



Original Article

# Examining Awareness and Application of Green Sustainable Practices in Sagada's Accommodation Sector

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**Abstract.** The accommodation industry plays a vital role in the global economy but is associated with high resource consumption and environmental impact, particularly in remote destinations where infrastructure is limited. This study examined the level of awareness and extent of application of green sustainable practices among accommodation providers in Sagada, Mountain Province, and evaluated the relationship between the two. Using a descriptive-correlational design, data were collected from 168 respondents. Key findings revealed a high level of awareness across waste management, energy conservation, and water conservation practices. It showed waste management as the highest in terms of extent of application; however, it was only moderate in energy and water conservation, indicating practical and infrastructural constraints. The study revealed a strong positive relationship between awareness and application. The findings suggest that while awareness is widespread among accommodation providers in this remote area, translating that knowledge into practice remains a challenge. Integration of sustainable systems into planning and decision-making, and strengthening institutional support, can help achieve long-term sustainability and enhance the effective application of green practices in the accommodation sector.

**Keywords:** Accommodation sector; Energy conservation; Green sustainable practices; Waste management; Water conservation.

The hotel industry plays a vital role in the tourism and hospitality sector by providing accommodations, dining, and entertainment services that meet the needs and wants of travelers while generating economic growth and facilitating trade and cultural exchange. This sector is growing and thriving, driven by the higher rate of globalization and urbanization worldwide. The development of the hotel industry is creating an increasing number of accommodation options for individuals in their tourist destinations, leveraging each hotel's unique capabilities (Tahiri et al., 2021). This growth is a clear indicator of the hotel sector's significant impact on economic and cultural development.

In recent years, the hospitality industry has come to realize that sustainability is no longer a luxury but a necessity. Hotels worldwide are increasingly adopting green practices to reduce environmental impacts, enhance customer satisfaction, and improve operational efficiency. Green sustainable practices contribute to global environmental

goals by reducing carbon footprints and consumption (Bugdol et al., 2023). Moreover, these sustainability initiatives align with the United Nations Sustainable Development Goals (SDGs), which aim to improve environmental quality, economic prosperity, and social well-being (Alzoraiki, 2024). As a result, green, sustainable practices are essential for sustainable development, improving the quality of life across sectors and societies, and for future generations.

Globally, tourism has shown a strong recovery and continued growth after the COVID-19 pandemic. In the November 2023 World Economic Outlook report, the UNWTO noted that international tourism was on track to reach 80-95% of pre-pandemic levels by the end of 2023 while stating a continuous recovery by 2024. Supported by Anagnostopoulos & Fehr (2023), who found a steep increase in international travel. Similarly, the Philippine Department of Tourism and local industry analysts report that the hotel sector is poised for significant growth in 2025, driven by rising international arrivals and government-backed infrastructure upgrades. In light of these growing statistics, the UNWTO emphasizes and actively promotes green practices to ensure that tourism, including accommodation, contributes positively to destinations' economies, environments, and communities.

The adoption of green sustainable practices also provides positive operational and competitive advantages for accommodation establishments. Research has shown that implementing environmentally responsible practices results in improved profitability, enhanced customer satisfaction, and increased customer retention (Barakagira & Paapa, 2023). Furthermore, a global report by CBRE noted that investors and guests are increasingly favoring hotels with strong environmental practices. Accommodation owners and managers must be informed of, and encouraged to adopt, green practices that improve performance and are cost-effective.

Despite all of the benefits, studies have shown that the tourism and hospitality industry undoubtedly contributes to environmental degradation (Saab & Dael, 2023; Hegedüis et al., 2024; Nueda & Kelvin, 2021). Garcia-Granero et al. (2018) define green sustainable practices as the introduction of more efficient resources and the limitation of their environmental impact. These practices aim to reduce excessive resource consumption in an environmentally friendly manner. However, particular areas in countries, especially provinces, face barriers to adopting these green, sustainable practices. Empirical studies have identified various barriers, including a lack of knowledge and awareness, budget constraints, insufficient training, corporate social responsibility alignment (Tanveer et al., 2023), high costs, regulatory complexity, and limited innovation (Horwath HTL, 2022). It is still unclear whether accommodations in provinces are aware of Sagada, Mt. Province, Philippines, and its residents' level of awareness of green sustainable practices, the extent to which green practices are incorporated into their operations, and the relationship between awareness and application.

