

# Environmental practices, service quality, and behavioral intention of DOT accredited hotels in CALABARZON: Basis for eco-driven hotel framework

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## Abstract

This study is among the first to explain the relationships between hotels environmental practices and service quality to guests' behavioral intention in DOT Accredited hotels in CALABARZON. This study determined the influence of environmental practices and service quality of hotels on guests' behavioral intention. The quantitative descriptive research design with descriptive correlation analysis was used in this study. A total of 405 guests who stayed in the DOT Accredited Hotels in CALABARZON were the respondents. The data collected were tallied and calculated using different statistical measures such as weighted mean, Kruskal-Wallis Test, Mann Whitney Test and Spearman's rho. Female working professionals, tend to be Gen Y and single are majority of the guests who stayed in DOT Accredited hotels in CALABARZON. The environmental practices and service quality of these hotels are evident in their daily operations. Moreover, the respondents expressed their behavioral intentions to visit these hotels again in the future. There are significant differences on the responses when grouped according to profile and this study confirmed that there is high significant relationship between environmental practices, service quality of DOT Accredited hotels in CALABARZON and guests' behavioral intention. The findings of this study contribute to the enrichment of the hospitality and tourism literature related to hotels environmental practices. A proposed eco-driven hotel framework is developed for the hotels in CALABARZON. The hotels in CALABARZON may find this framework useful in streamlining and enhancing their hotel operations while also assuring guests of a more environmentally responsible stay.

**Keywords:** behavioral intention, environmental practices, hotels, service quality, sustainability

## **Environmental practices, service quality, and behavioral intention of DOT accredited hotels in CALABARZON: Basis for eco-driven hotel framework**

### **1. Introduction**

There is a growing global interest in implanting environmentally friendly practices that is evident now in the hospitality industry. This shift has caused a transformation in the way hotels operate, with an emphasis on both economic sustainability and environmental consciousness. Many prominent hotels worldwide have started adopting new business models and sustainable practices with a focus on environmental sustainability. There is a global trend where more hotel establishments are embracing sustainable initiatives, while customers are increasingly seeking eco-friendly accommodations to minimize their environmental impact. For instance, a survey conducted in 2023 by Pulse Asia revealed that 83% of Filipinos prefer environmentally friendly products and services offered by brands with eco-friendly operations (Albano, 2023). Furthermore, the hotel industry in the Philippines, particularly in CALABARZON, has significantly contributed to the overall economy due to the upsurge in tourism and the industry's commitment to providing top-notch service to its target audience. Notably, CALABARZON is considered the second most economically vibrant region in the Philippines, showcasing substantial growth in tourism, agriculture, and trade. This economic prosperity has led to the hospitality sector in CALABARZON evolving in response to economic development, emerging challenges, and environmental issues.

Based on a comprehensive review, most studies on hotel environmental practices have focused on Western and a few Asian nations (Verma et al., 2018). There has been limited research in the Philippines, particularly concerning hotel environmental standards in the CALABARZON Region. This is intriguing, given the reputation of Filipinos for their environmental consciousness. With the growing significance of the CALABARZON Region's impact on tourism and hospitality, challenges related to sustainable hotel practices and the optimal use of hospitality resources for long-term sustainability persist. The United Nations' 2030 Sustainable Development Goals (SDG) plays an important role in promoting sustainable tourism. Specifically, the SDG 12 helps to promote sustainable practices in consumption and production by encouraging businesses, particularly hotels to reduce waste, consume local and sustainable products as well as energy and water consumption. Additionally, SDG 13 addresses climate change, a critical concern for the hospitality industry, while SDG 8 focuses on sustainable economic growth and measures that promote sustainable tourism. Existing research in the hospitality industry commonly explores hotel environmental practices and service quality's impact on the intention to return to the hotel. Thus, this study aims to bridge these gaps by presenting empirical findings utilizing a framework that integrates environmental practices, service quality, and behavioral intention in the context of DOT Accredited hotels in CALABARZON.

Mbasera et al. (2016) investigated hotels' environmental practices, which included water sustainability, energy conservation, solid waste management, air quality management, environmental purchasing, and community awareness. This research provided the foundation for the current investigation. Furthermore, the current study relied on Lee and Cheng's (2018) Green Lodging Service Quality Scale (GLSERV), which includes six attributes: reliability, empathy, green communication, green energy reduction, assurance, and tangibles. Furthermore, Borbon et al.'s (2022) research on visitor behavioral intentions such as revisit intention, word of mouth, readiness to spend more, and loyalty was incorporated into the theoretical framework. These studies served as the theoretical foundation for research on environmental practices, service quality, and intent to return at CALABARZON's DOT Accredited hotels. Notably, the hotel industry has embraced environmentally friendly dimensions in policy and strategy to deliver quality service and positive customer experiences (Kim et al., 2016). Consequently, hotels must continue to uphold environmentally friendly practices while ensuring service quality to influence guests' behavioral intentions (Bruns-Smith et al., 2015).

Although earlier research has looked into hotel environmental practices, there has been little emphasis on the factors that influence environmental practices, service quality, and behavioral intention. Thus, the primary goal of this research is to investigate the impact of environmental practices and service quality at DOT Accredited Hotels in CALABARZON on visitor behavioral intentions. Creating an environmentally friendly program is crucial due to the significant influence of customers. Customers are increasingly choosing to interact with organizations and goods that are less detrimental to the environment, demonstrating increased intelligence and environmental awareness. The quality and impression of hotels with environmentally friendly measures can influence tourist loyalty and behavioral intentions (Ka & Lai, 2019).

