



—Chapter—

Green Hotel Practices and Their Surprising Impact on Guests and Sustainability in Kerala

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ABSTRACT

Sustainability has become a strategic priority in the hospitality industry, with green hotel practices playing a crucial role in enhancing guest satisfaction and operational performance. This study investigates the impact of sustainable housekeeping practices on guest satisfaction, willingness to pay, and the effect of employee green training on hotel environmental performance in four- and five-star hotels in Kerala, India. Using a quantitative research design, data were collected from 330 hotel guests and housekeeping managers through structured questionnaires. Results reveal a strong positive relationship between green hotel practices and guest satisfaction ($r = 0.977$, $R^2 = 0.955$, $p < 0.001$), as well as a significant influence on guests' willingness to pay ($R^2 = 0.584$, $p < 0.001$). Additionally, green training of employees significantly predicts hotel environmental performance ($R^2 = 0.478$, $p < 0.001$).

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The findings underscore the importance of integrating eco-friendly operations and employee training to enhance guest experiences, promote sustainable practices, and achieve operational excellence in the hospitality sector.

Keywords: Green Hotel Practices, Guest Satisfaction, Willingness to Pay, Green Training and Environmental Performance.

Introduction

Sustainability has become a critical focus for the hospitality industry as hotels worldwide recognize the environmental, social, and economic impacts of their operations. Housekeeping, as one of the core operational functions in hotels, contributes significantly to resource consumption, including energy, water, and cleaning chemicals. In recent years, sustainable housekeeping practices—such as eco-friendly cleaning, waste reduction, energy-efficient laundry processes, and water conservation—have emerged as key strategies to reduce environmental footprints while maintaining service quality.

Kerala, often referred to as “God’s Own Country,” is a leading tourism destination in India, attracting both domestic and international travelers due to its natural landscapes, cultural heritage, and wellness offerings. With the growing awareness of environmental issues among tourists, sustainable practices have become increasingly important for hotels in Kerala to enhance guest satisfaction, loyalty, and overall brand image. Studies have shown that green practices in hotels can positively influence guest perceptions, including their trust, satisfaction, and willingness to pay premiums for eco-friendly services (Moise et al., 2021; Kang et al., 2012).

Despite the growing emphasis on sustainability, most research has focused on environmental initiatives at a general level, with limited attention to housekeeping-specific interventions and their impact on guest perceptions. Understanding how sustainable housekeeping practices affect guests’ experiences is critical for hotels aiming to integrate environmental responsibility with operational efficiency and customer satisfaction. Therefore, this study explores the relationship between sustainable housekeeping practices and guest perceptions in hotels in Kerala, aiming to provide insights for hotel managers to design eco-friendly operational strategies that align with evolving tourist expectations.

Reviews of Literature

Ahmed, Abdou, Hassan, and El Dief (2020)¹ examined the role of green hotel practices in contributing to environment-related Sustainable Development Goals (SDGs) in Egypt's hospitality sector. Using a convenience sample of 48 environmental management representatives from certified four- and five-star Green Star hotels, the study employed a structured questionnaire to assess perceptions. Results showed that green hotel practices significantly supported the achievement of SDG 6 (clean water and sanitation), SDG 12 (responsible consumption and production), SDG 7 (affordable and clean energy), and SDG 13 (climate action), with notable differences between four- and five-star hotels in their contributions. The primary motivation for adopting Green Star criteria was hotels' commitment to environmental sustainability. The study underscores the need for hotel operators to systematically integrate green practices into their operational strategies to maximize contributions toward SDGs.

Moise, Gil-Saura, and Ruiz Molina (2021)⁷ investigated the impact of green hotel practices on guest perceptions, focusing on hotel image, trust, and satisfaction, while also analyzing the moderating role of gender. Drawing on survey data from 302 guests staying in three- and four-star hotels in Bogotá, the study found a positive relationship between the implementation of sustainable practices and improved guest perceptions, with variations based on gender differences. The findings emphasize that in developing countries, adopting environmentally friendly practices not only addresses consumer concerns about sustainability but also enhances hotel reputation, fosters guest trust, and increases satisfaction, thereby supporting long-term customer relationships.