Although there are global and national studies that have examined green, sustainable practices in the accommodation sector, there is limited knowledge of the level of awareness and the extent of their application in remote destinations like Sagada, Mountain Province. Additionally, the relationship between awareness level and the extent of application in such a local context remains insufficiently explored. A small remote town, Sagada, lies about six (6) hours away from Baguio City, in the Cordillera Mountain ranges of the Mountain Provinces. Identified as a 5th-class municipality in the Philippines with a land area of 109.71 square kilometers. It consists of 19 barangays and has likewise become a popular tourist attraction in the Philippines. The Municipality boasts natural spots and cultural experiences that every tourist must try. The influx of tourists has led to the development of several tourism-related activities and increased demand for accommodations. Sagada has undergone a gradual shift from an agricultural livelihood to entrepreneurial ventures, where locals invest in tourism-related trades and businesses. Accommodations, restaurants, and souvenir shops are among the major enterprises that have experienced significant growth as tourism in the locality has risen.

These accommodation sector offer many opportunities for the development of Sagada, such as employment and taxes which can be sustained by helping them for greater awareness of the green sustainable practices and drive the workers of the accommodations in participating to the application on their workplace, in this way, it can help in the reduction of waste that can harm the environment at the same time a cost-saving strategy to continually preserve the facilities and the Municipality for future tourists destination where it can still accommodate visitors requires accommodation that satisfies them while staying in the place. Providing more information about green sustainable practices applied to accommodation establishments in Sagada, Mountain Province, will enhance their awareness of these matters, eventually lead to greater implementation in their establishments, providing tourists with a more enhanced experience when staying there, and help identify gaps and challenges. In this case, it will

spark their desire to learn more and actively apply these practices within their establishment.

The study benefits the accommodation sector in Sagada by enhancing the sustainability of tourism accommodation through excellent services and facilities. This will strengthen their efforts in green sustainable practices and promote a more holistic approach to their operations, catering to their guests while preserving the beauty of their establishment. The study also benefits the local people in Sagada, who depend on employment at the accommodation for their income. Tourists also benefit, as the establishment's owners and staff continually improve their facilities and services to ensure a favorable, memorable experience during their stay. Furthermore, this study will benefit the business sectors in Sagada, Mountain Province, by generating more profit from the influx of tourists who will experience excellent accommodations and, as a result, continue to return. Lastly, this study will benefit the Local Government Unit of Sagada, Mountain Province, through taxes collected from accommodation establishments. It will help them enhance awareness and application across these businesses to sustain the quality of their services and facilities, thereby providing tourists with a great experience. This will encourage tourists to visit Sagada today and in the future.

The study is grounded in the environmental management system, the Sustainable Development Goals (SDG 6 & 7), and the theory of planned behavior, which helped the researcher assess the awareness of accommodation establishments in Sagada, Mountain Province, regarding green sustainable practices and determine their extent of application, as well as evaluate the significant relationship between them. The Theory of Planned Behavior (TPB) posits that an individual's behavior is influenced by their attitude towards the behavior, subjective norms, and perceived behavioral control, which shape their intention to engage in the action, and, in this study, to adopt green, sustainable practices. The Theory of Planned Behavior (TPB) is a social psychology framework developed by Icek Ajzen (1991) that predicts and explains human behavior by examining the determinants of intention. That an individual is more inclined to perform a behavior when they have a positive feeling about it and consider that important others think they should do so. As the study measures and examines the relationship between awareness and the extent of application, TPB aligns with its core principle that people's behavior to participate is influenced by their awareness, and that the level of awareness correlates with the extent of application in the accommodation sector in Sagada, Mountain Province.

The Environmental Management System (EMS) Framework provides businesses with a framework for defining, implementing, maintaining, and continually improving their environmental performance (ISO, 2025). In essence, it enables businesses to handle their environmental obligations more efficiently and sustainably. The concept of green or greening in EMS aligns with the sustainable development goals of ISO 14001. The study used the EMS to focus on the responsible use of resources through green, sustainable practices in accommodations in Sagada, aiming to meet the needs of tourists today and future generations.

Similarly, the Sustainable Development Goals (SDGs) are "the blueprint to achieve a better and more sustainable future for all" (United Nations, n.d.), which helps organizations plan and strategize their operations to be more sustainable. The accommodation sector can have a significant impact on the environment through resource consumption and waste generation, posing serious threats. If these resources are not adequately managed, it will have a drastic impact on the environment and the organization's operating costs. The study promoted the two (2) sustainable goals, numbers 6 and 7, in the Municipality and increased their awareness of these, which eventually encouraged them to apply them in their establishments. The mentioned SDGs align with the Environmental Management System's goals and objectives in promoting green, sustainable practices. With these objectives, it can use TPB theory to assess the relationship between awareness of the accommodation sector in Sagada and the extent to which it applies green sustainable practices.