The study is timely and aims to provide insights that can further the environmental initiatives of the hotels in CALABARZON and the wider country. Guests expect hotels to offer the same comfort as their homes. Therefore, it is crucial for hotels to focus on strategic management and sustainable practices to deliver quality services to their guests. The researcher wants to create an eco-friendly hotel framework for hotels in CALABARZON. The study also investigates how hotel industry stakeholders, particularly customers, are motivated to support existing environmental measures and hotel service quality in order to promote environmental sustainability. The outcomes of this study help to expand the hospitality and tourism literature on hotel environmental practices. Furthermore, this study provides a new perspective for researchers investigating environmental practices of hotels, particularly in non-western countries like the Philippines, and offers new insights on service quality dimensions of DOT Accredited hotels in CALABARZON that influence guests' behavioral intentions. Importantly, the practical implication is that the study can be used as a reference for hotel leaders and managers to maximize policies, planning, and decision-making to increase revenues by adopting environmental practices and attracting more guests. Additionally, this study offers significant managerial implications for the development of an Eco-Driven Hotel Framework, revealing opportunities for hotels to enhance environmental sustainability without compromising service quality, thereby fostering positive behavioral intentions among guests. Hotels can use these insights to strategically implement eco-friendly initiatives in alignment with guests' preferences for environmentally responsible choices, establishing a competitive advantage and positioning themselves as leaders in sustainable hospitality within CALABARZON.

The suggested framework from this study may assist CALABARZON hotels in optimizing and improving their operations while assuring clients of a more environmentally friendly stay. With the increasing global awareness of environmentalism, there is a growing demand for environmentally friendly products and services, encouraging customers to favor hotels with strong environmental commitments. Therefore, the proposed eco-driven hotel framework can be utilized by hotels to improve their environmental practices, reinforcing their environmental commitments and fostering positive views and images for the hotel, as well as satisfied and loyal customers. Moreover, hotels can utilize consumer concerns about environmental issues to position their brands in new markets and gain new competitive advantages.

**Objectives of the study** - This study determined the influence of environmental practices and service quality of DOT Accredited Hotels in CALABARZON on guests' behavioral intention. Specifically, it determined the environmental practices of DOT Accredited Hotels in CALABARZON in terms of sustainable management of water, energy conservation, solid waste management, air quality management, environmental purchasing, and community awareness; assessed the service quality in terms of reliability, empathy, green communication, green energy reduction, assurance, and tangibles; determined the guests' behavioral intention in terms of revisit intention, word of mouth, willingness to pay more, and loyalty; tested the significant relationship of the given variables; and proposed an eco-driven hotel framework.

## 2. Methods

**Research Design** - The quantitative descriptive research design which utilized descriptive correlation analysis was used to collect necessary data and describe two or more variables and their relationships. Quantitative descriptive correlational design is a non-experimental quantitative design in which the researcher

applies correlational statistics to measure and describe the degree of association among variables or sets of scores (Creswell, 2012). They attempt to find relationships between the characteristics of the respondents and their reported behaviors and opinions. The purpose of using this research method was to look into the relationship between environmental practices, service quality at DOT Accredited Hotels in CALABARZON, and guest behavioral intentions.

**Participants** - The respondents were guests who stayed in the DOT Accredited Hotels in CALABARZON. The study was conducted in Region 4-A CALABARZON and used data from the Department of Tourism Region 4-A CALABARZON, which provided the most recent list of DOT Accredited hotels. This accreditation is a formal certification issued by the Department of Tourism confirming that a tourism enterprise, such as a hotel, meets the requirements for providing tourism facilities and services. In the initial phase of the sampling process, the researcher initially sought the specific number of guest arrivals at each hotel in DOT 4-A. However, only combined visitor arrival data by province was provided, not data particular to DOT Accredited hotels in the region. The Provincial Tourism Office assisted the researcher in obtaining particular guest arrival information by hotel.

A selection of 36 hotels was made based on a thorough assessment of the region's hotel landscape. These hotels were chosen because of their accreditation by the Department of Tourism (DOT), ensuring they meet standardized quality levels and adhere to industry standards. The DOT accreditation serves as a reliable criterion for selecting hotels committed to meeting regulatory requirements and providing a certain standard of service. The inclusion of these establishments increases the study's generalizability, offering a more thorough knowledge of how environmental practices, service quality, and behavioral intentions connect in various types of DOT Accredited hotels in the region. Among the 36 selected DOT accredited hotels in CALABARZON, 14 are in Cavite, 4 in Laguna, 9 in Batangas, 4 in Rizal, and 5 in Quezon Province. Based on the data, a sample size of 405 respondents was established using Raosoft, from the total population of 16,341. Participants needed to have stayed in a DOT Accredited hotel in CALABARZON over the previous 12 months to qualify for the survey. To avoid confusion, the researcher provided a comprehensive pull-down list of all DOT Accredited hotels in CALABARZON. Respondents were only permitted to continue with the survey if they had stayed at any of the DOT Accredited hotels included in the list.

