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Green Practices and Challenges in Accommodation Facilities

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Abstract. The United Nations' Sustainable Development Goals (SDGs) represent a global agenda for addressing key environmental, social, and economic challenges to achieve a more sustainable future. This research aimed to identify the sustainable practices and challenges encountered by the lodging industry in Dumaguete City regarding implementing green practices. This study employed a descriptive correlational research design to evaluate the existing condition and status of accommodation establishments' sustainable practices. Fifty-nine respondents are key personnel (owners/managers/supervisors) of the registered accommodation facilities in Dumaguete City. Key findings demonstrate a strong commitment to energy conservation and waste management in the lodging industry in Dumaguete City. Practices such as turning off equipment when not in use, cleaning air conditioner filters, minimizing illumination during daylight, waste segregation, and bulk purchasing are widely adopted. Despite these efforts, challenges in compliance with environmental regulations, cost management, resource constraints, and stakeholder awareness persist. The study reveals that younger employees and married individuals are more engaged in sustainability efforts, while gender, occupation, and length of employment do not significantly affect green behaviours. Organizational variables, industry trends, and external influences are identified as the primary challenges to green practices. The research underscores the need for comprehensive strategies incorporating organizational culture, leadership support, and external influences to advance environmental responsibility.

Keywords: Accommodation facilities; Green practices; Sustainable practices.

1.0 Introduction

Decades have passed since the hospitality industry adopted green practices to lessen its environmental impact by basing its operations on environmental-related service facets (Han et al., 2018; Wang et al., 2018). Green tourism is experiencing a notable surge in popularity within developing countries due to its emphasis on advancing conservation efforts and sustainable development through green practices. This burgeoning phenomenon recognizes the possible benefits of environmentally sustainable practices, such as increased supplier and consumer consciousness regarding ecological accountability (Aftabuddin & Jain, 2017). Thus, the tourism industry's predicament, namely the generation of a substantial quantity of refuse and additional pollutants, has consistently tarnished its otherwise favourable influence on local economies. An increasing number of individuals are visiting well-known tourist destinations, which has led to a notable apprehension regarding the refuse produced by their activities, including food packaging and plastic bottles. Consequently, this research aimed to identify the green practices and challenges encountered by the lodging industry in Dumaguete City regarding implementing green practices.

The primary aims of this research were to ascertain the demographic characteristics of the participating employees, encompassing information such as department, job position, employment status, educational achievement, years of service, training and seminar participation, and civil status. Following this, a profile of the accommodation options in Dumaguete City will be compiled, including details such as tenure, staffing levels, bed occupancy, and DOT accreditation. The extent to which green practices have been implemented in lodging facilities in Dumaguete City was then evaluated, emphasizing water conservation, energy management, refuse management, and air quality management. The challenges key personnel perceive regarding implementing green practices in lodging facilities will then be identified. These challenges will include those associated with policies and regulations, management, resources, cost, and awareness. The study will then investigate the significance of the respondents' profiles regarding the degree of implementation of green practices in lodging establishments in Dumaguete City and the difficulties that lodging establishments in Dumaguete City encounter when attempting to implement green practices. Finally, it is imperative to provide recommendations that benefit the management and the various constituents involved in the accommodation industry.

Dumaguete City, known as "University Town" and the "City of Gentle People," is a popular tourist spot in Central Visayas. International travellers are attracted to its vibrant ambience and attractions, which cater to business and leisure visitors. The city's accommodations support various budgets and tastes, ranging from backpacker-friendly bed and breakfasts to luxurious hotels. Hotels are crucial in advancing sustainability and environmental accountability in the tourism industry. Despite implementing eco-conscious measures in hotels, such as water conservation and energy-efficient illumination, there are still obstacles to balancing environmental impacts with quality standards. By implementing sustainable strategies, lodging establishments can differentiate themselves from rivals. Those who prioritize ecotourism and strive to reduce environmental impact are more likely to attract environmentally conscious travellers. As a result, managers are required to provide outstanding service and implement environmentally sustainable practices to satisfy the demands of these patrons while simultaneously demonstrating concern for the environment (Chan & Wong, 2006). Adopting green initiatives is paramount for hotels in Dumaguete City as it allows them to establish a unique identity and appeal to environmentally aware guests, thus ensuring their competitiveness within the tourism sector.

This research aimed to understand disparities regarding hotels' implementation of green practices in Dumaguete and the obstacles they encounter. The study aimed to encourage more hotels to adopt environmentally friendly practices, thereby contributing to developing a more sustainable local tourism sector. The research employs survey questionnaires to key hotel personnel in Dumaguete City to ascertain the sustainable practices and challenges these lodging establishments encounter.

2.0 Methodology

2.1 Research Design

This study employed a descriptive quantitative research design to evaluate the existing condition and status of accommodation establishments considered part of the green programs and it's challenges.

2.2 Research Locale

The research was conducted in Dumaguete City. Dumaguete City offers a dynamic research environment where scholars can delve into the multifaceted dimensions of sustainable green practices within accommodation facilities. By studying this vibrant city, researchers can contribute valuable insights to promote environmental sustainability, enhance tourist experiences, and foster the long-term viability of the hospitality industry.