## **Methodology**

### **Research Design**

The study employed a quantitative research method using a descriptive correlational research design. This design is appropriate for describing and examining the relationship between variables and between the level of awareness and the extent of application of green sustainable practices. Descriptive correlational research is a research design that involves collecting and analyzing data or variables and explaining their relationships without making causal claims. This design helped the researcher measure, describe, and analyze data, and determine whether a relationship exists between the variables.

### **Research Instrument**

The researcher used an adapted and modified survey questionnaire from Dael & Saab's (2023) study, "Green Practices in the Hotel Industry: Proposed Implications to the Environmentally Appropriate Programs," as the primary data-gathering tool. Additionally, some questions were incorporated with relevant provisions from Provincial Resolution No. 2025-159 and Municipal Ordinances 09 s., 2025; No. 03 S. 2025; No. 04 S. 2025; and No. 12-2021 of Sagada, Mountain Province. To establish content validity, the adopted and modified questionnaire was evaluated by academic professionals (doctorate holders) in research and hospitality management. The experts assessed the instrument's content representation, the suitability of the research questionnaire to the level of awareness, and the extent of its application. The validation tool's validity test results are excellent, with an average weighted mean of 4.58 on a 5-point Likert scale. Recommendations and comments were incorporated to improve the instrument's clarity and accuracy. A pilot test was conducted to establish reliability. The researcher distributed approximately ten questionnaires for a reliability test. The results were analyzed by a statistician using Cronbach's alpha, which yielded a value of 0.95, indicating that the items are appropriate for data collection.

### **Data Gathering Procedure**

The researcher administered the questionnaires face-to-face. During the actual distribution, some respondents were not present. Thus, the researcher contacted the respondents via social media, using their Facebook accounts and Messenger to collect their responses. The researcher conducted interviews with some respondents during the administration and retrieval of the questionnaires as a supplementary context to gather additional relevant information that would support their problems or concerns regarding their awareness of, and the extent of, the application of green sustainable practices among accommodation establishments in Sagada, Mountain Province. Lastly, the researcher examined, collated, analyzed, and interpreted the results of the retrieved questionnaire.

### **Data Analysis Procedure**

The data collected from the respondents were analyzed using appropriate statistical tools to address the study's objectives. The study used a weighted mean to determine the level of awareness and the extent of application of green, sustainable practices in the accommodation sector in Sagada, Mountain Province. To determine the relationship between awareness level and the extent of application, the Pearson correlation coefficient was used. This measures the strength and direction of the linear relationship between the two variables. These statistical tools enabled the researcher to describe the variable and examine whether a significant relationship exists between the level of awareness and the extent of application of green sustainable practices.

### **Ethical Considerations**

This study applied ethics when gathering, retrieving, and storing data, adhering to the ethical standards outlined in the Data Privacy Act of 2012. Before the data collection, permission was obtained from the municipality of the province. Respondents were informed about the study's purpose and asked to provide their consent before answering. Participation was voluntary; participants were told they could withdraw or opt not to answer the survey without adverse repercussions. To ensure confidentiality and anonymity, the name portion of the questionnaire is optional, stored on the researcher's personal device, and accessible only by the researcher. Furthermore, the researcher claimed no financial or personal conflicts of interest that could influence the study's integrity or findings.

## **Results and Discussion**

### **Level of Awareness of Green Sustainable Practice along Waste Management**

Table 1 shows that, in general, the accommodation sector in Sagada, Mountain Province, demonstrated an extensive knowledge with an overall weighted mean of 3.55. Among the indicators, respondents appear to recognize proper waste segregation as the most important, suggesting they have a deep understanding of how waste management is applied responsibly and of the importance of sorting waste and improving waste disposal to make it safer, cleaner, and more eco-friendly. This awareness reflects the effectiveness of the municipality's initiatives, such as seminars, meetings, and other activities.

The findings supported the United Nations' (n.d.) statement, which emphasized that the accommodation sector can have a significant impact on the environment through resource consumption. Increased awareness is an essential step towards reducing the negative impact of waste management on the environment and health, as when individuals are aware of the potential harm caused by improper waste disposal, they are more likely to take

steps to reduce waste generation and adequately dispose of it (Biol et al., 2025). It aligns with the discussion of this indicator, suggesting that when awareness is present, there is a likelihood of action. Furthermore, the high level of awareness is the result of the Municipality's initiatives, including seminars, meetings, announcements, and effective communication, consistent with the findings of Carbonell-Alcoer et al. (2025), who emphasize that communication plays a fundamental role in fostering cooperation for environmental awareness.