**Instrument** - A modified questionnaire was utilized to align with the parameters of the study in the current research location. The survey variables were gauged using items sourced from a review of relevant literature. The questionnaire was structured into five parts. The initial part included an introduction, an informed consent form outlining the survey's purpose and instructions, as well as qualifying questions for respondents. The second part focused on obtaining the demographic profile of the respondents, drawing from a study by Lee and Cheng (2018). The third and fourth parts comprised sub-variables pertaining to environmental practices of DOT Accredited Hotels and service quality of hotels, respectively, which were adopted from studies by Mbasera et al. (2016) and Lee and Cheng (2018). The final part encompassed sub-variables determining the behavioral intention of guests, sourced from the study by Borbon et al. (2022). A 5-point Likert scale was employed for all the questionnaire items. The questionnaire was refined through face validation with the research adviser and an expert panel assessment by hotel and tourist industry executives and academics. This review focused on content validity. In addition, a pilot test was done with thirty guests who stayed in DOT-accredited hotels in Metro Manila to determine the questionnaire's validity and reliability. Cronbach's Alpha reliability data showed that the questionnaire exceeded the desired value of 0.7. However, several items were changed to increase their validity and reliability. The three core variables—environmental practices, service quality, and behavioral intention—had Cronbach alpha values of 0.975, 0.980, and 0.982, respectively, indicating that the questionnaire was valid and reliable for general use.

**Data Gathering Procedure** - The researcher obtained permission to gather data from the Dean of the Lyceum of the Philippines University - Batangas Graduate School. Following that, an endorsement letter from the Department of Tourism (DOT), Region IV-A CALABARZON, was requested to provide validity and support

for the study. This document not only acted as official acknowledgement, but it also provided access to a list of DOT Accredited hotels in CALABARZON. Permission letters were also sent to the General Managers of DOT Accredited Hotels in CALABARZON, permitting the distribution of survey questionnaires to its visitors.

After the necessary approval from the hotels, a combination of traditional survey methods and modern technology, including QR codes and Google Forms and survey questionnaires were utilized to ensure efficiency and convenience in the data gathering. Initially, a comprehensive survey instrument was developed, incorporating validated scales for assessing environmental practices, service quality, and behavioral intention within the context of hotel operations. The survey was then converted into an electronic format using Google Forms, enabling easy accessibility and data management. To facilitate participant engagement and streamline the data collection process, each participating hotel received a unique QR code linked to the Google Forms survey. This QR code was strategically placed in prominent areas within the hotels, such as the reception or management office, allowing the hotel guests to conveniently access the survey using their smartphones or other devices. Simultaneously, physical survey questionnaires were distributed personally by the researcher to hotels that preferred a traditional response method. To enhance the response rate, follow-up communications were facilitated through emails and phone calls. Additionally, personalized assistance was provided to address any queries hotels may have had during the survey process. This approach, integrating both electronic and traditional survey tools, was crucial in obtaining a diverse and comprehensive dataset from the 36 selected DOT Accredited hotels in CALABARZON. To maintain ethical standards, participants were fully informed of the study's objectives and contents. The collected questionnaires were thoroughly checked to verify that all questions were addressed. After data collecting was complete, the survey results were compiled and analyzed.

**Data Analysis** - Several statistical methods were used to collect, evaluate, and summarize the data. The study used weighted mean and ranking to evaluate environmental practices, service quality, and guest behavioral intents at DOT-accredited hotels in CALABARZON. Spearman's rho was employed to examine the relationships between the study's important variables.

**Ethical Considerations** - In order to prioritize confidentiality, the study refrained from mentioning specific hotel names. The identity of the respondents, who were hotel guests, was also kept confidential. The researcher presented only the data-based information and results, without expressing personal opinions. The confidentiality of the research participants was ensured, and each participant provided complete agreement prior to the study. Prior to performing the study, necessary approvals were obtained, and privacy precautions were strictly enforced in compliance with the Data Privacy Act of 2012. The study affirmed the ethical responsibility to recognize and respect the rights of research participants. Human rights that must be maintained in research include the right to self-determination, privacy, anonymity, and secrecy, fair treatment, and protection from discomfort and injury. These five human rights ideas serve as the foundation for the ethical issues in this study.

### 3. Results & discussion

**Table 1**

*Summary Table on Environmental Practices*

| Indicators                         | Weighted Mean | Verbal Interpretation | Rank |
|------------------------------------|---------------|-----------------------|------|
| 1. Sustainable Management of Water | 4.36          | Agree                 | 3.5  |
| 2. Energy Conservation             | 4.28          | Agree                 | 6    |
| 3. Solid Waste Management          | 4.47          | Agree                 | 1    |
| 4. Air Quality Management          | 4.44          | Agree                 | 2    |
| 5. Environmental Purchasing        | 4.34          | Agree                 | 5    |
| 6. Community Awareness             | 4.36          | Agree                 | 3.5  |
| Composite Mean                     | 4.38          | Agree                 |      |

*Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49 = Agree; 2.50 – 3.49 = Moderately Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree*

Table 1 reveals that the composite mean of responses to environmental practices was 4.38, showing that respondents generally agreed on the sustainability practices of DOT Accredited Hotels in CALABARZON. The

results indicate that the highest weighted mean was for solid waste management at 4.47, followed by air quality management at 4.44, and sustainable management of water and community at 4.36. Evidently, the majority of respondents prioritize solid waste management among the environmental practices implemented in the DOT Accredited hotels in CALABARZON.

Clients are extremely satisfied with the provision of solid waste management in hotels. Hoteliers rely on client satisfaction to drive repeat business and positive feedback. Understanding the factors that influence guest satisfaction allows hotels to tailor their offerings and marketing strategies accordingly. Furthermore, hotels can use solid waste management to attract and retain guests, therefore a lack of such practices may cause guest dissatisfaction. Chaabane, Nassour, and Nelles (2018) state that effective solid waste management can be a solution to improve the hotel sector, with around 30% of hotel solid waste being potentially reusable, recyclable, or recoverable.