2.3 Research Participants

The study involved key personnel/employees of various accommodation facilities in Dumaguete City. Purposive sampling was used in this study. Purposive sampling is a sampling approach in which the researchers choose members of the population to participate in the study based on the researchers' judgment or criteria. Purposive sampling was used in the study to select who among the individuals of the population fit all the criteria and could participate in the study to reach the number of respondents needed to participate. The owner, manager, supervisor, and/or officer who has served for over a year in accommodation facilities registered under Dumaguete City, with function rooms and restaurants operating from Monday to Sunday.

2.4 Research Instrument

The survey questionnaire on green practices is adapted from the ASEAN Green Hotel Standard (*www.asean.org*). Challenges in implementing green practices are adapted from the study of Tanveer, Yusliza, and Fawehinmi (2023). The questionnaire is composed of four parts. Part I is about the socio-demographic profile of the respondents. Part II is about the profile of the establishment. Part III is the extent of implementation of green practices of the accommodation in terms of energy management, waste management, water conservation, air quality management, and environmental conservation where respondents are asked to indicate their level of agreement by choosing from a 4-point Likert scale ranging from Great Extent - GE (4), Moderate Extent - ME (3), Limited Extent - LE (2), and No Extent - NE (1) in categorizing the responses of the research respondents on green practices. In contrast, Part IV is the challenges in implementing green practices, and the respondents are asked to indicate their level of agreement by choosing from a 4-point Likert scale. The scales of the responses are: 4 - Strongly Agree (SA), 3 - Agree (A), 2 - Disagree (D), and 1 - Strongly Disagree (SD).

2.5 Data Gathering Procedure

A survey questionnaire was sent to accommodation facilities to obtain responses from key personnel. Respondents were asked for permission to gather the necessary information for this study. Data were collected using printed questionnaires given to different accommodation facilities in Dumaguete City. The questionnaires were personally retrieved. Data were encoded and transposed to an Excel spreadsheet for tabulation. Finally, the gathered research data was treated with utmost confidentiality throughout the study. The researchers treated the data using the following statistical tools: Frequency is used in the study to determine the distribution of each respondent's profile included in the question. The percentage is used to get the part of the respondents' distribution of each profile from its total population. The weighted mean is used to calculate the respondent's level of agreement, and the standard deviation is used to measure how dispersed the data is about the mean. The weighted mean was used to calculate the respondents' level of agreement on the variables that asked about the extent of implementation of green practices and the challenges faced by accommodation facilities in Dumaguete City. Multiple regression is a statistical technique to analyze the relationship between a single dependent variable and several independent variables. The objective of multiple regression analysis is to use the independent variables whose values are known to predict the value of the single dependent variable. Each predictor value is weighed, the weights denoting their relative contribution to the overall prediction.

2.6 Ethical Considerations

Ethics are the morals that motivate people to do the right thing. This paper applied ethics to gathering and retrieving data, strictly observing Republic Act 10173, the Data Privacy Act of 2012. This law seeks to protect all forms of information, private, personal, or sensitive. It is meant to cover both natural and legal persons processing personal information. The research participants knew the study's purpose and voluntarily answered the questionnaire. They were well informed that the undertaking was handled with strict confidentiality, for it was enclosed in the questionnaire and was legally binding. After the data, the researchers kept all questionnaires for burning and/or shredding after 5 years. This complies with the data privacy law.

3.0 Results and Discussion

3.1 Respondents Personal Profile

Table 1 provides insights into the age profile of the respondents, indicating that a significant portion falls within the age brackets 18-27 and 28-37, comprising 32.20 per cent and 33.90 per cent, respectively. While 25.42 per cent of the respondents are between the ages of 38 and 47, and 5 per cent are between the ages of 48 and 57. This demographic distribution suggests a relatively younger workforce within the accommodation facilities surveyed. The frequency of younger employees in the sample may indicate a workforce more receptive to innovation and change, including adopting environmentally friendly practices. Research by Azoulay et al. (2020) supports this notion, highlighting that the workforce in their late 30s and early 40s, often associated with innovation and entrepreneurship, are more likely to succeed. In the context of green practices in accommodation facilities, a younger workforce may exhibit greater adaptability and openness to environmentally friendly initiatives, contributing positively to the implementation and sustainability of such practices.

Table 1. *Profile of the Respondents (n=59)*

Particulars	Frequency	Percentage
Age		
18 – 27	19	32.2
28 – 37	20	33.9
38 – 47	15	25.4
48 – 57	5	8.48
Sex		
Male	40	67.8
Female	19	32.2
Civil Status		
Single	46	77.9
Married	13	22.0
Job Position		
Owner	5	8.48
Manager	15	25.4
Supervisor	36	61.0
Others	3	5.08
Years of Service		
<1	4	6.78
1 – 3	20	33.9
4 – 7	12	20.3
8 – 10	13	22.0
≥11	10	16.9

Regarding sex, the majority of the respondents, comprising 67.80 per cent, are female, while only 32.20 per cent are male. This gender distribution prompts an exploration of how these demographics may influence perceptions and behaviors regarding the adoption of green practices and participation in sustainable initiatives within the hospitality sector. This could also be anchored to the study of Darroca et al. (2024), which discusses gender disparities in the Filipino Hospitality sector; this can be anchored to the slightly higher female representation among resort guests. The article's insights into gender-based preferences and behaviors can help explain why certain services and activities are more popular among women.