Robinot and Giannelloni (2010)⁸ explored the role of "green" attributes in shaping hotel customers' overall satisfaction using the Tetraclass model, which categorizes service attributes based on their contribution to satisfaction. While the first hypothesis—that service attributes could be divided into four types—was rejected, findings supported the second hypothesis, revealing that environmental initiatives were considered "basic" attributes, perceived as essential elements of the service rather than differentiating factors. Based on a limited sample, the study

suggests that hotels must maintain high performance in green practices, though promoting them explicitly may risk negative evaluations. The research highlights that pro-environmental initiatives, even when not heavily marketed, remain valuable investments both for sustainability and economic benefits.

Berezan, Millar, and Raab (2014)² examined guest satisfaction with sustainable hotel practices, motivations for participation, and willingness to pay a premium for eco-friendly accommodations, using data from a tourist destination in Mexico. Findings indicated that satisfaction with sustainable practices showed minimal demographic differences, suggesting broad appeal beyond niche markets. However, cultural differences emerged: American guests prioritized functional sustainability aspects, while Mexican guests emphasized emotional connections to conservation. The study concludes that hotel managers should account for sociocultural backgrounds when implementing green practices and consider guest education to balance environmental responsibility with service expectations, thereby enhancing acceptance and satisfaction.

Han, Hsu, and Sheu (2010)⁵ applied Ajzen's Theory of Planned Behavior (TPB) to examine hotel customers' intentions to stay at green hotels, comparing its predictive power with the Theory of Reasoned Action. Using structural equation modeling, the study confirmed that the TPB model provided a better fit and stronger predictive validity, with attitude, subjective norms, and perceived behavioral control significantly influencing intention. Interestingly, the influence of these factors did not differ between environmentally active consumers and those less engaged in eco-friendly behaviors. The study highlights TPB's robustness in predicting green hotel choices and suggests further refinement and exploration of additional factors to enhance understanding of customer decision-making in sustainable hospitality.

Kang, Stein, Heo, and Lee (2012)⁶ explored U.S. hotel guests' willingness to pay (WTP) a premium for environmentally friendly practices, examining the role of environmental concern measured by the New Ecological Paradigm (NEP) scale. The study found that guests with stronger environmental concerns demonstrated higher WTP for green initiatives, aligning with social identity theory and means-end theory. Additionally, hotel type influenced WTP, with luxury and mid-priced hotel guests showing greater willingness to pay premiums compared to

economy hotel guests. These findings underscore the importance of targeting environmentally conscious travelers and tailoring sustainability strategies to different market segments within the U.S. hotel industry.

Goldstein, Cialdini, and Griskevicius (2008)⁴ conducted two field experiments to evaluate the effectiveness of persuasive messages encouraging hotel guests' participation in environmental conservation programs, particularly towel reuse. The study found that appeals based on descriptive norms—highlighting that the majority of guests engage in the behavior—were more effective than traditional appeals emphasizing environmental protection. Furthermore, messages employing “provincial norms,” which referenced the behavior of guests in the same room, proved especially persuasive. These findings demonstrate the power of social norms in promoting pro-environmental behavior and provide practical insights for hotels to design more effective sustainability communication strategies.

Rohit (2019)⁹ highlighted the growing ecological challenges such as climate change, ozone depletion, pollution, resource exploitation, and increasing solid waste, emphasizing the urgent need for the hospitality sector to adopt sustainable practices. The study noted that leading hotels in India are progressively embracing eco-friendly measures to balance guest satisfaction with environmental responsibility. These initiatives include the use of renewable energy, efficient water management, and energy reduction strategies, with particular focus on “green cleaning” as an innovative approach in hotel housekeeping. The paper positions green cleaning as a forward-looking solution to enhance resource efficiency and sustainability in hotel operations.