The survey found that environmental purchasing had a weighted mean of 4.34, while energy conservation had a lowest weighted mean of 4.28. This indicates generally positive agreement among respondents regarding energy conservation practices in hotels. While respondents generally support energy conservation efforts, other environmental practices were viewed more positively or considered more impactful. While there's a positive perception of energy conservation efforts in DOT Accredited hotels in CALABARZON, other environmental practices garnered higher levels of agreement and were considered more significant by the respondents. While energy conservation remains vital for sustainability, other practices may be viewed as higher priorities.

**Table 2**

*Summary Table on Service Quality*

| Indicators                | Weighted Mean | Verbal Interpretation | Rank |
|---------------------------|---------------|-----------------------|------|
| 1. Reliability            | 4.49          | Agree                 | 2    |
| 2. Empathy                | 4.51          | Strongly Agree        | 1    |
| 3. Green Communication    | 4.42          | Agree                 | 3.5  |
| 4. Green Energy Reduction | 4.36          | Agree                 | 6    |
| 5. Assurance              | 4.42          | Agree                 | 3.5  |
| 6. Tangibles              | 4.41          | Agree                 | 5    |
| Composite Mean            | 4.44          | Agree                 |      |

*Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49 = Agree; 2.50 – 3.49 = Moderately Agree; 1.50 – 2.49 = Disagree; 1.00 - 1.49 = Strongly Disagree*

Table 2 summarizes the results for service quality, with a composite mean of 4.44. The majority of respondents agreed that DOT-accredited hotels in CALABARZON provided good service. The findings show that the majority of respondents strongly agreed with the feature of empathy, which had the highest weighted mean score of 4.51. Following that, reliability received the second-highest score with a weighted mean of 4.49, while green communication and assurance finished third with weighted means of 4.42 each. This indicates that the majority of respondents agreed that DOT-accredited hotels and personnel in CALABARZON shown empathy throughout their clients' visits, resulting in personalised care and attention.

Majority of respondents have a positive view of the service quality of DOT Accredited hotels in CALABARZON. Additionally, it specifically emphasizes that the aspect of empathy garnered the highest level of agreement, indicating that guests perceived this particular aspect of service quality to be particularly strong in the hotels. This indicates that respondents strongly believed that hotels in CALABARZON succeed at offering empathic service, which is a positive finding because empathy is an important part of customer service, suggesting that the hotels are responsive to their guests' needs and worries.

Empathy refers to an employee's ability to understand their clients' concerns, act in their best interests, and respect them as individuals. It also requires that the company's operating hours be reasonable (Al-Ababneh et al., 2018). Leninkumar (2016) explored the link between service quality and client loyalty and discovered that empathy has a favorable and significant impact on loyalty. Furthermore, hotels may significantly increase client pleasure and loyalty by improving their empathy skills, making empathy one of the most important aspects of

service excellence. Empathy significantly influenced consumer loyalty in the healthcare industry (Siripipatthanakul and Nyen Vui, 2021).

Among the service quality indicators of CALABARZON's DOT accredited hotels, green energy reduction had the lowest weighted mean of 4.36, while tangibles had a higher mean of 4.41. This shows that green energy reduction was less important to the majority of hotel clients than other aspects of service quality. The lower mean score for green energy reduction suggests that it did not perform as well as the other service quality dimensions. Although the weighted mean remains reasonably positive, it suggests that respondents generally agreed or were satisfied with green energy reduction initiatives, albeit not to the same level as with other service quality factors. The data suggests that green energy reduction requires attention and improvement within the context of service quality at DOT Accredited hotels in CALABARZON, and addressing this can lead to a more balanced and enhanced service quality across all dimensions.

When it comes to implementing energy-saving measures, hoteliers might take a reactive or proactive approach. The reactive technique requires hotels to implement energy-saving measures in reaction to external constraints imposed by stakeholders, such as licensing or regulatory requirements. In contrast, the proactive strategy goes beyond regulatory compliance and typical industrial practices, stressing innovative issue solving and close collaboration with a wide range of stakeholders (Jiang et al., 2021).

**Table 3**

*Summary Table on Behavioral Intention*

| Indicators                 | Weighted Mean | Verbal Interpretation | Rank |
|----------------------------|---------------|-----------------------|------|
| 1. Revisit Intention       | 4.33          | Agree                 | 2    |
| 2. Word of Mouth           | 4.41          | Agree                 | 1    |
| 3. Willingness to Pay More | 4.24          | Agree                 | 3    |
| 4. Loyalty                 | 4.16          | Agree                 | 4    |
| Composite Mean             | 4.28          | Agree                 |      |

*Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49 = Agree; 2.50 – 3.49 = Moderately Agree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree*

Table 3 summarizes the responses addressing the behavioral intents of guests staying in DOT Accredited Hotels in CALABARZON, with a composite mean of 4.28 indicating that the majority of respondents agreed with the guests' behavioral goals. The vast majority of guests expect to return, recommend the hotels to others, and pay more for their services, demonstrating their loyalty to DOT Accredited hotels. This data shows that DOT Accredited hotels in CALABARZON offer a high-quality experience to its guests. Word of mouth had the highest weighted average of 4.41, followed by revisit intention (4.33). This suggests that guests value word-of-mouth and are more likely to recommend DOT Accredited CALABARZON to others. This is fantastic news for the region's hospitality industry, as word-of-mouth marketing is a powerful tool for attracting new clients.

Word-of-mouth (WOM) is described as informal interpersonal communication about a brand, product, organization, or service that influences client decisions (Moise et al., 2018). Other consumers' perspectives are considered as more objective sources of information, and their recommendations can help to minimize uncertainty in purchasing decisions. Family, friends, and acquaintances frequently share their brand experiences. As a result, word of mouth develops when customers have strong feelings about their interactions with a provider and choose to share them with others. According to study, environmental initiatives including energy-saving lighting, soap and shampoo dispensers, and recycling policies have a direct and positive impact on hotel guests' WOM.