As to civil status, 46 or 77.97 percent of the 59 respondents are single, while 22.03 percent are married. This demographic distribution explores how civil status may influence perceptions and behaviors regarding the adoption of green practices and participation in sustainable initiatives within accommodation facilities. Research suggests that single individuals often exhibit higher levels of environmental concern and engagement in pro-environmental behaviors than their married colleagues.

Regarding job positions, most respondents, comprising 36 or 61.02 per cent, are supervisors of the accommodation facility. Followed by 25.42% who are managers, 8.48 % owners, and the least at 5.08% holding positions other than the said titles, which may represent officers or heads of certain departments. This distribution reflects the hierarchical structure within accommodation facilities and highlights the varying levels of influence and responsibility associated with each job position. As decision-makers and stakeholders, owners are responsible for determining the organization's strategic direction and resource allocation. Their support and commitment to sustainability initiatives are essential for driving change and embedding green practices into the organizational culture (Kim & Kim, 2021). However, this study's relatively tiny proportion of owner respondents suggests their involvement in sustainability efforts may vary, potentially impacting the organization's overall sustainability performance. Supervisors and managers are pivotal in translating sustainability goals into actionable plans and overseeing their implementation across different departments and functions.

As to years of service, Table 1 shows that 20 or 33.90 per cent of the respondents have been in the industry for 1 to 3 years, followed by 22.03 per cent who have served between 8 to 10 years. According to research, longer-tenured employee members may have important institutional knowledge and experience, which can help implement sustainable practices (Martinez et al., 2021). However, because of ingrained habits and customs, they could also show reluctance to change. On the other hand, younger workers might have more innovative ideas and be open

to implementing eco-friendly practices. However, they might not have the same in-depth knowledge of the dynamics and workings of the sector.

3.2 Accommodation Facility Profile

The institutional profile of the accommodation facilities in Dumaguete City aids the research in determining the business establishment and providing an overview of its operations. This will allow for better knowledge, clearer judgments, and the identification of relevant opportunities. Table 2 shows that hotels and resorts represent the largest proportion of accommodation establishments, comprising 49.15 percent of the surveyed facilities. These establishments are known for offering a wide range of services and amenities, catering to diverse traveler demographics.

Table 2. *Profile of the Accommodation Facility (n=59)*

Particulars	Frequency	Percentage
Type of Establishment		
Hotel/Resort	29	49.15
Bed&Breakfast/Guesthouse	5	8.47
Inn/Boutique Hotel	15	25.43
Hostel/Dormitel	9	15.25
No Response	1	1.69
Bed Capacity		
10-25	3	5.08
26-50	5	8.47
51-75	8	13.56
75-100	13	22.03
≥101	27	45.76
No response	3	5.08
Years in Operation		
0 – 5 years	17	28.82
6 – 10 years	10	16.95
11 – 15 years	9	15.25
16 – 20 years	9	15.25
≥ 21 years	14	23.73
Number of Employees		
1 – 10	15	25.42
11 – 20	20	33.90
≥ 21	11	18.65
No Response	13	22.03
DOT Accreditation		
Yes	53	89.83
No	6	10.17

Regarding the bed capacity, most of the respondents' accommodation facilities in Dumaguete City have more than 101-bed capacity at 45.76 per cent. It is followed by accommodation facilities with a 75 to 100-bed capacity at 22.03 per cent and a 51 to 75-bed capacity at 13.56 per cent. 5.08 percent of the respondents' accommodation facilities have only 10 to 25 bed capacity and 3 out of 59 respondents did not provide information. For the years of operation, the majority of respondents, 28.82 per cent, have been in operation for up to 5 years, indicating the presence of relatively new operators in the industry. It is then followed by 23.73 per cent of the respondents' accommodation facilities that have been in operation for more than 21 years. This highlights the presence of longstanding or operating accommodation facilities that have withstood the test and challenge of time. These veteran players in the industry may possess deep-rooted expertise, strong brand recognition, and established networks within the local community, contributing to their continued success and sustainability.

Regarding several employees, a substantial proportion of accommodation facilities have a modest workforce size, with 20 out of 59 respondents, or 33.90 per cent, having 11-20 regular employees and 25. Forty-two per cent, or 15 out of 59 respondents, employ between 1 to 10 individuals. The presence of accommodation facilities with over 21 regular employees highlights larger-scale operations that may have more excellent resources and capabilities for implementing comprehensive sustainability practices. The importance of workforce capacity and organizational structure in facilitating green practices within the hospitality industry is highlighted in research by authors such as Kim et al. (2020). They emphasize the need for clear leadership, organizational commitment, and employee engagement to drive sustainable practices effectively.

Lastly, regarding their DOT Accreditation, Table 2 unveils that out of the 59 respondents, 53, or 89.83 per cent, are accredited by the Department of Tourism (DOT), while only 6, or 10.17 per cent, are not. This demonstrates the prevailing trend of DOT accreditation within the accommodation sector, underlining the industry's commitment to meeting established quality standards and regulatory requirements. Research has underscored the importance of accreditation in enhancing customer confidence, improving market competitiveness, and driving sustainable tourism development (Han, Lee & Hyun, 2020). Understanding the prevalence of DOT accreditation among accommodation facilities provides valuable insights into industry standards, regulatory compliance, and the overall quality of tourism offerings.

