

# Impact of Sustainable Practices on Guest Satisfaction in Luxury Hotels

A. Arun<sup>1</sup>, Monish R<sup>2</sup>, Rytheesh D<sup>3</sup>, H.M Moyeenudin<sup>4</sup>

<sup>1,4</sup> Assistant Professor, School of Hotel and Catering Management, Vels Institute of Science Technology and Advanced Studies, Pallavaram, Chennai 117.

<sup>2,3</sup> Student, School of Hotel and Catering Management, Vels Institute of Science Technology and Advanced Studies, Pallavaram, Chennai 117.

**Abstract**—The hospitality industry is increasingly embracing sustainability as a strategic approach to enhance brand reputation, operational efficiency, and environmental responsibility. This research paper investigates the impact of sustainable practices on guest satisfaction in luxury hotels, with a specific focus on initiatives such as energy conservation, waste management, and green certifications. As luxury travelers become more environmentally conscious, understanding their perceptions of eco-friendly operations has become critical for competitive advantage. Through a combination of quantitative surveys and qualitative interviews conducted across selected star hotels, the study explores how these green initiatives influence guest experiences, satisfaction levels, and intentions to revisit. The findings reveal that sustainable practices positively contribute to overall guest satisfaction, particularly when aligned with service quality and transparent communication. The study concludes that integrating visible and guest-involved eco-initiatives can enhance brand loyalty without compromising luxury standards. Recommendations are provided for hotel managers to effectively implement and market their sustainability efforts to elevate guest engagement and long-term profitability.

**Index Terms**—Guest Satisfaction; Hotels; Impact; Luxury; Sustainability

## I INTRODUCTION

Sustainability has become a defining theme in the global hospitality industry, with growing awareness among consumers and businesses about the importance of environmentally responsible practices.[1] Luxury hotels, traditionally associated with indulgence and extravagance, are now integrating eco-friendly initiatives into their

operations to align with contemporary expectations. These practices range from energy conservation and water-saving technologies to waste reduction, the use of biodegradable products, and obtaining recognized green certifications.[2] As the demand for responsible travel grows, luxury hotels face the dual challenge of maintaining high service standards while adopting sustainable operations. This research explores the influence of these green initiatives on guest satisfaction, particularly in luxury accommodations where quality expectations are exceptionally high.[3] Sustainable practices are increasingly prevalent in luxury hotels across the globe. High-end hospitality brands have launched wide-ranging sustainability programs that address environmental impact while enhancing corporate social responsibility.[4] These efforts often include installing LED lighting, using energy-efficient HVAC systems, implementing comprehensive waste management, sourcing food locally, and promoting linen reuse programs. Many luxury hotels are also acquiring certifications like LEED (Leadership in Energy and Environmental Design) and Earth Check to showcase their commitment. In response, guests are gradually becoming more conscious of these efforts, especially as sustainability is often highlighted in promotional materials and during the guest experience.[5] The implementation of sustainable practices has shown a positive impact on guest satisfaction in many cases. Guests, particularly from environmentally aware segments, appreciate efforts that reduce environmental impact without compromising comfort. [6] Practices such as organic in-room amenities, digital check-ins, and green building designs contribute to an enhanced perception of brand responsibility. When well-

communicated, such initiatives can lead to increased guest loyalty, positive word-of-mouth marketing, and repeat business. However, the impact varies depending on guest awareness, cultural values, and how effectively the sustainability measures are integrated into the overall service delivery. A luxurious experience that incorporates eco-friendliness tends to be viewed as more meaningful and ethically satisfying by modern travellers.[7]

Despite the benefits, luxury hotels face several challenges in implementing sustainable practices. One major obstacle is the perceived conflict between environmental efficiency and luxurious comfort. Guests who are unaware or indifferent to green practices may misinterpret them as cost-cutting measures rather than quality enhancements.[8] Moreover, the initial investment for sustainable infrastructure, such as solar panels or water recycling systems, can be high, especially for independent or boutique hotels. Operational staff may also require additional training to maintain green standards while meeting luxury expectations. Additionally, inconsistencies in global sustainability standards and certifications make it difficult for guests to assess and compare hotels objectively.[9]

Sustainable practices in luxury hotels are not only a response to environmental concerns but also a strategy to enhance guest satisfaction and loyalty. When properly designed and communicated, these initiatives can complement luxury rather than conflict with it. As the hospitality industry continues to evolve, the integration of sustainability into guest experience will play a crucial role in shaping brand identity and market competitiveness.[10] Hotel managers must therefore focus on making sustainability both visible and valuable to guests. Future research should delve deeper into guest perception differences across regions and demographics to develop customized sustainability communication strategies that reinforce the hotel's green identity while maintaining the essence of luxury.[11]

## II MATERIAL AND METHODS

This study adopts a quantitative research design to examine the influence of sustainable practices on guest satisfaction in luxury hotels. A descriptive survey method was employed to gather responses

from hotel guests who have experienced eco-friendly initiatives during their stay at 4-star and 5-star hotels. **Population and Sample:** The target population consisted of guests who had stayed at luxury hotels in Chennai, within the past six months. Using a convenience sampling technique, a total of 120 valid responses were collected via structured questionnaires.