The findings also indicate that the weighted mean for willingness to pay more was 4.24, whereas loyalty had the lowest weighted mean of 4.16 among the behavioral intention components. This shows that clients are less likely to be loyal to DOT Accredited hotels in CALABARZON, despite their inclination to return, refer, and pay more for their services. The low weighted mean for loyalty among DOT Accredited hotels in CALABARZON indicates an area that needs to be addressed and improved in order to boost customer loyalty and so contribute to

the region's long-term growth. Furthermore, Moise et al. (2018) state that in competitive situations such as the tourism industry, loyalty is a major objective for businesses like hotels. Loyalty is seen as a strategic goal because it promotes the expansion of service businesses. In the study of consumer behavior, loyalty is defined as a positive attitude toward a service provider that results in repeat purchases.

**Table 4***Relationship Between Environmental Practice and Service Quality*

| Sustainable Management of Water | rho    | p-value | Interpretation     |
|---------------------------------|--------|---------|--------------------|
| Reliability                     | .722** | 0.000   | Highly Significant |
| Empathy                         | .709** | 0.000   | Highly Significant |
| Green Communication             | .703** | 0.000   | Highly Significant |
| Green Energy Reduction          | .739** | 0.000   | Highly Significant |
| Assurance                       | .723** | 0.000   | Highly Significant |
| Tangibles                       | .698** | 0.000   | Highly Significant |
| <b>Energy Conservation</b>      |        |         |                    |
| Reliability                     | .700** | 0.000   | Highly Significant |
| Empathy                         | .696** | 0.000   | Highly Significant |
| Green Communication             | .731** | 0.000   | Highly Significant |
| Green Energy Reduction          | .780** | 0.000   | Highly Significant |
| Assurance                       | .735** | 0.000   | Highly Significant |
| Tangibles                       | .685** | 0.000   | Highly Significant |
| <b>Solid Waste Management</b>   |        |         |                    |
| Reliability                     | .809** | 0.000   | Highly Significant |
| Empathy                         | .788** | 0.000   | Highly Significant |
| Green Communication             | .770** | 0.000   | Highly Significant |
| Green Energy Reduction          | .776** | 0.000   | Highly Significant |
| Assurance                       | .753** | 0.000   | Highly Significant |
| Tangibles                       | .793** | 0.000   | Highly Significant |
| <b>Air Quality Management</b>   |        |         |                    |
| Reliability                     | .764** | 0.000   | Highly Significant |
| Empathy                         | .777** | 0.000   | Highly Significant |
| Green Communication             | .782** | 0.000   | Highly Significant |
| Green Energy Reduction          | .801** | 0.000   | Highly Significant |
| Assurance                       | .772** | 0.000   | Highly Significant |
| Tangibles                       | .754** | 0.000   | Highly Significant |
| <b>Environmental Purchasing</b> |        |         |                    |
| Reliability                     | .773** | 0.000   | Highly Significant |
| Empathy                         | .741** | 0.000   | Highly Significant |
| Green Communication             | .738** | 0.000   | Highly Significant |
| Green Energy Reduction          | .770** | 0.000   | Highly Significant |
| Assurance                       | .755** | 0.000   | Highly Significant |
| Tangibles                       | .739** | 0.000   | Highly Significant |
| <b>Community Awareness</b>      |        |         |                    |
| Reliability                     | .777** | 0.000   | Highly Significant |
| Empathy                         | .748** | 0.000   | Highly Significant |
| Green Communication             | .762** | 0.000   | Highly Significant |
| Green Energy Reduction          | .806** | 0.000   | Highly Significant |
| Assurance                       | .776** | 0.000   | Highly Significant |
| Tangibles                       | .781** | 0.000   | Highly Significant |

Legend: Significant at  $p\text{-value} < 0.05$

As shown in Table 4, there is high significant relationship between hotels environmental practices on sustainable management of water, energy conservation, solid waste management, air quality management, environmental purchasing, and community awareness, and hotels service quality on reliability, empathy, green communication, green energy reduction, assurance and tangibles since the computed rho-values indicates a strong direct correlation and the resulted p-values were less than the alpha level. This means that there is a strong association between environmental practices and service quality of DOT Accredited hotels in CALABARZON. Thus, it implies that the better the environmental practices, the better is the service quality.

In this regard, actions such as informing guests about linen and towel changes, promptly repairing leaks in guestrooms, installing water-saving showers and faucets, promoting water conservation campaigns, and using



water-saving devices demonstrate the significant relationship between hotels' sustainable water management and various aspects of service quality, such as reliability, empathy, green communication, energy reduction, assurance, and tangibles. Many hotels have adopted such environmental practices not only to benefit local communities and enhance employee well-being but also to contribute to environmental conservation (Moise et al., 2018). It is vital to emphasize that guests and tourists require water not only for their fundamental needs, but also for leisure and recreational activities.

Similarly, the significant relationship between energy conservation in hotels and service quality attributes is evident in practices such as using key cards in guestrooms, employing energy-efficient lighting, maximizing natural light usage, encouraging guests to save energy, utilizing natural light to reduce energy consumption, and ensuring well-ventilated rooms to reduce the reliance on air conditioning.