**Table 1.** *Level of Awareness of Waste Management*

Indicators	Weighted Mean	Description
a. Proper segregation of waste to make disposal safer, cleaner, and eco-friendly.	3.82	Very Much Aware
b. The use of eco-friendly packaging, like banana leaves and paper bags, to protect nature and contribute to green sustainability.	3.51	Very Much Aware
c. Toiletries such as soaps, shampoos, conditioners, and toilet papers that are not used are reused to minimize waste and support eco-friendly practices.	3.49	Very Much Aware
d. The use of digitization or applying the paperless transactions to make expenses cheaper and work more eco-friendly.	3.38	Very Much Aware
<b>Total Average Weighted Mean</b>	<b>3.55</b>	<b>Very Much Aware</b>

However, the least-rated indicator in waste management among respondents is the use of digitization or paperless transactions to reduce expenses and work more sustainably. Some people in Sagada, Mountain Province, may be starting to learn how to use these digital apps or may still lack familiarity with modern technology. Indicates a knowledge gap, possibly due to limited awareness and insufficient training. The lowest level of awareness regarding digital or paperless transactions shows a contrast between cities and remote areas. Aligning with Shalini's (2025) findings, which show that urban users have a significantly higher rate of digital payment adoption than rural users, with 87.5% in urban areas and only 12.5% in rural areas. In line with the discussion under this indicator, some accommodation sector providers started operations 1-2 years ago and may still be in the early stages of adopting this practice. Likely to be influenced by lack of knowledge and awareness, insufficient training (Tanveer et al., 2023), and limited innovation (Horwath HTL, 2022).

#### **Level of Awareness of Green Sustainable Practice along with Energy Conservation**

Table 2 shows that the accommodations in the Municipality of Sagada are well aware of the identified indicators in the energy conservation dimension. It is evident in the average weighted mean of 3.53. It implies that the accommodation sector in the Municipality of Sagada has the essential knowledge to manage clean energy, especially during the peak season when consumption is highest. Moreover, this indicates that they are capable of adopting green, sustainable practices that can help reduce operational costs, environmental impact, and improve long-term sustainability.

**Table 2.** *Level of Awareness of Energy Conservation*

Indicators	Weighted Mean	Description
a. Employee participation in turning off lights, informing guests to save energy, to save resources, lowering city services, and supporting green practices.	3.68	Very Much Aware
b. Local product sourcing to reduce carbon footprint (buying or using locally produced products).	3.61	Very Much Aware
c. The use of renewable energy sources such as solar panels, etc., to give clean, sustainable power for people and the planet.	3.58	Very Much Aware
d. The use of Light-Emitting Diode (LED) or Compact Fluorescent Lamp (CFL) to light with lower energy use and longer life.	3.51	Very Much Aware
e. The use of motion sensor lighting for efficiency through using the light only when needed.	3.27	Very Much Aware
<b>Total Average Weighted Mean</b>	<b>3.53</b>	<b>Very Much Aware</b>

As SDG 7 is the United Nations Sustainable Development Goal focused on ensuring universal access to affordable, reliable, sustainable, and modern energy for all, it aims to increase the share of renewable energy, improve energy efficiency, and expand access to clean energy. To achieve this goal, the accommodation in Sagada must continually learn more about these energy conservation indicators and adopt green sustainable practices.

Among the indicators, employee participation in turning off lights, informing guests to save energy, and helping to save and conserve resources to lower city services is at the top of the list. Means that the accommodation sector in Sagada recognizes the need for staff/s involvement and guest/s' cooperation in contributing to energy conservation. The high level of awareness could indicate that implementing this conservation practice can lower operational costs and support local energy efforts. This finding aligns with the study by Chen & Chen (2021), which indicates that employee participation is crucial for the success of hotel energy-saving practices. A study by

Valenzuela et al. (2025) also found that employees who receive sufficient awareness and reliable knowledge will understand the importance of energy-saving practices.

The use of motion sensor lighting in the accommodation in Sagada is the least among the indicators, with a mean of 3.21. Implies a lack of awareness of how technology contributes to energy conservation and how conservation contributes to sustainability. Some accommodations usually have a censored solar panel along the way and CCTV that lights up whenever someone moves or passes by. However, this indicates a knowledge gap, highlighting the need for orientation or awareness initiatives to help accommodation maximize this technology and reduce operational costs, aligning with modern sustainable practices. This finding is consistent with Khafiso et al. (2024), who found that a lack of awareness, knowledge, and funds is a barrier to the adoption of energy management technologies or automated lighting. One significant factor in the adoption of environmental technologies is technical knowledge, as cited by Adeel et al. (2024). Motion sensor lighting is different from traditional green sustainable practices, like turning off lights manually, which are widely common and require proper awareness programs. Similarly, motion-sensor lighting helps reduce energy waste by turning lights on only when needed (United Nations, n.d.).