3.3 Green Practices of Accommodation Facilities

Table 3 shows the extent to which accommodation facilities use green practices regarding energy management, waste management, water management, air quality management, and environmental conservation. Table 3 reveals the extent of the accommodation facilities' green practices in Dumaguete City as perceived by key personnel in energy management. As reflected, it obtained a composite mean of 3.46, interpreted as "Great Extent," or the green practices mainly were enforced. These findings indicate that the accommodation facilities participated in the energy management efforts as perceived by the key personnel.

The most widely implemented green practice is switching off equipment when not in use, which obtained a weighted mean of 3.88. This was followed by changing and cleaning the air conditioner filters regularly and reducing general lighting during the daytime, with a weighted mean of 3.81, and switching off lights when a guest leaves with a weighted mean of 3.73, all interpreted as "Great Extent". This indicates high adherence to energy-saving measures among the accommodation facilities surveyed. Research by Abdou et al. (2020) supports the significance of this practice; they explain that hotel operators should properly incorporate green hotel practices into their operational plans to achieve environment-related sustainable goals. By shutting down equipment during idle periods, accommodation establishments can significantly lower their energy usage and operational costs while minimizing environmental impact since the energy requirements of the guest room area vary depending on several aspects, like the room's layout, which may have large windows.

Regarding waste management, key personnel of accommodation facilities have always employed activities towards waste management, as evidenced by the composite mean of 3.56 with a verbal equivalent of "Great Extent", or the green practices observed and practiced all the time. The table revealed indicators such as always segregating waste material and observing the "first-in, first-out" disposal demonstrate high adherence to waste management protocols, exhibiting a weighted mean of 3.81 and 3.75, respectively. Woon et al. (2021) discuss that proper segregation prevents contamination, enabling food waste valorization despite challenges. By segregating waste materials at the source, accommodation facilities can streamline recycling processes and minimize contamination, enhancing overall waste management efficiency.

Regarding water management, as reflected, it obtained a composite mean of 3.10, interpreted as "Moderate Extent", or the green practices were observed and practiced most of the time or are partially implemented. Notably, the accommodation facilities mostly do their share in the water management programs by checking leaks, turning off unnecessary flows, and adjusting water flow according to the type of cleaning. Research by Chen et al. (2020) highlights the importance of leak detection and repair programs in the hospitality industry, emphasizing their role in reducing water waste and conserving resources. By promptly identifying and addressing leaks, accommodation facilities can minimize water losses and contribute to sustainability goals.

With a composite mean of 3.37, interpreted as "Great Extent," the accommodation facilities consistently observe and practice air quality management. These findings underscore the facilities' commitment to effective air quality management. Designation of smoking and non-smoking areas is a common practice in the hospitality industry, supported by research by Chen et al. (2020). By implementing designated areas, accommodation facilities can lessen the impact of secondhand smoke on indoor air quality and promote a healthier environment for guests and staff.

Table 3. *Extent of the Green Practices of Accommodation Facilities*

Green Practices	WM	VD
Energy Management	**3.46**	**GE**
Defrost freezers and clean the door seals regularly.	3.71	GE
Switch off equipment when not in use.	3.88	GE
Monitor energy consumption by checking the electricity meters at least once a month.	3.63	GE
Change and clean the air conditioner filters regularly.	3.81	GE
Reduce general lighting during the daytime.	3.81	GE
Made sure that the lights were switched off when guests left.	3.73	GE
Use of smart key cards in the rooms.	2.93	ME
Utilized energy-saving appliances, LED lighting, and intelligent energy management systems to minimize energy consumption.	3.53	GE
Provided occupant-controlled lighting.	3.15	ME
Used automatic shutdown sockets and fluorescent light with high energy efficiency	3.03	ME
Installed lighting controlled by sensors	2.76	ME
Displayed signage in guest/staff areas encouraging environmentally friendly behaviour.	3.56	GE
Waste Management	**3.56**	**GE**
Observe the "first-in, first-out" Disposal	3.75	GE
Segregate waste materials	3.81	GE
Prioritizes waste reduction through recycling and composting programs.	3.54	GE
Reused items that have a useful life	3.64	GE
Installed collection box for used batteries and recycled lightbulbs	3.24	ME
Provided alternatives to plastic bags	3.27	GE
Uses washable cloth products and dishware instead of disposable ones.	3.64	GE
Water Management	**3.10**	**ME**
Check leaks and turn off unnecessary flows.	3.81	GE
Install automatic water volume controls	3.17	ME
Read the water meter regularly to identify leaks.	3.53	GE
Adjust water flow according to the type of cleaning to be done.	3.63	GE
Do not let water flow while cleaning or rinsing.	3.44	GE
Wash only full loads in the dishwasher.	2.85	ME
Reuse the rinse water as flush water in garbage disposal units	2.75	ME
Install self-closing faucets.	2.55	ME
Install flow regulators on the showerheads/ faucet heads.	3.11	ME
Install low-flush toilets.	2.93	ME
Installed facilities utilizing rainwater and installed a drain to collect rainwater	2.29	ME
Air Quality Management	**3.37**	**ME**
Designation of smoking and non-smoking areas.	3.88	GE
Actively uses special equipment (e.g., dust collectors) to remove fine dust and particulates and to eliminate volatile organi c compounds.	3.15	ME
Installed indoor air purifiers to purify the air and remove various foul odours.	3.27	GE
Active use of special equipment (e.g. air environment plants) to remove odours and harmful gases.	3.29	GE
Regular monitoring and maintenance of equipment and hotel facilities are needed to ensure air quality, i.e., air conditioning.	3.75	GE
Retrofitting of existing heating, ventilation, and air conditioning (HVAC) and refrigeration units to avoid leakage and loss of existing ozone-depleting substances (ODSs).	3.20	ME
Use non-toxic products like lemon oil instead of products with toxic ingredients to clean and polish furniture when possible.	3.19	ME
Purchased cleaners with low toxic air pollutant and volatile organic compound (VOC) content.	3.37	GE
Chooses pump-style sprays emit fewer toxic air pollutants and volatile organic compounds (VOC).	3.32	GE
Used water-based, or other less toxic, paints and coatings.	3.32	GE
Regularly inspect floors to determine where the most wear occurs. Refinish only those portions.	3.56	GE
(If available) Used indoor furniture made of wood instead of pressed wood products, which can emit toxic air pollutants.	3.08	ME
Environmental Conservation	**3.49**	**GE**
Choose and buy seasonal fruits and vegetables.	3.38	GE
Use fresh products with little or no preservatives and food colouring.	3.59	GE
Buy products with as little packaging as possible.	3.40	GE
Buy in bulk rather than individually packaged items.	3.66	GE
Choose concentrated, environment and health-friendly cleaning agents.	3.62	GE
Avoid using plastic cups or disposable tableware.	3.43	GE
Provided interior space with access to daylight.	3.66	GE
Provided natural ventilation and interior space with access to outside views.	3.60	GE
Provided a green outdoor environment and landscaping	3.21	ME
Used renewable, reusable, or recyclable fixtures and furnishings.	3.40	GE
Used eco-friendly cleaning products and controlled noise during cleaning routines	3.46	GE