In the same instance, but the strong correlation between how hotels manage solid waste and the factors of reliability, empathy, green communication, green energy reduction, assurance, and tangibles is evident through visible signs such as No Smoking and No Littering, consistent cleanliness maintenance, ample and strategically placed waste bins, daily collection of waste from guest rooms, proper labeling of waste bins, guest reminders about waste management, and the use of reusables. Data shows a strong relationship between air quality management in hotels and variables such as dependability, empathy, green communication, green energy reduction, assurance, and tangibles. This connection is evident through designated smoking and non-smoking areas, clean and smoke-free air quality, presence of indoor plants to improve air quality, provisions for outdoor seating, and efforts to reduce pollution and promote public transport or cycling. Eco-friendly guestroom amenities, such as refillable bulk dispensers for soap and shampoo to reduce waste, the use of recycled materials, locally sourced and organic food, and biodegradable packaging, demonstrate a strong link between environmental purchasing practices in hotels and factors such as dependability, empathy, green communication, energy reduction, assurance, and tangibles. Travelers who want to limit their environmental impact are increasingly seeking out ecologically friendly or eco-friendly hotels (Lee et al., 2019).

Strong relationship between hotels' community awareness efforts and factors such as dependability, empathy, green communication, green energy reduction, assurance, and tangibles is reflected in visible environmental initiatives communicated to guests, the distribution of green information via bulletins and other materials, and the posting of corporate social responsibility (CSR) programs on websites and social media platforms. According to Acampora et al. (2022), as customer demand for eco-friendly products develops, hotels are undertaking a number of sustainability initiatives to decrease their environmental effect, as well as developing more efficient ways to convey their efforts to consumers.

As shown in Table 5, there is high significant relationship between hotels environmental practices on sustainable management of water, energy conservation, solid waste management, air quality management, environmental purchasing, and community awareness and guests behavioral intention on revisit intention, word of mouth, willingness to pay more, and loyalty since the computed rho-values indicates a strong direct correlation and the resulted p-values were less than the alpha level. This means that there was significant relationship between the environmental practices of DOT Accredited hotels in CALABARZON and guests behavioral intention. Thus, it implies that the better the environmental practices, the better is the respondents behavioral intentions. Furthermore, the study discovered a strong correlation between sustainable water management in hotels and guests' behavioral intentions, including repeat visits, word-of-mouth, readiness to spend more, and loyalty. Notifying guests about linen and towel changes, detecting and fixing leaks in guestrooms, promoting water conservation, and using water-saving technologies have all been proved to increase guest satisfaction and loyalty. Moise et al. (2018) has shown that hotel environmental practices, such as sustainable water management, influence guest satisfaction and loyalty, resulting in word-of-mouth recommendations.

Moreover, the study discovered a significant relationship between hotel energy conservation initiatives and tourist behavioral intentions. Initiatives such as using key cards in guestrooms, installing energy-efficient

lighting, encouraging energy-saving behaviours, and maximising natural light all boost guest satisfaction and retention. According to Thai and Nguyen's (2022) research, consumer pleasure acts as a link between environmental behaviors and customer intent to return.

**Table 5***Relationship Between Environmental Practice and Behavioral Intention*

| Sustainable Management of Water | rho    | p-value | Interpretation     |
|---------------------------------|--------|---------|--------------------|
| Revisit Intention               | .678** | 0.000   | Highly Significant |
| Word of Mouth                   | .656** | 0.000   | Highly Significant |
| Willingness to Pay More         | .697** | 0.000   | Highly Significant |
| Loyalty                         | .707** | 0.000   | Highly Significant |
| <b>Energy Conservation</b>      |        |         |                    |
| Revisit Intention               | .691** | 0.000   | Highly Significant |
| Word of Mouth                   | .689** | 0.000   | Highly Significant |
| Willingness to Pay More         | .694** | 0.000   | Highly Significant |
| Loyalty                         | .719** | 0.000   | Highly Significant |
| <b>Solid Waste Management</b>   |        |         |                    |
| Revisit Intention               | .744** | 0.000   | Highly Significant |
| Word of Mouth                   | .745** | 0.000   | Highly Significant |
| Willingness to Pay More         | .719** | 0.000   | Highly Significant |
| Loyalty                         | .739** | 0.000   | Highly Significant |
| <b>Air Quality Management</b>   |        |         |                    |
| Revisit Intention               | .722** | 0.000   | Highly Significant |
| Word of Mouth                   | .687** | 0.000   | Highly Significant |
| Willingness to Pay More         | .677** | 0.000   | Highly Significant |
| Loyalty                         | .688** | 0.000   | Highly Significant |
| <b>Environmental Purchasing</b> |        |         |                    |
| Revisit Intention               | .698** | 0.000   | Highly Significant |
| Word of Mouth                   | .729** | 0.000   | Highly Significant |
| Willingness to Pay More         | .723** | 0.000   | Highly Significant |
| Loyalty                         | .743** | 0.000   | Highly Significant |
| <b>Community Awareness</b>      |        |         |                    |
| Revisit Intention               | .742** | 0.000   | Highly Significant |
| Word of Mouth                   | .725** | 0.000   | Highly Significant |
| Willingness to Pay More         | .706** | 0.000   | Highly Significant |
| Loyalty                         | .744** | 0.000   | Highly Significant |

Legend: Significant at  $p$ -value < 0.05

The study discovered a substantial relationship between hotel air quality management and consumer intent to return, word-of-mouth advertising, increased propensity to spend, and loyalty. This is evident in hotels with designated smoking and non-smoking areas, clean air free of smoke and dust, natural plants in guest rooms to improve indoor air quality, outdoor sitting for visitors, and the promotion of public transportation or bicycles to minimize pollution and traffic congestion. These findings are consistent with those of Abdou et al. (2022), who demonstrated that environmentally friendly practices, such as air quality control, increase customer revisit intentions and purchase behavior.

