hospitality sustainability also proves to be more profitable in the long run by lowering costs and attracting consumers (Kirkland, 2019).

However, the lowest mean of 2.30 shows that resort management is less implemented in terms of the policy of donating soap and toiletries to local charities. The resort operators in Anda, Bohol, were less mindful of giving the supplies in the accommodation services like toiletries to the marginalized sector of the locality. Instead, they immediately threw the used soap and other items used in the toilet as garbage.

Moreover, the aggregate mean of 3.16 in the aspect of food and beverage signifies that the resort moderately implemented the policy of reusing the solid wastes in food and beverage services at the beach resorts. This result indicates that they give out and use again worn-out and old kitchen tools, equipment, and other supplies for charitable purposes in many cases.

Baker (2006) said that whether a hotel is situated in a busy city center or a remote and pristine beach resort, several environmental and social issues are to contend with, like dealing with the wastes created by daily operations. Aside from the costs of waste disposal, there are other headaches for hotels.

The highest weighted mean of 3.60 indicates that the resort management highly implemented the old appliances repaired or rebuilt. It denotes that the beach resorts maintained their appliances' good working condition and avoided purchasing new items without fixing the appliances first. This is their way of reducing the budget allocated to purchasing kitchen utensils and equipment if the existing ones can still be repaired.

Connors (2018) discussed that the hotel or resort equipment has undergone major improvements and is becoming more automated and complex. Their usage was more widespread since they are more expensive, though it implied higher investments even if they often have reduced amortization periods.

Conversely, the lowest weighted mean of 2.80, on the other hand, denotes that the resort management moderately implemented the policy of donating old utensils and kitchenware to employees or charities and contacting local recyclers to identify items/areas in which they are interested. So, in many instances, the resort management prefers to give the old kitchenware to the employees or charities but under certain conditions to protect the hotel's interest and possible abuses of the employees.

Furthermore, the aggregate mean of 2.74 in the aspect of open spaces and grounds indicates that the resort management moderately implemented the policy of reusing waste items in the open spaces and grounds. This result shows that they could reduce solid waste by recycling some items or donating them to charitable organizations for even noble causes.

The highest weighted mean of 3.25 indicates that the resort management highly implemented the policy of recycling motor oils, antifreeze, paint, etc., used by grounds keeping and maintenance staff and phasing out the use of hazardous materials whenever possible. The resorts could save costs on purchasing maintenance materials for the hotels' operations and motor vehicles in all cases.

Recycling and reusing used motor oil is preferable to disposal and can provide great environmental benefits. Recycled used motor oil can be re-refined into new oil, processed into fuel oils, and used as raw materials in beach resorts' daily operations (United States Environmental Protection Agency, 2011).

On the other hand, the lowest weighted mean of 1.90 specifies that the resort management is less implemented in terms of donating healthy plants to

community gardens, parks, and schools. This data reveals that donating healthy plants to community gardens is less priority by the beach resorts considering that Anda, Bohol is located in the rural community. Most public places already had ornamental plants that beautified the schools' playing ground and open spaces. This means that the resorts' excess plants were immediately thrown into the garbage bin or the compost pit for decomposition.

Bradley (2019) discoursed that beach resorts' plant donations reduce garbage and impact the local community for gardening. It can positively impact food access, community vitality, local economies, and local communities' environmental conditions.

Table 4 presents the results on the beach resort operators' assessment of the extent of wastewater management implementation in aspects of monitoring water usage, conservation, and reuse Wastewater management is vital in a tourist facility like a beach resort to clean, conserve, and protect the water that will be clean enough to be reused by both resort staff and guests for drinking and washing and other resorts' daily activities, and other purposes.