**Research Instrument:** A structured questionnaire was developed based on previously validated scales from existing hospitality and sustainability literature. The questionnaire consisted of three main sections: demographic attributes of the respondents, sustainable practices (Independent variables) and Guest satisfaction (Dependent Variables).

**Data Collection Procedure:** Data were collected over a period of four weeks through both online (Google Forms) and offline (hotel lobby distribution) channels. Informed consent was obtained from all participants, and confidentiality was maintained. The collected data were coded and analysed using IBM SPSS Statistics version 25.

**Reliability and Validity:** The reliability of the constructs was verified using Cronbach's Alpha, with acceptable thresholds set at  $\alpha \geq 0.70$ . Content validity was ensured through expert review by hospitality academics and practitioners.

## III RESULTS AND DISCUSSION

The questionnaire distributed among the respondents are collected sorted and fed into excel sheet and then analysed with the SPSS tool. A total of 120 valid responses were analysed. The demographic distribution is summarized below.

Table 1: Demographic Profile of Respondents

Demographic Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	89	74.2
	Female	31	25.8
Age Group	18–25 years	40	33.3
	26–35 years	46	38.3
	36–45 years	20	16.7
	Above 45 years	14	11.7

Nationality	Domestic (Indian)	96	80
	International	24	20
Type of Hotel Stayed	4-star	64	53.3
	5-star	56	46.7

The demographic analysis revealed that 74.2% of the respondents were male, indicating a higher male representation among hotel guests who are either more engaged in sustainable behaviour or more willing to respond to sustainability-related surveys. This is consistent with trends in hospitality research where business travellers—predominantly male—are frequent guests at luxury hotels. Most participants were aged 26–35 years (38.3%), suggesting that Millennials and early Gen Z constitute a significant guest segment. This age group is generally more aware of environmental issues and receptive to eco-friendly hotel practices, which could positively bias the impact of sustainability on satisfaction. Furthermore, the high number of domestic tourists (80%) reflects increasing eco-consciousness among Indian travellers and growing interest in sustainable domestic tourism.

#### Reliability Test:

Table 2. Cronbach's Alpha was used to test the internal consistency of each construct:

Construct	Cronbach's Alpha ( $\alpha$ )
Energy Conservation	0.81
Waste Management	0.78
Green Certification & Info	0.83
Guest Satisfaction	0.86

Cronbach's Alpha values ranged from 0.78 to 0.86, indicating excellent internal consistency of the questionnaire. This confirms that the items used to measure sustainable practices (energy, waste, certification) and guest satisfaction are reliable and consistently understood by respondents. It also validates the constructs used in the study, allowing confidence in the analysis of relationships between variables.

Table 3: Descriptive Analysis

Construct	Mean	Standard Deviation
Energy Conservation	4.12	0.55
Waste	4.03	0.62

Management		
Green Certification & Info	3.91	0.67
Guest Satisfaction	4.18	0.51

The mean guest satisfaction score of 4.18 (out of 5) indicates that respondents are generally satisfied with their hotel experiences, particularly with energy conservation (mean = 4.12), which includes practices such as energy-efficient lighting, smart sensors, and linen reuse programs. These efforts are likely highly visible and easily understood by guests, enhancing their positive perception. Waste management (mean = 4.03), while still positively viewed, might be less directly noticeable unless explicitly communicated by the hotel (e.g., recycling bins, composting initiatives). Green certifications (mean = 3.91) had the lowest average among the three, suggesting a gap in awareness or communication about certifications like LEED, Green Globe, or Earth Check.

Table 4. Correlation Analysis:

Variables	Guest Satisfaction
Energy Conservation	0.61**
Waste Management	0.54**
Green Certification & Information	0.58**

**Note:** Correlation is significant at the 0.01 level (2-tailed).

All three sustainable practices showed a strong positive and statistically significant correlation with guest satisfaction: These findings indicate that when guests perceive a hotel as engaging in environmentally friendly behavior, their satisfaction increases accordingly. This supports prior studies (e.g., Han & Yoon, 2015) that associate eco-friendly hotel branding with enhanced customer loyalty and satisfaction. Moreover, the strongest correlation was with energy conservation, likely because these efforts are the most tangible and directly experienced by guests (e.g., room temperature controls, energy-saving devices).

Table 5 ANOVA by Hotel Type

Hotel Type	Mean Guest Satisfaction	t-value	Sig. (2-tailed)
4-star	4.05	-2.17	0.032*
5-star	4.32		

To test if there is a significant difference in guest satisfaction between 4-star and 5-star hotels, an independent samples t-test was conducted. The t-test between 4-star and 5-star hotels revealed that guest satisfaction with sustainability practices is significantly higher in 5-star hotels (mean = 4.32) compared to 4-star hotels (mean = 4.05), with  $p = 0.032$ . This suggests that luxury properties not only invest more in green infrastructure but also communicate their initiatives more effectively. 5-star hotels are often industry leaders in innovation, setting benchmarks in sustainability that directly impact guest experience. The result implies that service excellence coupled with visible sustainability practices creates a unique competitive advantage for high-end hotels.