The study also found a strong link between hotels' ecologically friendly purchasing habits and visitors' inclinations to return, word of mouth promotion, greater willingness to spend, and loyalty. This is evident in guestroom amenities like refillable bulk dispensers for soaps and shampoos to reduce waste, the use of recycled eco-friendly supplies and materials, incorporation of locally produced and grown food, and the use of biodegradable packaging and reusable food containers for takeout and deliveries. Rawashdeh et al. (2021) showed a positive correlation between these environmentally friendly practices and tourists' attitudes and hotel stays.

Finally, the study discovered a significant relationship between hotel community awareness initiatives and tourist intent to return, word-of-mouth advertising, increased readiness to pay, and loyalty. These efforts are reflected in the hotel's involvement in community environmental initiatives and engagement with local stakeholders. Ban et al. (2022) studied the value and satisfaction of hotel costs using community awareness initiatives.

**Table 6***Relationship Between Service Quality and Behavioral Intention*

| Reliability                   | rho    | p-value | Interpretation     |
|-------------------------------|--------|---------|--------------------|
| Revisit Intention             | .754** | 0.000   | Highly Significant |
| Word of Mouth                 | .780** | 0.000   | Highly Significant |
| Willingness to Pay More       | .762** | 0.000   | Highly Significant |
| Loyalty                       | .768** | 0.000   | Highly Significant |
| <b>Empathy</b>                |        |         |                    |
| Revisit Intention             | .749** | 0.000   | Highly Significant |
| Word of Mouth                 | .735** | 0.000   | Highly Significant |
| Willingness to Pay More       | .689** | 0.000   | Highly Significant |
| Loyalty                       | .708** | 0.000   | Highly Significant |
| <b>Green Communication</b>    |        |         |                    |
| Revisit Intention             | .763** | 0.000   | Highly Significant |
| Word of Mouth                 | .747** | 0.000   | Highly Significant |
| Willingness to Pay More       | .754** | 0.000   | Highly Significant |
| Loyalty                       | .751** | 0.000   | Highly Significant |
| <b>Green Energy Reduction</b> |        |         |                    |
| Revisit Intention             | .786** | 0.000   | Highly Significant |
| Word of Mouth                 | .777** | 0.000   | Highly Significant |
| Willingness to Pay More       | .783** | 0.000   | Highly Significant |
| Loyalty                       | .777** | 0.000   | Highly Significant |
| <b>Assurance</b>              |        |         |                    |
| Revisit Intention             | .751** | 0.000   | Highly Significant |
| Word of Mouth                 | .745** | 0.000   | Highly Significant |
| Willingness to Pay More       | .758** | 0.000   | Highly Significant |
| Loyalty                       | .746** | 0.000   | Highly Significant |
| <b>Tangibles</b>              |        |         |                    |
| Revisit Intention             | .719** | 0.000   | Highly Significant |
| Word of Mouth                 | .721** | 0.000   | Highly Significant |
| Willingness to Pay More       | .702** | 0.000   | Highly Significant |
| Loyalty                       | .717** | 0.000   | Highly Significant |

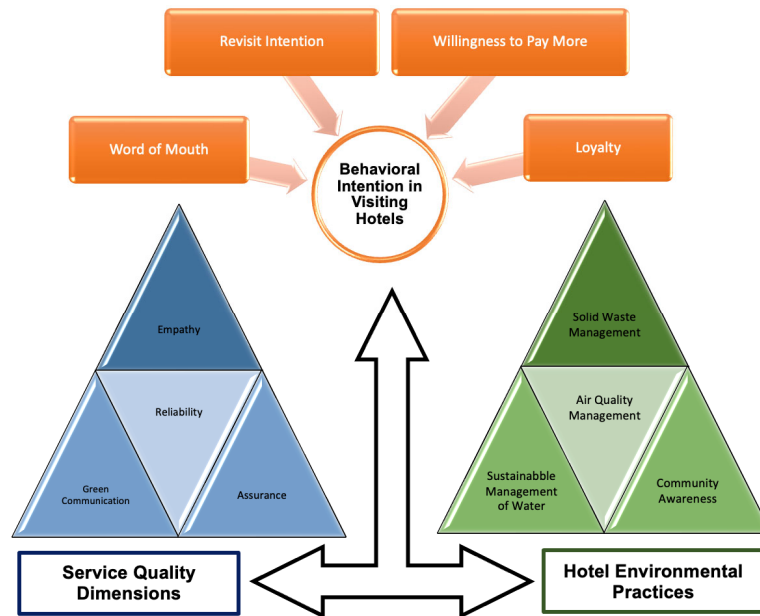
Legend: Significant at  $p\text{-value} < 0.05$

As shown in Table 6, there is high significant relationship between hotels service quality on reliability, empathy, green communication, green energy reduction, assurance, and tangibles and guests behavioral intention on revisit intention, word of mouth, willingness to pay more, and loyalty since the computed rho-values indicates a strong direct correlation and the resulted p-values were less than the alpha level. This means that there was significant relationship between the service quality of DOT Accredited hotels in CALABARZON and guests behavioral intention. Thus, it implies that the better the service quality, the better is the respondents behavioral intentions.