Legend: 3.25 – 4.00 Great Extent (GE), 2.50 – 3.24 Moderate Extent (ME), 1.75 – 2.49 Limited Extent (LE), 1.00 – 1.74 No Extent (NE)

Lastly, for environmental conservation, the composite means of 3.49, interpreted as "Great Extent", indicates a high level of engagement in these practices, reflecting the facilities' commitment to environmental sustainability. Conversely, there were these practices that the accommodation facility observed and practised all the time, such as buying in bulk rather than individually packed items, providing interior space with access to daylight, choosing concentrated, environment and health-friendly cleaning agents, and providing natural ventilation and interior space with access to outside views. Environmental conservation is the practice that minimizes humanity's impact on its surroundings. The main objective is to create and maintain conditions in which society and nature coexist. Likewise, environmentally preferable purchasing involves choosing products and services that will not hurt the human body, society, and the environment when competing with products and services that serve the same purpose, adding to the traditional parameters of price, quality, and functionality (Van Der Merwe, 2022). He further asserted that purchasing decisions, particularly in the tourism and hospitality industries, can substantially affect the environment and society. They import many commodities, including food, from far-off nations to satisfy customer needs since they are constantly pressured to impress and meet guest expectations. The benefits of adopting an environmentally preferable purchasing approach are numerous. The environment, the customer, and the supplier are all potential beneficiaries.

3.4 Challenges of Accommodation Facilities in Implementing Green Practices

Table 4 shows the extent to which accommodation facilities use green practices regarding energy management, waste management, water management, air quality management, and environmental conservation.

Table 4. *Challenges of Accommodation Facilities in Implementing Green Practices*

Green Practices	WM	VD
Policies and Regulations	**4.35**	**SA**
Compliance with environmental regulations is a significant challenge for the accommodation facility.	4.58	SA
Accommodation facility operations are affected by frequent changes in environmental policies.	4.44	SA
Challenges in striking a balance between environmental performance and service quality.	4.31	SA
Accommodation facilities are faced with penalties for non-compliance with environmental regulations.	4.08	A
Management	**4.41**	**SA**
Accommodation facilities often face challenges in managing peak season demand.	4.10	A
Maintaining a high level of guest satisfaction is a crucial management aspect.	4.49	SA
Managing cost and profitability can be a significant challenge for accommodation facilities.	4.69	SA
The accommodation facility's challenge is adapting to changing consumer preferences and green, sustainable technology trends.	4.34	SA
Resources	**4.22**	**SA**
Accommodation facilities often struggle to allocate sufficient financial resources for eco-friendly initiatives.	4.10	A
Limited availability of sustainable materials and technologies	4.05	A
The lack of skilled personnel and expertise can hinder the implementation of eco-friendly practices.	4.34	SA
Ensuring compliance with regulatory requirements and environmental standards is a substantial challenge	4.39	SA
Cost	**4.12**	**A**
Promoting eco-friendly initiatives and obtaining green certifications can require additional expenses.	4.29	SA
Employee training and environmental education programs can be costly.	4.03	A
The cost of adhering to green regulations is a significant barrier to the accommodation facilities' sustainability efforts.	4.02	A
Accommodation facilities find it challenging to balance environmental sustainability with the cost of implementing green practices.	4.17	A
Sourcing eco-friendly products and materials can be more expensive and complex than conventional alternatives.	4.08	A
Awareness	**4.19**	**A**
Actively promoting environmentally friendly practices to guests is a challenge to accommodation facilities.	4.41	SA
Guests may not fully grasp the importance of green initiatives.	4.17	A
Accommodation facilities struggle to effectively communicate green practices to guests	4.03	A
Encouraging eco-friendly behaviour faces challenges due to guest habits.	4.22	SA
Guest of the accommodation facility may not be informed about green practices, impacting their participation.	4.12	A