Table 4. The Extent of Implementation of Wastewater Management (n=20)

	Indicators	Weighted Mean	Description
I.	Monitoring of Water Usage		
	The resort management implements the policy of the following,		
1.	Ensuring that water-saving practices have been taken for thelast twelve months.	3.80	Highly Implemented
2.	Regularly monitoring the water use system.	3.65	Highly Implemented
3.	Regular checking of the water system for leaks or any cause of surges in consumption.	3.90	Highly Implemented
4.	Immediate finding cause of water loss.	3.90	Highly Implemented
5.	Ensuring that showerhead replacement and modification arepracticed to conserve water.	3.70	Highly Implemented
	Aggregate Mean	3.79	Highly Implemented
II.	Conservation of Water		
	The resort management implements the policy of the following,		
1.	Water-saving measures in tourism facilities with water-intensive activities, e.g., swimming pools, gardens, and laundry services.	3.05	Moderately Implemented

2.	Using water efficiency equipment.	3.65	Highly Implemented
3.	Educating staff to water use and discharge to reduce to hand-scrape plates before loading, filling each rack to maximum capacity, recycling final rinse water, and keeping flow rates as low as possible.	3.60	Highly Implemented
4.	Installing proper devices and encouraging guests to conserve water will reduce consumption and discharge.	3.60	Highly Implemented
5.	Filling washing machines to reduce the number of loads,thereby saving water.	3.70	Highly Implemented
	Aggregate Mean	3.52	Highly Implemented
III.	Reusing Wastewater		
	The resort management implements the policy of the following,		
1.	Ensuring that the wastewater from bathrooms, sinks, and kitchens have less toxicity, good reuse potential uses minimal treatment, and is separated into one stream.	3.45	Highly Implemented
2.	Installing a wastewater facility that treats waste from the toilets and laundries containing more toxicity, reusing, and separating another stream.	3.10	Moderately Implemented
3.	Identifying the need for wastewater reuse.	3.20	Moderately Implemented
4.	Hiring a wastewater expert that provides a technical guide on the proper management of wastewater for water conservation.	2.90	Moderately Implemented
5.	Identifying the treatment required to implement the reuse options based on geographic, climatic, and economic factorsdictates the appropriate degree and form of wastewater reclamation.	3.10	Moderately Implemented
	Aggregate Mean	3.15	Moderately Implemented
	Overall Aggregate Mean	3.49	Highly Implemented

Legend: Highly Implemented- 3.26-4.0; Moderately Implemented-2.51-3.25; Less Implemented-1.76-2.50;Not Implemented-1.00-1.75

The overall aggregate mean of 3.49 indicates that the management of the resorts operating in Anda, Bohol is highly implemented in waste water management to monitor water usage, water conservation, and reuse. This means

that the operators were very conscious and serious in implementing a mechanism to ensure that the water supply is used wisely and conservable and reduce water costs being paid to the Municipal Water District at the Local Government Unit of Anda Bohol.

Tuppen (2013) explained that resort companies have a strong commercial and moral imperative for addressing water use. Cost is a clear factor: water accounts for 10% of utility bills in many resorts. Most resorts pay for the water they consume twice – first purchase fresh water and then dispose of it as wastewater.

In monitoring water usage, the aggregate mean of 3.79 reveals that resort management is highly implemented in monitoring water usage. This ensures that the level of water consumption in the entire beach resort does not exceed its normal level and avoids excessive water bills.

The highest weighted mean of 3.90 shows that the resort's management highly implemented the policy of regularly checking the water system for any leaks or any cause of surges in consumption. This means that the resorts were very keen on ensuring that the water pipes within and outside its building premises are in good condition to avoid water wastages and unwanted expenses on paying for water that is not used in operation.

Likewise, another highest weighted mean in the same indicators, also of 3.90, indicates the resort management highly implemented in terms of immediately finding the cause of water loss. The beach resort operators were strictly monitoring the cause of problems concerning water pipe leaks or any cause of water loss that would lead to a higher water bill.

Chatterjee (2016) said that leaking water pipes could considerably increase water consumption and incur high costs. A leaking toilet can waste up to 750 liters of water per day, compared with 30 liters per day required for five full flushes of a low-flush toilet in a guest bathroom.

Nevertheless, the lowest weighted mean of 3.65 still denotes that the resort's management is highly implemented in terms of monitoring the water use system. This result relates to the previous findings that the beach resort operators applied to check the water consumption level to ensure that the water bill is within the usual consumption and accounting budgets.

Borden and Roy (2015) discussed that the first step to reducing wastewater is monitoring consumption through a water use system. Measuring the amount of network water supply entering the resort building reflects the environmental impacts of water use.