### Level of Awareness of Green Sustainable Practice along with Water Conservation

As shown in Table 3, the level of awareness of green, sustainable water conservation practices in the accommodation sector of Sagada is very high. It indicates that accommodations recognize the need to adopt water-saving practices to minimize consumption, protect the local water sources, and sustain supply during peak seasons.

**Table 3.** *Level of Awareness of Water Conservation*

Indicators	Weighted Mean	Description
a. Provisions or signage of "Save Water" to guide guests to practice water conservation.	3.57	Very Much Aware
b. Utilization of rainwater/rainwater harvesting to save water and support sustainable resource use.	3.51	Very Much Aware
c. Installation of low-flow (controlled flow) faucets features in bathrooms and kitchens to cut water use without reducing effectiveness.	3.46	Very Much Aware
d. Implementation of towel and linen reuse in guestrooms unless it is necessary to change to conserve resources.	3.24	Very Much Aware
<b>Total Average Weighted Mean</b>	<b>3.44</b>	<b>Very Much Aware</b>

Sustainable Development Goal (SDG) 6 focuses on the availability and sustainable management of water and sanitation for all, aiming to ensure clean water and sanitation for everyone. It addresses the fundamental human need for clean water and targets to achieve universal and equitable access to safe drinking water, improve water quality, reduce pollution, and increase water-use efficiency and wastewater treatment by 2030.

The table shows that provisions or signage with the message "Save Water" to guide guests in practicing water conservation in the accommodation is at the top of the list, with respondents reporting a high awareness. It implies that the accommodation sector in Sagada fully understands the importance and significance of water-saving reminders for guests. Suggests that accommodation establishments are recognizing that simple yet direct provisions, such as "Save Water," can guide guests, reduce water consumption, and support more environmentally friendly operations. The high level of awareness indicates that this indicator is already acknowledged in their establishments as a practice for water conservation. This finding supports studies showing that informational signage increases awareness (Choquette & Hand, 2021), shapes brand reputation, and affects customer behavior (Joseph & Pathak, 2023). Similarly, signage has generally played a significant role in improving a person's behavior (Xiang et al., 2022). Therefore, a high level of awareness of provisions and signs such as "Save Water" in the accommodation sector in Sagada can strengthen environmental awareness, particularly water conservation, among both staff and guests.

The least effective indicator under the water conservation dimension is the implementation of towel and linen reuse in guestrooms, unless it is necessary to change them to conserve resources. Even though it is the lowest-rated, respondents rated it as very much aware. It implies that the accommodation sector is well-informed about this practice. The establishments also recognize the benefits of avoiding water waste, especially during peak season, to ensure an adequate supply. Some accommodation managers and supervisors said during the survey that it is unhygienic. It indicates that while this water conservation practice is well understood, the awareness alone may not be enough to outweigh the need to maintain guest comfort and hygiene standards. A study by

Singgalen (2024) reveals that 85% of guests consider cleanliness a primary factor influencing their overall experience. It concludes that 90% of guests rated cleanliness as one of the factors most likely to influence their recommendation of the property and their future return. It is also supported and mandated by the Department of Tourism (DOT) for strict hygiene compliance, which requires accommodations to undergo regular cleaning. The high level of awareness of this practice can be limited by mandated safety standards, expectations, and regulatory requirements, which explain the relatively lower awareness of implementation of towel and linen reuse in the accommodation sector in Sagada, Mt. Province.

In summary, on the level of awareness regarding green, sustainable practices in the accommodation sector of Sagada, Mountain Province, waste management is at the top of the list, with an average weighted mean of 3.55, indicating that accommodations prioritize practices that directly impact the environment—followed by another very high level of awareness, energy conservation, and water conservation, which indicates their readiness to adopt energy and water saving practices with proper guidance. With an average weighted mean of 3.51 across these three (3) dimensions, it indicates that Sagada's accommodation sector is well-equipped to support green, sustainable practices and is likely capable of strengthening environmental performance through education or awareness initiatives.