Legend: 4.20 – 5.00 Strongly Agree (SA), 3.40 – 4.19 Agree (A), 2.60 – 3.39 Neutral (N), 1.80 – 2.59 Disagree (D), 1.00 – 1.79 Strongly Disagree (SD)

Regarding the challenges, the accommodation facilities face in implementing green practices as perceived by key personnel in terms of policies and regulations. The composite mean of 4.26 rated as "Strongly Agree". This indicates that with the efforts of accommodation facilities in implementing green practices, several factors affect their smooth application. It concurs that accommodation facilities may struggle to meet the stringent requirements set by environmental authorities, potentially leading to negative consequences such as penalties or reputational damage. These coercive mechanisms are government laws, policies, and regulations concerning environmental matters that exert pressure on organizations involved in green practices. Environmental policies and regulations are critical drivers in shaping organizations' sustainability strategies and practices. Tong et al. (2022) explain that

significant efforts have been made to promote green efficiency progress from financial health, resource consumption, and environmental quality perspectives. Accommodation facilities must navigate a complex web of environmental laws and regulations imposed by local, national, and international authorities, which can be challenging to interpret and adhere to consistently.

In terms of key personnel respondents experienced towards the accommodation facilities management. The composite mean of 4.41, reflecting a "Strongly Agree" rating, implies that significant obstacles or difficulties must be addressed and overcome to manage the activities concerning green practices effectively. As in the table, the highest challenges in terms of management are managing cost and profitability, maintaining a high level of guest satisfaction, and adapting to changing consumer preferences and green, sustainable technology trends. A growing body of literature underscores the doubt and uncertainty surrounding the effectiveness of green practices, particularly from the perspective of owners, managers, and supervisors in the hospitality industry. For instance, recent research by Hossain et al. (2024) highlights the intricate relationship between financial digitization and green innovation, aiming to shed light on their dynamic interplay within a global context.

Regarding resources, the composite mean of 4.22, classified as "Strongly Agree," indicates a significant agreement among respondents regarding the formidable challenges posed by resource-related issues. One of the most pressing challenges identified is ensuring compliance with regulatory requirements and environmental standards, indicating a "Strongly Agree" rating. This emphasizes the complexities associated with navigating regulatory frameworks and meeting environmental compliance. Government policies and regulations are regarded as external elements that can influence how receptive businesses are to implementing green practices, according to Subagja (2023).

Regarding cost, the composite mean of 4.12, categorized as "Agree," indicates a notable agreement among key personnel regarding the significant financial obstacles encountered. The most challenging of which, in terms of cost as perceived by key personnel with a weighted mean of 4.29, is promoting eco-friendly initiatives, and obtaining green certifications can require additional expenses. This is followed by the challenge the accommodation facilities face to balance environmental sustainability with the cost of implementing green practices and the additional cost needed to train and educate employees regarding environmental programs. The above challenges underscore the financial complexities of implementing green practices within accommodation facilities. Overcoming these challenges requires strategic financial planning, innovative cost-saving measures, and supportive policy environments to foster sustainable business practices. Research by Deraman et al. (2017) explains that a significant sum of money is also needed for environmental auditing and certification costs, in addition to the cost of environmental goods and equipment.

Lastly, the challenges the accommodation facilities face in implementing green practices as perceived by key personnel in terms of awareness, with the composite mean of 4.19 rated as "Agree". This highlights the significant obstacles key personnel face in raising awareness about environmental issues and fostering commitment to sustainable practices among stakeholders. As seen in the table, actively promoting environmentally friendly practices to guests is a challenge to accommodation facilities; guest habits make it challenging to encourage eco-friendly behaviour, and as per accommodation facilities' key personnel in Dumaguete City, guests may not fully grasp the importance of green initiatives. The findings suggest that businesses may struggle to adopt green practices if suppliers, employees, and guests are unaware of environmental advocacies. As Wan et al. (2017) attested, even though guests are concerned about the environment, some might not be willing to pay extra for a green hotel. The study underscores the importance of effectively communicating the value proposition of green practices to guests to overcome resistance and encourage participation in sustainability initiatives.

3.5 Relationship Between Respondent's Profile and Green Practices

The significant effect between the profile and the implemented green practices of accommodation facilities' data is significant in understanding how the respondents' profiles correspond to their perceptions of the implementation of green practices of accommodation facilities. Table 5 presents the data to identify the effect of the profile variables on the extent of green practices in the accommodation facilities. Using Multiple Regression Analysis, the data reveal that the overall F-test is significant ($p < .001$). This means that some of the explanatory or independent variables are significant predictors of the extent of the practices of the accommodation practices.

Analyzing the regression output shows that the age (p = 0.046) and civil status (p <.001) of the respondents are the only predictors of the extent of green practices of the employees.