The aggregate mean of 3.52 in the conservation of water reveals that the resort management is highly implemented in terms of the policy of conserving water. This result shows that they were conscious of adopting various conserving water, especially during the hot season. Water supply is scarce, and using electricity to pump water from the deep well is very costly also.

The highest weighted mean of 3.70 denotes that the resort's management highly implemented the policy of filling washing machines to reduce the number of loads and save water. It denotes that the beach resort operators are strictly imposing the standard operating procedure to all laundry staff to load the maximum capacity of soiled linens to the washing machines to minimize the number of loads to reduce water and electric consumption.

When resort manager worry about overloading their machines, they do not put enough laundry in their machines before use. This can be very wasteful because a typical laundry machine will consume just as much water and energy with a half-load as it would with a full one (Hydrofinity, 2018).

On the other hand, the lowest weighted mean of 3.05 reveals that the resort management moderately implemented the policy of applying water-saving measures in tourism facilities that have any water-intensive activities. In the era of high operating costs, especially water and electricity, business entities will adopt various means of reducing utilities like water.

Tourism is dependent on clean drinking water for visitors and the water resources needed to support the wide range of destination-based activities and services that the industry indirectly relies on (Tirado et al., 2019).

Furthermore, the aggregate mean of 3.15 in reusing wastewater reveals that resort management is highly implemented in terms of the policy of reusing wastewater out of the resorts' operations. This means that the operators installed systems that recycle wastewater from other operations to be used in other ways. In this manner, they were able to reduce expenses for water bills also.

The highest weighted mean of 3.45 denotes that the highly implemented in terms of the policy's management ensures that the wastewater from bathrooms, sinks, and kitchens has less toxicity, good reuse potential, uses minimal treatment, and is separated into one stream. This data shows that the resort operators checked and reviewed the greywater water quality and ensured less toxicity.

Greywaters must be monitored to achieve daily evaluation and establish a water use baseline, analyzing water quality trends during the observation period. Thus, to ensure the water has less toxicity, it is necessary to measure its quality and, during closing days, to measure water consumption used by actual equipment and systems (Scarfiello, 2016).

On the other hand, the lowest weighted mean of 2.90 reveals that the resort is moderately implemented in terms of hiring a wastewater expert that provides the technical guide on the proper management of wastewater for water conservation. It reveals that in many cases, the resort owners hired wastewater treatment professionals or specialists to guide them and provide them with technical advice on the proper way to reduce recycling and reusing wastewater. However, this decision is within the resorts' financial capability since professional fees can be expensive in addition to wastewater treatment facilities that bigger resorts need to procure to ensure that their wastewater is not being directly discarded to the environment containing highly toxic substances.

Genesis Water Technologie (2017) opined that it is necessary to avail the domestic wastewater treatment services from reputed water treatment companies. Nowadays, almost every hotel uses wastewater treatment solutions to reduce wastewater drainage from the sewage tanks.

Table 5. The Extent of Implementation of Solid Waste and Wastewater Management in the Beach Resorts (n=20)

No.	Indicators	Overall Aggregate Mean	Description
I.	Extent of Implementation of Solid Waste Management as to Waste Minimization	3.03	Moderately Implemented
II.	Extent of Implementation of Solid Waste Management as to Waste Reuse	2.90	Moderately Implemented
III.	Extent of Implementation of Wastewater Management	3.49	Highly Implemented
	Grand Mean	3.14	Moderately Implemented

There was only moderate implementation in solid waste management as to waste minimization by the resorts in Anda, Bohol. This means that the resort had not fully followed and complied with the provisions of the Solid Waste Management Act since there were processes and procedures in the operations that they could not do away with, throwing the unused items to ensure that their guests are satisfied and they were able to maintain their good image in the market.

Further, there was also moderate implementation in terms of solid waste management as to waste reuse. This result indicates that the resort management

could not use other unconsumed supplies, old machines, and equipment. Instead, they threw them as garbage.