The study found that reliability, which includes staff responsiveness, prompt services, and energy-saving initiatives, significantly influences guests' revisit intentions. This underscores the significance of persuading customers to stay in hotels by assuring them of quality services, as positive experiences can lead to repeat visits and positive word of mouth. The study underlines the importance of empathy in shaping guests' behavioral intentions. Empathetic services, addressing visitors' requirements, and promoting environmentally friendly concepts were discovered to be significantly associated with consumer intent to return, word of mouth, readiness to pay more, and loyalty. It highlights the role of hotel employees in providing great service and influencing client satisfaction, hence generating positive word of mouth and long-term customer connections. Similarly, the study indicates a substantial connection between green communication and guests' behavioral intentions, emphasizing the importance of effectively communicating environmental responsibility, such as promoting green consumerism and environmental protection services. These efforts have a favorable impact on hotels' images and influence customers' behavioral intentions, ultimately increasing repeat visits, word of mouth, willingness to spend more, and loyalty. The report also emphasizes the importance of hotels' efforts to promote green initiatives and provide high-quality staff services in improving customer happiness and loyalty (Hamsanandini, 2017).

The table also shows a substantial correlation between green energy reduction and guests' intents to return,

share positive word of mouth, spend more, and be loyal. This relationship is visible in hotels that adopt eco-friendly methods such as energy-saving or LED light bulbs, allowing visitors to reuse sheets and towels, placing water-saving systems in toilets, and incorporating renewable energy designs. Customers are inclined to support hotels that prioritize environmental conservation in their daily operations, which ultimately influences their decision to stay at such establishments (Moise et al., 2018).



**Figure 1.** *Eco-Driven Service Quality & Behavioral Intention Framework (EDSQBI)*

The proposed framework demonstrates how environmental practices and service quality at DOT Accredited hotels in CALABARZON influence guests' behavioral intentions. The framework reveals a significant relationship between environmental practices, service quality, and behavioral intention, with a focus on essential environmental practices such as solid waste management, air quality management, sustainable water management, and community participation. The fundamental service quality features are empathy, reliability, green communication, and assurance, all of which are highly connected with consumers' behavioral intents, such as word of mouth, revisit intention, willingness to pay more, and loyalty.

The study discovered that the environmental practices of DOT-accredited hotels in CALABARZON have a positive impact on service quality, implying that tourists are more inclined to choose a hotel that follows these regulations. As a result, to improve service quality and customer satisfaction, hotels can consider introducing more sustainable practices such as solid waste management, air quality management, sustainable water management, and community awareness. Furthermore, the study found a positive and significant link between hotel service quality metrics and environmental practices. Among the six service quality components, empathy, reliability, green communication, and assurance have the most influence. It should be mentioned that great service quality is important while selecting a hotel. The study also suggests that outstanding service quality increases travelers' inclination to visit hotels with environmentally friendly practices (Ahn & Kwon, 2020). Customers are increasingly choosing ecologically responsible hotels that match their green standards (Lee and Cheng, 2018).

It is known that environmental practices and service quality in Department of Tourism (DOT)-accredited hotels have a direct impact on customers' intents. This influence includes word-of-mouth promotion, return visits, readiness to spend more, and loyalty. The implementation of environmental practices in hotels has a large and beneficial impact on consumer intent to visit, as well as word-of-mouth and purchase intentions. Similarly, customers' behavioral intentions might be influenced by their satisfaction with hotel service quality. The

sustainability of hospitality has an impact on customer pleasure and loyalty, which influences future tourist visits.

This framework could help hotels in CALABARZON optimize and enhance their operations while assuring customers that their stay will be more environmentally friendly. With a significant rise in global environmental awareness, sales of environmentally friendly products and services have increased considerably. As a result, there is a growing customer inclination towards environmentally friendly products and services in hotels. Therefore, utilizing this framework, regional hotels can improve their environmental practices to strengthen their environmental commitments, thereby creating positive perceptions and impressions of the hotel and fostering satisfied and loyal customers. Additionally, hotels can now capitalize on consumer concerns about environmental issues to position their brands in new markets and gain distinct competitive advantages.

#### **4. Conclusion and recommendations**

The commitment of DOT Accredited hotels in CALABARZON to environmental sustainability is evident in their daily operations. They manage water resources, conserve energy, handle solid waste, maintain air quality, practice environmentally friendly purchasing, and raise awareness in the community. The service quality of DOT Accredited hotels in CALABARZON is rated highly, encompassing reliability, empathy, green communication, green energy reduction, assurance, and tangibles. There is high significant relationship between environmental practices, service quality of DOT Accredited hotel in CALABARZON and guests behavioral intention. The relationship of environmental practices and service quality is highly significant which implies that the better the environmental practices, the better is the service quality. The relationship of environmental practices and guests behavioral intention is highly significant also which implies that environmental practices have a direct positive impact on guests behavioral intention. Moreover, the strong direct correlation of service quality and behavioral intention indicates that hotel's ability to provide consistent and accurate service quality increases the customer behavioral intention. A proposed eco-driven hotel framework has been developed for the hotels in CALABARZON. This framework emphasizes important environmental practices and service quality dimensions that directly impact guests' behavioral intentions.

The hotel managers of DOT Accredited hotels in CALABARZON may use the findings of this study to practice target segmentation and design appropriate green marketing campaigns for different generational segments as high potential consumers of the hotels. DOT Accredited hotels in CALABARZON may conduct cost-benefit analysis to identify areas where the hotels can invest in eco-friendly products that would reduce waste and energy consumption; may focus on improving green energy reduction practices; may develop and implement plans to reduce energy consumption in hotels may focus on efforts to improve guest loyalty; may tailor their marketing campaigns to different guest profiles; and may use the proposed eco-driven hotel framework to improve their environmental practices and service quality. Future research may focus on the context of hotel employees awareness and perceptions of hotel's environmental practices in the DOT Accredited hotels in CALABARZON.

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