This result aligns with the existing literature, which indicates that, even with a strong commitment to waste and energy conservation, one of the primary barriers to adopting green practices is stakeholder awareness (Laspiñas & Tayco, 2025). It emphasizes that awareness is essential in adopting and promoting green sustainable practices in the accommodation sector. A study also proved that a higher level of awareness or education results in better perception towards sustainable practices, which preconditions individuals to adopt and participate in these sustainable initiatives (Dejo et al., 2023), as reflected with the Theory of Planned Behavior (TPB), where awareness of sustainable practices (Attitude) results in adoption or participation (Behaviour). The sustained consistency of a high level of awareness across all dimensions reflects the effectiveness of the municipality's sustainable initiatives for the accommodation sector in Sagada, Mountain Province, such as seminars, community programs, and information dissemination. Supported by Carbonell-Alcocer et al. (2025), who emphasize that strong communication enhances environmental awareness. Therefore, the overall finding regarding the level of awareness aligned with the existing literature, indicating that informed accommodation sectors are more likely to contribute positively to the environment through green, sustainable practices. In addition, future initiatives should focus more on strengthening actual green, sustainable practices and on maintaining compliance to raise awareness across the overall operation and to harness environmental and business benefits.

### Extent of Application of Green Sustainable Practice in Waste Management

As shown in Table 4, the extent of application of green sustainable practices in the accommodation sector of Sagada, Mountain Province, in the area of Waste Management, is exceptionally high. It implies that the accommodation establishments are not only aware of these waste management practices but are also actively applying them in their daily operations. Indicates a strong commitment to implement management practices consistently and to environmental responsibility. This wide range of applications can also suggest that these waste management practices are becoming standard operating practice in the Municipality, impacting the environment, community, and economy, possibly due to the lack of sanitary landfills and garbage trucks.

**Table 4.** *Extent of Application in Waste Management*

<b>Indicators</b>	<b>Weighted Mean</b>	<b>Description</b>
a. Practicing the proper segregation of waste.	3.72	Extremely High
b. Using digitization or paperless transactions.	3.29	Extremely High
c. Practicing eco-friendly packaging, such as banana tree leaves and paper bags.	3.29	Extremely High
d. Recycling toiletries such as soaps, shampoos, conditioners, and toilet papers, if not reused.	3.18	Moderately High
<b>Total Average Weighted Mean</b>	<b>3.37</b>	<b>Extremely High</b>

The table shows that practicing proper waste segregation in their accommodation is at the top of the list. The widespread adoption of this indicator indicates that the accommodation sector in Sagada is not only aware of sustainable waste management practices but is also actively implementing them in its daily operations. It indicates a strong commitment to the environmental management system (EMS) across all establishments, showing that the indicators for this waste management are institutionalized as standard procedures. Although it is rated extremely high, most respondents stated that this is one of their problems: even though they practice proper waste segregation, there is no compost pit, no one is collecting the waste, and no designated place to dispose of the trash.

It implies that while the accommodation establishments are doing their part, this sustainability practice depends heavily on government support. The Municipality's local government can help address this by planning a designated site for disposing of these wastes and allocating a budget for a truck to pick up the segregated waste, thereby significantly enhancing the impact of the accommodations' efforts. This finding supports the existing literature, which identifies various barriers to sustainability, whereas local government initiatives are among the stakeholders that can mitigate these barriers (Gangwani et al., 2023).

The least from the list is recycling toiletries such as soaps, shampoo, conditioners, and toilet paper. It implies that accommodation in Sagada does not always use recycled toiletries; perhaps 70% of accommodations adopt this as one of their green, sustainable practices. According to some respondents, "yes, we do take the unused/untouched toiletries, either we will keep and use them, or give to those visitors who are looking for these items, or to those who did not bring their own toiletries for free". By doing this, it can help minimize waste products and also assist those who need the items. Perhaps this is the least significant indicator under the waste management dimension of green sustainable practices, as it implies that hygiene takes precedence over reusing or repurposing these unused toiletries. To improve this practice, accommodation sectors may collaborate with local government units or non-governmental organizations to develop standardized guidelines for the reuse or recycling of toiletries. This community and coordinated efforts can strengthen the Municipality's waste reduction efforts and promote the consistent application of green, sustainable practices.

### **Extent of Application of Green Sustainable Practice along with Energy Conservation**

Table 5 shows the extent of application of green sustainable practices. Energy Conservation is moderately high. It reflects growing awareness of the importance of reducing energy consumption within business operations for efficiency, cost savings, and environmental responsibility. The table shows that, among the indicators, employees participating in energy-saving practices are at the top of the list as reflected in the section mean of 3.54. It implies that the accommodations in Sagada have successfully integrated this practice into their daily operations. This simple yet impactful practice reflects a strong culture and the importance of energy conservation. Supported by Chen & Slade (2025), who found that an individual is more likely to perform a behavior when they have a positive attitude towards it and consider it important to do so. The outstanding level of application suggests that staff at the accommodation establishment recognized the importance of conserving energy and were motivated to participate. Supported by the Department of Tourism (DOT), which regulates the accommodation sector through the Tourism Act of 2009 (Republic Act No. 9593), ensuring accommodations meet national standards for safety, sanitation, and service quality through accreditation requirements that specify standards for room facilities, hygiene, maintenance, and staff training.