Lastly, the overall aggregate mean of 3.49 indicates that the resort management is highly implemented in terms of wastewater management in its overall operations. This means that the management observed strict water use monitoring, water conservation, and reusing of wastewater for other uses. This is a way of also reducing the level of consumption and expenses on water.

More direct reuse is also possible: the technology to reclaim wastewaters as potable or process waters is a technically feasible for agricultural and industrial purposes (such as for cooling water or sanitary flushing), a largely experimental option for the supply of domestic water (Rucks, 2003).

Table 6 uncovers the test results of the significant relationship between the respondents' profile and their perception of the extent of implementing the solid waste and wastewater management of beach resorts.

Table 6. Significant Relationship between Respondents' Profile and their Perceptions on theExtent of Implementation of the Solid Waste and Wastewater Management of Beach Resorts

Variable	Computed Chi-Square	df	Critical Value	Significance	Result
A. Waste Minimization					
Age	15.241	12	21.026	Not Significant	Ho Accepted
Gender	2.257	3	7.815	Not Significant	Ho Accepted
Civil Status	5.212	3	7.815	Not Significant	Ho Accepted
Highest Educational Attainment	7.537	6	12.592	Not Significant	Ho Accepted
Occupation	5.056	9	16.919	Not Significant	Ho Accepted
B. Waste Reuse					
Age	14.563	12	21.026	Not Significant	Ho Accepted
Gender	4.115	3	7.815	Not Significant	Ho Accepted
Civil Status	7.897	3	7.815	Significant	Ho Rejected
Highest Educational Attainment	5.749	5	12.592	Not Significant	Ho Accepted
Occupation	4.667	9	16.919	Not Significant	Ho Accepted

C. Wastewater Management					
Age	5.980	8	15.507	Not Significant	Ho Accepted
Gender	0.882	2	5.991	Not Significant	Ho Accepted
Civil Status	5.434	2	5.991	Not Significant	Ho Accepted
Highest Educational Attainment	4.439	4	9.488	Not Significant	Ho Accepted
Occupation	2.888	6	12.592	Not Significant	Ho Accepted

There is a significant relationship between the respondents' civil status and their perceptions on the extent of implementation of solid waste management as to waste reuse, based on the computed chi-square value of 7.897, which is higher than the critical value of 7.815. Hence, the null hypothesis is rejected. This means that the respondents' civil status influences their views on implementing the solid waste management of beach resorts. Moreover, married and single managers or executives in the resort differed significantly on reducing waste through recycling or making the unused and old items of use to the employees and the community for charitable purposes.

Barr (2007) explained that such relationships' civil status and nature affected respondents' perceived capacity to impact waste problems. They certainly affected their willingness to become pro-active concerning waste management by seeking opportunities to prevent or reuse waste.

The scope of the study involves 20 beach resorts with the total population of 23 beach resorts registered in the local department of tourism in Anda, Bohol. There were only 3 establishments who did not participated on the study due to high restriction on the confidential data issue. The estimated time range of the study is in the second quarter of the year 2021. Due to the strict implementation of safety health protocol, the researchers used google form to answer all the questions provided in the instrument.

CONCLUSION

This study shows that the resort uses various strategies to manage and ensure its sustainability in the establishment. Through the local department of tourism, the government can help derive policies that are friendlier towards accessing, capital especially in the early stage of resorts' growth. These would facilitate better planning and execution at the ground level. Professional hiring and training of

resorts' employees can also be achieved. These would ensure the sustainability of the resorts and the tourism industry in the long run.

All parties (such as the NGOs, local communities, and private sectors) must put more effort and work towards contributing to the island's development. Tourism success shall not be only evaluated with respect to the number of increased foreign tourist arrivals and gross tourism revenues. Instead, it shall also be measured according to how the industry is integrated with the national and local economy, plus to how tourism contributes to the total development of the local community and the place itself.

TRANSLATIONAL RESEARCH

The findings of this study will be best translated to the tourists who will visit Anda, Bohol since they are the primary users of the facilities, amenities, and services provided by the hospitality establishments in the locality. So, suppose the hospitality establishments in the locality will be known to have provided quality facilities and services and observed the proper disposal of solid and liquid waste. In that case, they will be attracted and interested to visit and enjoy the different tourism services.

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