Table 5. *Effect of the Profile Variables on the Extent of Implementation of the Green Practices on the Accommodation Facilities (n=59)*

Variables	Coefficients	SE	t Stat	P-value
Intercept	3.33	0.40	8.30	0.00
Age	-0.16	0.07	-2.07	0.04
Sex (male=0,female=1)	0.16	0.12	1.40	0.16
Civil Status (single=0,married=1)	0.58	0.14	4.03	0.00
Job Position (owner/manage=0,supervisor=1)	0.10	0.10	1.08	0.28
Years of Service	-0.06	0.06	-0.96	0.34

R = 0.7319
R^2 = 0.5356
adjusted R^2 = 0.4693
F-ratio = 8.074
p-value = <.001 (significant)

Considering the age of the employees, the coefficient (-0.163) has a negative sign. This finding would mean that younger employees tend to have more green practices than older ones. A younger workforce may exhibit greater adaptability and openness to environmentally friendly initiatives, contributing positively to the implementation and sustainability of such practices. Research by Azoulay et al. (2020) supports this notion, highlighting that entrepreneur in their late 30s and early 40s, often associated with innovation and entrepreneurship, are more likely to succeed.

Regarding the civil status of the employees, the coefficient (0.580) is positive. Considering the coding of the variable (single=0, married=1), this finding connotes that married employees tend to display a better extent of green practices than single employees. The observed disparity in green practices between single and married employees may stem from variations in lifestyle and responsibilities. Single individuals typically have fewer family obligations and financial commitments and may prioritize convenience, affordability, or social activities, influencing their engagement with green practices in hospitality settings. Furthermore, the dynamics within marital relationships, such as shared decision-making and differing attitudes toward environmental conservation, may also influence an individual's propensity for green behaviours. Fisher et al. (2012) study indicates that married people are more likely to participate in green activities. Meanwhile, the other variables are not classified as significant determinants of the employees' extent of green practices. This signifies that the respondents' sex, job position, and years of service cannot account for the extent of their green practices. This suggests that factors beyond demographic characteristics, such as organizational culture, leadership support, and individual values, may be more prominent in shaping employees' attitudes and behaviours toward sustainability initiatives within accommodation facilities.

3.6 Relationship Between the Profile and Challenges faced by the Accommodation Facilities

Table 6 shows that the overall F-test is insignificant (p = 0.500 > α = 0.05). This signifies that the profile variables of the key personnel cannot significantly predict the extent of challenges the accommodation facility faces. In other words, their age, sex, civil status, job position, and years of service cannot account for the challenges the accommodation facilities face. The non-significant results suggest that factors beyond individual demographics play a more substantial role in influencing the difficulties encountered in implementing green practices.

Table 6. Effect of the Profile Variables on the Extent of Challenges Faced by the Accommodation Facilities (n=59)

Variables	Coefficients	SE	t Stat	P-value
Intercept	3.81	0.49	7.79	0.00
Age	0.03	0.09	0.33	0.74
Sex (male=0,female=1)	0.20	0.14	1.36	0.18
Civil Status (single=0,married=1)	0.10	0.17	0.59	0.55
Job Position (owner/manager=0,supervisor=1)	0.01	0.12	0.15	0.88
Years of Service	0.02	0.08	0.29	0.76

R = 0.3340
R^2 = 0.1116
adjusted R^2 = 0.0153
F-ratio = 0.8791
p-value = 0.505 (not significant)

This implies that challenges related to green practices may stem from broader organizational factors, industry dynamics, or external influences rather than the individual characteristics of the respondents. Several potential explanations can be explored to understand why demographic variables did not emerge as significant predictors of challenges faced by accommodation facilities. The study of Čater and Serafimova (2019) indicates that analyzing individual and joint influences on environmental variables can aid in profiling green consumers, suggesting that socio-demographic variables are helpful for segmentation in a market with limited marketing research development. Therefore, while individual demographics may offer insights into respondents' behaviours and preferences, they may not be decisive factors in determining the challenges faced in implementing green practices within the accommodation facilities.

3.7 Relationship Between the Extent of Challenges Faced by the Accommodation Facilities and Green Practices

In Table 7, Spearman's rho correlation analysis reveals a significant positive relationship between green practices and the challenges encountered by the accommodation facilities. This correlation holds statistical significance at the 0.05 level, indicating a meaningful association between the two variables. Therefore, rejecting the null hypothesis suggests that green practices influence the challenges confronted by accommodation facilities. The findings imply that accommodation facilities implementing green practices are prone to encountering fewer challenges than those that do not prioritize sustainability initiatives. This positive correlation underscores the potential benefits of integrating environmentally friendly practices within accommodation operations. By embracing green strategies, such as energy conservation, waste reduction, and water management, facilities may effectively mitigate various challenges associated with resource scarcity, regulatory compliance, and operational efficiency.

Table 7. *Bivariate Analysis on the Relationship between the Extent of Challenges Faced by the Accommodation and Green Practices*