*Table 5. Extent of Application of Energy Conservation*

<b>Indicators</b>	<b>Weighted Mean</b>	<b>Description</b>
a. Employees using energy-saving practices like turning off lights when not in use.	3.54	Extremely High
b. Buying and using the locally produced product.	3.44	Extremely High
c. Using LED or Compact Fluorescent Lamps (CFL).	3.30	Extremely High
d. Using a renewable energy source (e.g., solar panels).	3.19	Moderately High
e. Using motion sensor lighting.	3.76	Moderately High
<b>Total Average Weighted Mean</b>	<b>3.53</b>	<b>Moderately High</b>

The least favorable indicators are the use of a renewable energy source and motion sensor lighting, which respondents rate as moderately high. It implies that these practices are not yet fully adopted throughout the accommodation sector in Sagada, Mountain Province, but around 70% of establishments apply them in their operations, though not daily. These findings suggest that barriers such as awareness, technical knowledge, and costs are hindering widespread adoption. Some respondents mentioned, "If it is only needed, then that is the time they would apply it. It indicates awareness of renewable energy and motion sensor lighting; however, it is still an emerging practice within the municipality and requires support and education to be fully integrated into their daily operations. It is recommended that all accommodations in Sagada apply these indicators to reduce their electricity consumption, as discussed in the Asia Pacific Hotel Sustainability Trends (2022), and to comply with SDG 7, affordable and clean energy.

### **Extent of Application of Green Sustainable Practice along Water Conservation**

Sustainable practices in the accommodation sector of Sagada, Mountain Province, particularly in water conservation, are moderately high. It means that the establishments are frequently applying water conservation

practices, but not 100% of the time in their daily operations. Respondents rated using controlled flow of water in the faucets in the bathrooms and kitchens, and placing provisions or signage of the "Save Water" as extremely high. The extremely high ratings imply that all accommodations in Sagada are fully applying these basic yet effective water conservation practices. It indicates their strong commitment to reducing water consumption and support for sustainability by implementing these practices in their operations. Saikia (2024) states that water-saving technologies, such as low-flow showerheads and recycling systems, help conserve water resources. In applying this indicator, Dehghani et al. (2023) support the notion that careful management and use of water resources can ensure their availability for future generations, while using less water without compromising necessities such as food, drink, and hygiene.

**Table 6.** *Extent of Application of Water Conservation*

<b>Indicators</b>	<b>Weighted Mean</b>	<b>Description</b>
a. Using low-flow (controlled flow) faucets in the bathrooms and kitchens.	3.29	Extremely High
b. Placing provisions or signage of the like "Save Water".	3.28	Extremely High
c. Using rainwater or doing rainwater harvesting.	2.94	Moderately High
d. Reusing the towel and linen in the guestroom unless it is necessary to change.	2.82	Moderately High
<b>Total Average Weighted Mean</b>	<b>3.08</b>	<b>Moderately High</b>

The two (2) least indicators in water conservation, rated by the respondents as moderately high, are using or harvesting rainwater and reusing towels and linen unless it is necessary to change them. It means that some accommodations often apply these indicators in the operation of their establishments. The first indicator is the second-to-last rank because, according to some respondents, the Municipality of Sagada has a large community water tank that is sufficient to meet their water consumption needs during the summer season. Moreover, some respondents stated that water is not a problem at their establishments, as they have a sufficient water supply from the mountains. Therefore, not all of them harvest rainwater as an alternative supply when it rains. Means that some accommodations rely on the community's water strategy to sustain their water supply. It highlights that even if the level of awareness is high on this indicator, it does not necessarily mean they are applying it, due to various factors.

The second indicator, listed last in the ranking, is the reuse of towels and linen unless essential. During the distribution of the questionnaires, most of the respondents said that whether it is used or not by the guest, but placed in their room, then it needs to be changed, whether it is used or not, to maintain hygiene among their guests, they would go for changing it, not reusing it. The last rank is intended to follow the sanitation maintenance standards set by the Department of Tourism (DOT), which require accommodations to maintain strict hygiene through regular cleaning, proper waste disposal, and vermin control programs.