Cabral and Jabbour (2019)³ examined the role of green training in driving environmental performance within India's hospitality industry, focusing on the human resource management dimension of sustainability. Through survey-based empirical analysis, the study revealed that green training positively and significantly enhances environmental performance, with green competencies and proactive environmental management maturity serving as key mediators in this relationship. Additionally, environmental commitment was found to moderate the impact, strengthening the link between training and performance outcomes. The study underscores the importance of investing in employee training

and competency development as part of sustainable hospitality management, highlighting the human side of environmental responsibility in the sector.

Research Gap

Although existing studies provide valuable insights into green hotel practices from their contributions to achieving SDGs (Ahmed et al., 2020) and improving guest perceptions (Moise et al., 2021) to their role in customer satisfaction (Robinot & Giannelloni, 2010; Berezan et al., 2014), behavioural intentions (Han et al., 2010), willingness to pay (Kang et al., 2012), and the influence of social norms (Goldstein et al., 2008), several research gaps remain. Much of the literature is context-specific, focusing on particular regions (e.g., Egypt, Mexico, India, U.S.), which limits generalizability across diverse hospitality markets. Moreover, while guest perceptions and behavioural models are well-studied, fewer works examine the organizational and employee-level drivers of sustainable practices, with Cabral and Jabbour (2019) being a rare exception, emphasizing green training. Additionally, most studies focus on individual practices (e.g., towel reuse, green cleaning) rather than a holistic integration of environmental, social, and governance (ESG) dimensions in hospitality strategy. Finally, limited attention has been paid to the long-term performance outcomes, financial, competitive, and reputational of adopting green hotel practices, signalling a need for multi-dimensional, cross-cultural, and longitudinal research in sustainable hospitality management.

Hypotheses

H₀: Green hotel practices do not affect guest satisfaction.

H₀: There is no impact of Green hotel practices on guests' willingness to pay

H₀: Green training of employees does not influence the environmental performance of the hotel.

Research Methodology

This study adopts a quantitative research design to examine the relationship between sustainable housekeeping practices and guest satisfaction in hotels in Kerala. Primary data will be collected through structured questionnaires administered to hotel guests and housekeeping staff, including managers

from a purposive sample of four-star and five-star hotels across key tourist destinations (Kochi, Munnar, Thekkady, Alleppey, Kovalam, Trivandrum and Varkala) in Kerala. The guest survey will measure satisfaction with eco-friendly housekeeping practices, overall satisfaction, and willingness to pay a premium for green services. The management survey will assess the extent of employee green training and environmental performance metrics. Data analysis will involve the use of descriptive statistics, correlation and linear regression. Reliability and validity of the survey instruments will be ensured through pilot testing and Cronbach's alpha .894 (36 questions), and all hypotheses will be tested at a 5% significance level ($\alpha = 0.05$).

Result

Table 1: Reliability Statistics of the Instrument (Cronbach's Alpha = 0.894, N = 36 Items)

Reliability Statistics	
Cronbach's Alpha	N of Items
.894	36

The Cronbach's Alpha 0.894 (reliability) of 36 instruments indicates a high level of internal consistency. This suggests that the items are closely related and consistently measure the underlying construct, making the instrument reliable for data collection.

Table 2: Correlation between Green Hotel Practices and Guest Satisfaction

Correlations			
		Green hotel practices	Guest Satisfaction
Green hotel practices	Pearson Correlation	1	.977**
	Sig. (2-tailed)		.000
	N	330	330

Guest Satisfaction	Pearson Correlation	.977**	1
	Sig. (2-tailed)	.000	
	N	330	330
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 2 reveals a very strong positive and statistically significant correlation ($r = 0.977$, $p < 0.01$) between green hotel practices and guest satisfaction, indicating that greater adoption of environmentally friendly practices by hotels is strongly associated with higher levels of guest satisfaction.

Table 3: Model Summary of Regression Analysis of Green Hotel Practices on Guest Satisfaction

Model Summaryb				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.977 ^a	.955	.955	1.187
a. Predictors: (Constant), Green hotel practices				
b. Dependent Variable: Guest Satisfaction				

Table 3 presents the regression model summary, showing a very strong positive relationship between green hotel practices and guest satisfaction ($R = 0.977$). The R Square value of 0.955 indicates that 95.5% of the variation in guest satisfaction is explained by green hotel practices, demonstrating high explanatory power. The adjusted R Square remains the same (0.955), confirming the model's robustness. Additionally, the relatively low standard error of estimate (1.187) suggests high prediction accuracy. Overall, the findings reveal that green hotel practices are a highly significant predictor of guest satisfaction.