Variables	Policies & Regulations	Management	Resources	Cost	Awareness	Overall Challenges
Energy Management	ρ = 0.201 p = 0.044 (significant)	ρ = 0.158 p = 0.116 (not significant)	ρ = 0.306 p = 0.002 (significant)	ρ = 0.126 p = 0.202 (not significant)	ρ = 0.301 p = 0.003 (significant)	ρ = 0.266 p = 0.005 (significant)
Waste Management	ρ = 0.182 p = 0.073 (not significant)	ρ = 0.133 p = 0.194 (not significant)	ρ = 0.255 p = 0.012 (significant)	ρ = 0.138 p = 0.188 (not significant)	ρ = 0.177 p = 0.079 (not significant)	ρ = 0.188 p = 0.050 (significant)
Water Management	ρ = 0.114 p = 0.247 (not significant)	ρ = 0.090 p = 0.366 (not significant)	ρ = 0.339 p <.001 (significant)	ρ = 0.208 p = 0.032 (significant)	ρ = 0.172 p = 0.078 (not significant)	ρ = 0.203 p = 0.029 (significant)
Air Quality Management	ρ = 0.219 p = 0.026 (significant)	ρ = 0.258 p = 0.009 (significant)	ρ = 0.269 p = 0.006 (significant)	ρ = 0.052 p = 0.590 (not significant)	ρ = 0.046 p = 0.639 (not significant)	ρ = 0.088 p = 0.340 (not significant)
Environmental Conservation	ρ = 0.258 p = 0.010 (significant)	ρ = 0.176 p = 0.080 (not significant)	ρ = 0.266 p = 0.007 (significant)	ρ = 0.105 p = 0.285 (not significant)	ρ = 0.117 p = 0.236 (not significant)	ρ = 0.209 p = 0.027 (significant)
Overall Practices	ρ = 0.176 p = 0.067 (not significant)	ρ = 0.153 p = 0.116 (not significant)	ρ = 0.379 p = <.001 (significant)	ρ = 0.119 p = 0.210 (not significant)	ρ = 0.159 p = 0.096 (not significant)	ρ = 0.207 p = 0.023 (significant)

Spearman's Rank Order Correlation (ρ) at 0.05 level of significance

These results align with the growing recognition within the hospitality industry that sustainable practices contribute to environmental preservation and yield tangible operational advantages. Accommodation providers adopting green initiatives enhance their ecological footprint and position themselves to address challenges more effectively, fostering resilience and competitiveness in an increasingly sustainability-conscious market. The results show that energy management has a significant relationship with accommodation facilities' challenges regarding policies and regulations, resources, and awareness. Energy management plays a pivotal role in accommodation facilities' sustainability efforts. Facilities striving for energy efficiency often encounter challenges related to policies and regulations, resource availability, and awareness levels. For instance, a study by Jones, Hillier, and Comfort (2016) found that compliance with energy regulations can be challenging for accommodation providers, especially smaller establishments with limited resources.

Waste management has a significant relationship with resources. Effective waste management minimizes environmental impact and operational costs in accommodation facilities. According to Smith and Jones (2021), implementing robust waste management strategies reduces environmental impact and improves operational

efficiency and customer satisfaction in accommodation facilities. While water management has a significant relationship with resources and cost, water conservation is a key aspect of sustainable operations in accommodation facilities, particularly in regions facing water scarcity or high water costs. Research by Pérez et al. (2020) explains that tourist activities increase water demand and wastewater production, necessitating desalination to meet resident and tourist needs. This results in higher water management costs and issues exacerbated by water losses and seasonal tourism.

Air quality is significantly related to policies, regulations, management, and resources. Maintaining good indoor air quality is essential for guest comfort and health in accommodation facilities. Policies and regulations are crucial in ensuring compliance with air quality standards. Research by Liu et al. (2020) discusses the impact of indoor air quality regulations on facility management practices and investments in ventilation systems. Additionally, studies by Zhang et al. (2018) emphasize resource allocation and effective management strategies in mitigating indoor air pollution sources within accommodation facilities. Lastly, environmental conservation has a significant relationship with policies and resources. Environmental conservation efforts encompass various initiatives to minimize environmental damage and promote sustainable practices. Policies and regulations provide a framework for guiding conservation efforts within accommodation facilities. Research by Becken et al. (2019) discusses the role of government policies and incentives in driving environmental conservation practices in the hospitality industry.

4.0 Conclusion

This study examines the adoption of environmentally friendly practices in Dumaguete City's hotel industry and the related challenges. The study identifies key demographic characteristics that influence the level of green practices adopted in lodging establishments by analyzing respondents' reanalyzing. The research highlights important areas for promoting sustainability, including energy management, waste management, water management, air quality management, and environmental conservation. Key findings reveal a strong commitment to energy conservation, such as powering down equipment when not in use, regularly cleaning air conditioner filters, and minimizing illumination during nighttime. Waste management practices, such as waste segregation and purchasing bulk items, are widely adhered to, along with measures to enhance air quality. These efforts underscore the dedication of staff members to sustainable practices and contribute to overall environmental sustainability in the sector.

Despite these positive steps, accommodation facilities face significant challenges in their sustainability initiatives. These challenges include compliance with environmental regulations, managing costs and profitability, resource constraints, and lack of awareness among stakeholders. The study establishes age and civil status as important indicators of green practice adoption, with younger employees and married individuals showing greater engagement in sustainability efforts. However, gender, occupation, and length of employment do not significantly impact green behaviours, highlighting the complex interplay between human and organizational factors in organizational stability efforts.

The research indicates that the challenges associated with environmentally friendly practices are more likely to stem from organizational variables and organizational or external influences rather than individual characteristics. The study emphasizes that limited awareness, resource constraints, and insufficient communication hinder substantive elements in green practices. The results highlight the need for comprehensive strategies incorporating organizational culture and reorganizational and external influences to promote environmental responsibility and overcome challenges in implementing green practices in accommodation establishments.

5.0 Contributions of Authors

Shella May Laspiñas: Conceptualization, Writing – original draft, Writing – review and editing. Ryan O. Tayco: Conceptualization, Writing – original draft, Writing – review and editing.

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7.0 Conflict of Interests

The authors have no conflict of interest to declare.

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