It indicates that the Municipality of Sagada recognizes cleanliness and hygiene as important factors in the accommodation sector, thereby promoting its dedication to sanitation standards. Means that even if their level of awareness of this indicator is high, factors embedded in the accommodation sector determine whether it is applied. This behaviour reflects the Theory of Planned Behavior (TPB), whereas the accommodations believe hygiene is essential, which then shapes their actions of constantly changing the linens and towels after the guests. Supported by Araújo et al. (2025), who provided strong evidence that awareness is just a background factor, while trust and perceived behavior control are the drivers of behavior. This behavior also aligns with SDG 6, clean water and sanitation, highlighting the need for cleanliness. This finding aligns with the existing literature, which found that even when a person possesses good knowledge, awareness, and attitude towards a behavior, they do not fully practice it (Ghani et al., 2025). In relation to Ajzen's Theory of Planned Behavior (TPB), individuals may have a high level of awareness or be positively disposed towards a particular practice. However, the actual application of the practice is still influenced by attitudes towards certain behaviors, subjective norms, and perceived behavioral control. In the Municipality of Sagada, limited water supply and sanitation standards hinder their application despite awareness.

**Relationship Between Level of Awareness and Extent of Application along Waste Management, Energy Conservation, and Water Conservation**

The computed correlation coefficient of the two (2) variables, which are the level of awareness and extent of application of the accommodation in Sagada, Mountain Province, regarding green sustainable practices under waste management, energy, and water conservation, yields a value of 0.85, which is closer to 1. It indicates a strong positive linear relationship between awareness and the extent of accommodation application in Sagada. Means

that as awareness of accommodation in Sagada increases, the extent of its application will also increase. The relationship between these two (2) variables used in the study is approximately linear. The computed correlation coefficient indicates that the variables move together in the same direction, following a straight line. The deeper the accommodation understands these green sustainable practices, the more they will apply them in their daily operations. Supported by research conducted across the Philippines, in Dumagete City, Tagaytay City, and Albay, researchers have found that the depth of environmental awareness serves as the primary driver of the extent of green practice application and implementation (Laspiñas & Tayco, 2025; Lanzaga, 2024; Naje & Gallato-Reamillo, 2025).

The positive linear correlation also indicates that as long as the manager or owner has an excellent understanding of these green sustainable practices, they will have the initiative to explain them to their workers and strictly supervise the implementation, thereby maximizing the benefits of applying them effectively, sustaining high-quality services and facilities, and minimizing waste. As a result, if the tourist is delighted, they will surely come back with family or friends. Supported by the ISO (2025), which states that it provides businesses with a framework for defining, implementing, maintaining, and continually improving their environmental performance, enabling them to manage their environmental responsibilities more efficiently and sustainably. The concept of green or greening in EMS aligns with the sustainable development goals of ISO 14001. Awalludin and Aripin (2023) state that the adoption of EMS by accommodation management is aimed at improving waste management, water conservation, and energy conservation. So, this means that the more the accommodation in Sagada applies green, sustainable practices, the more they would help in environmental conservation, which can be directly affected by how the three (3) dimensions are adopted.

## Conclusion

The study contributes to the body of knowledge on green sustainable practices in the accommodation sector by demonstrating that remote areas like Sagada, Mountain Province, in the Philippines, can demonstrate a high level of awareness and a substantial extent of application of these practices, particularly in waste management, energy conservation, and water conservation. The findings highlighted that awareness initiatives are an important factor in reinforcing the role of knowledge and information in promoting green, sustainable practices. However, the study also reveals that a high level of awareness does not guarantee extensive application, as infrastructure, limited technical knowledge, insufficient water sources, available water reserves, and hygiene concerns influence the extent to which these green, sustainable practices are applied. The findings highlight the importance of external support, such as government units, to strengthen and further enhance the awareness and implementation of green practices. The study also highlights practical implications for owners, managers, and supervisors to continue strengthening the application of environmental sustainability initiatives in their daily operations. Moreover, the study revealed a strong positive linear relationship between awareness and application in the accommodation sector.

Furthermore, the study provides a foundation for future research by highlighting the importance of examining other factors influencing the application of green, sustainable practices. Future studies may also explore other locations or use different research approaches to delve deeper into sustainability practices in the accommodation sector.

Therefore, the study affirms that increasing awareness, strengthening government and institutional support, and addressing the factors that limit the application of green, sustainable practices are essential to advancing the environmental sustainability of the accommodation sector.

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## Conflict of Interests

The researcher declares that he has no conflicts of interest.

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