The findings support the hypothesis that sustainable practices in luxury hotels significantly contribute to guest satisfaction. Among the three examined factors, energy conservation (e.g., smart lighting, linen reuse programs) had the most substantial impact. Interestingly, green certifications and communication also played a crucial role in shaping perceptions, suggesting that transparency and guest engagement in sustainability efforts can improve satisfaction and brand trust. Despite the positive findings, challenges remain. Not all guests are fully aware of or interested in green initiatives. Cultural and personal values influence whether sustainability efforts are appreciated or seen as cost-cutting. Hence, hotel managers should implement visible, well-communicated eco-practices that complement luxury service delivery rather than replace it.

#### IV CONCLUSION

This study concludes that sustainable practices significantly influence guest satisfaction in luxury hotels, with energy conservation measures having the strongest impact, followed by waste management and green certifications. The demographic analysis revealed that younger, predominantly male guests are more responsive to eco-friendly initiatives, especially in higher-end properties like 5-star hotels. The positive correlation between sustainable practices and guest satisfaction emphasizes the growing importance of environmental responsibility as a component of service quality. The findings highlight that guests not only appreciate visible sustainability efforts but also

associate them with the overall value of their stay. Therefore, hotels that actively implement and communicate their green practices are more likely to enhance guest experiences, encourage repeat visits, and build long-term brand loyalty.

#### REFERENCES

- [1] Cesare Amatulli, Matteo De Angelis & Anna Stoppani. The appeal of sustainability in luxury hospitality: An investigation on the role of perceived integrity. *Tourism Management* Volume 83, April 2021, 104228
- [2] Vinesh Gupta. Sustainability in hospitality: Eco-friendly innovations leading the way. *ET Hospitality World* Published on 2025 January 31<sup>st</sup> [Internet] Cited on 2025 April 12<sup>th</sup> Available from: <https://hospitality.economictimes.indiatimes.com/news/speaking-heads/sustainability-in-hospitality-eco-friendly-innovations-leading-the-way/117767881>
- [3] Pereira, V., Silva, G. M., & Dias, Á. (2021). Sustainability Practices in Hospitality: Case Study of a Luxury Hotel in Arrábida Natural Park. *Sustainability*, 13(6), 3164. <https://doi.org/10.3390/su13063164>.
- [4] Bohdanowicz, P. (2006). Environmental awareness and initiatives in the Swedish and Polish hotel industries—survey results. *International Journal of Hospitality Management*, 25(4), 662–682. <https://doi.org/10.1016/j.ijhm.2005.06.006>
- [5] Velaoras, K., Menegaki, A. N., Polyzos, S., & Gotzamani, K. (2025). The Role of Environmental Certification in the Hospitality Industry: Assessing Sustainability, Consumer Preferences, and the Economic Impact. *Sustainability*, 17(2), 650. <https://doi.org/10.3390/su17020650>
- [6] Gagandeep Soni, Sarah Hussain, & Saima Kareem. Environment Friendly Practices Adopted in Hotels and their Impact on Customer Satisfaction: A Critical Review of the Literature and Research Implications for the Hospitality Industry. *Atna—Journal of Tourism Studies* 2022, Vol. 17, No. 1, 115-142 ISSN 0975-3281 / <https://doi.org/10.12727/ajts.27>.

- [7] Daniel E. Meeroff, P. D. Scarlatos, Frederick Bloetscher, Lanette Sobel. Implementation of Sustainability Practices in the Hospitality Industry. *Journal of Service Science and Management*, 2020, 13, 189-208<https://www.scirp.org/journal/jssm> ISSN Online: 1940-9907 ISSN Print: 1940-9893
- [8] Graci, S., & Dodds, R. (2008). Why go green? The business case for environmental commitment in the Canadian hotel industry. *Anatolia: An International Journal of Tourism and Hospitality Research*, 19(2), 251–270. <https://doi.org/10.1080/13032917.2008.9687062>
- [9] Al-Romeedy, B.S., Alharethi, T. Leveraging green human resource management for sustainable tourism and hospitality: a mediation model for enhancing green reputation. *Discov Sustain* 6, 67 (2025). <https://doi.org/10.1007/s43621-025-00829-2>
- [10] Thirumalesh Madanaguli, A., Dhir, A., Kaur, P., Mishra, S., & Srivastava, S. (2023). A systematic literature review on corporate social responsibility (CSR) and hotels: past achievements and future promises in the hospitality sector. *Scandinavian Journal of Hospitality and Tourism*, 23(2–3), 141–175. <https://doi.org/10.1080/15022250.2023.2221214>
- [11] Camilleri Fenech, M. (2024). The Management of Waste in Large Chain Hotels: A Review of Corporate Sustainability Reporting. *IntechOpen*. doi: 10.5772/intechopen.1007113