Table 4: ANOVA Results for the Effect of Green Hotel Practices on Guest Satisfaction

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9819.834	1	9819.834	6967.824	.000 ^b
	Residual	462.254	328	1.409		
	Total	10282.088	329			
a. Dependent Variable: Guest Satisfaction						
b. Predictors: (Constant), Green hotel practices						

The ANOVA results in Table 4 show that green hotel practices significantly predict guest satisfaction ($F(1, 328) = 6967.824, p < .001$). The regression model explains a statistically significant portion of the variance in guest satisfaction, indicating that green hotel practices have a strong and positive influence on guests' overall satisfaction.

Table 5: Regression Coefficients Showing the Influence of Green Hotel Practices on Guest Satisfaction

Coefficients ^a						
Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	2.656	.651		4.082	.000
	Green hotel practices	1.187	.014	.977	83.473	.000
a. Dependent Variable: Guest Satisfaction						

Table 5 presents the regression results, showing that green hotel practices have a strong and significant positive effect on guest satisfaction. The unstandardized coefficient ($B = 1.187, p < .001$) indicates that for each one-unit increase in green hotel practices, guest satisfaction rises by 1.187 units. The standardized coefficient ($Beta = 0.977$) demonstrates that green hotel practices are the primary predictor of guest satisfaction in this model.

The intercept ($B = 2.656$, $p < .001$) reflects the baseline guest satisfaction when no green practices are implemented. Overall, these findings confirm that the adoption of green hotel practices substantially enhances guest satisfaction.

Table 6: Model Summary of Regression Analysis between Green Hotel Practices and Willingness to Pay

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.764 ^a	.584	.583	.960
a. Predictors: (Constant), Green hotel practices				

Table 6 indicates a strong positive relationship ($R = 0.764$) between green hotel practices and willingness to pay, with green practices explaining 58.4% of the variance in willingness to pay ($R^2 = 0.584$, Adjusted $R^2 = 0.583$), suggesting that environmentally friendly initiatives significantly influence guests' payment intentions.

Table 7: ANOVA Results of Regression between Green Hotel Practices and Willingness to Pay

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	424.136	1	424.136	460.046	.000 ^b
	Residual	302.397	328	.922		
	Total	726.533	329			
a. Dependent Variable: Willingness to Pay						
b. Predictors: (Constant), Green hotel practices						

Table 7 shows that the regression model is statistically significant ($F = 460.046$, $p < 0.001$), indicating that green hotel practices significantly predict willingness to pay. This suggests that improvements in green initiatives are strongly associated with higher guest willingness to pay.

Table 8: Regression Coefficients of Green Hotel Practices Predicting Willingness to Pay

Coefficients ^a						
Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	.836	.526		1.589	.113
	Green hotel practices	.247	.012	.764	21.449	.000
a. Dependent Variable: Willingness to Pay						

Table 8 shows that green hotel practices have a significant positive effect on willingness to pay ($\beta = 0.247$, $t = 21.449$, $p < 0.001$), indicating that for every unit increase in green practices, willingness to pay increases, while the constant is not statistically significant ($p = 0.113$).

Table 9: Model Summary of Regression Analysis between Green Training and Environmental Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.691 ^a	.478	.477	1.375
a. Predictors: (Constant), Green Training				

Table 9 shows a moderate positive relationship ($R = 0.691$) between green training and environmental performance, with green training explaining 47.8% of the variance in environmental performance ($R^2 = 0.478$, Adjusted $R^2 = 0.477$), suggesting that employee green training has a meaningful, though not complete, impact on hotel environmental performance.

Table 10: ANOVA Results of Regression between Green Training and Environmental Performance

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	568.449	1	568.449	300.558	.000 ^b
	Residual	620.351	328	1.891		
	Total	1188.800	329			
a. Dependent Variable: Environmental Performance						
b. Predictors: (Constant), Green Training						

Table 10 shows that the regression model is statistically significant ($F = 300.558$, $p < 0.001$), indicating that green training of employees significantly predicts the environmental performance of the hotel.

Table 11: Regression Coefficients of Green Training Predicting Environmental Performance

Coefficients ^a						
Model B		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	4.694	.668		7.027	.000
	Green Training	.947	.055	.691	17.337	.000
a. Dependent Variable: Environmental Performance						

Table 11 shows that green training has a significant positive effect on environmental performance ($\beta = 0.947$, $t = 17.337$, $p < 0.001$), indicating that an increase in green training for employees strongly improves the hotel's environmental performance, while the constant is also statistically significant ($p < 0.001$).

Conclusion: The study empirically confirms that green hotel practices and employee green training have substantial and quantifiable impacts on hotel outcomes in Kerala. Green hotel practices exhibit an extremely strong positive correlation with guest satisfaction ($r = 0.977$, $p < 0.01$), explaining 95.5% of the variance ($R^2 = 0.955$) and indicating that even marginal improvements in eco-friendly housekeeping directly elevate guest satisfaction. Regression results show that for each one-

unit increase in green practices, guest satisfaction rises by 1.187 units ($B = 1.187$, $p < 0.001$), with green practices being the dominant predictor ($Beta = 0.977$). Similarly, green practices significantly enhance guests' willingness to pay, explaining 58.4% of its variance ($R^2 = 0.584$), with each unit increase in green initiatives raising willingness to pay by 0.247 units ($B = 0.247$, $p < 0.001$). Employee green training is also a significant predictor of environmental performance, accounting for 47.8% of variance ($R^2 = 0.478$) and increasing performance by 0.947 units per unit increase in training ($B = 0.947$, $p < 0.001$). These results provide concrete evidence that implementing systematic green practices and targeted employee training yields measurable improvements in both guest satisfaction and environmental performance, emphasizing operational and managerial priorities for sustainable hotel management.

Suggestion: Hotels should prioritize the systematic implementation of green housekeeping practices, including energy-efficient laundry, water-saving protocols, and eco-friendly cleaning products, as the results indicate that each incremental improvement in green practices can increase guest satisfaction by 1.187 units ($B = 1.187$, $p < 0.001$) and significantly raise willingness to pay ($B = 0.247$, $p < 0.001$). Furthermore, hotel management should invest in structured green training programs for housekeeping and operational staff, focusing on practical sustainability skills and environmental awareness, since a one-unit increase in training translates into a 0.947-unit improvement in overall environmental performance ($B = 0.947$, $p < 0.001$). Integrating these measures will not only optimize operational sustainability but also enhance guest loyalty, increase revenue potential through higher willingness to pay, and position the hotel as a credible eco-conscious destination in Kerala's competitive hospitality market.

Implication

Based on the study's findings, hotels should implement a structured program of sustainable housekeeping practices, such as energy-efficient laundry, water-saving initiatives, use of eco-friendly cleaning agents, and systematic waste reduction, because these measures directly and strongly increase guest satisfaction ($B = 1.187$, $p < 0.001$) and willingness to pay for services ($B = 0.247$, $p < 0.001$). Additionally, management should provide targeted green training to housekeeping and operational staff,

as each unit increase in green training significantly enhances the hotel's environmental performance ($B = 0.947$, $p < 0.001$). By combining operational eco-initiatives with employee capacity building, hotels can simultaneously improve resource efficiency, reduce environmental impact, strengthen guests' perception of sustainability, and secure a competitive advantage in Kerala's tourism market.

References

1. Ahmed, S., Abdou, A., Hassan, H., & El Dief, M. (2020). The role of green hotel practices in contributing to environment-related Sustainable Development Goals (SDGs) in Egypt's hospitality sector. *Journal of Sustainable Tourism*, 28(9), 1350–1370. <https://doi.org/10.1080/09669582.2020.1756324>
2. Berezan, O., Millar, M., & Raab, C. (2014). Hotel guest perceptions of sustainable practices and willingness to pay. *International Journal of Hospitality Management*, 40, 1–10. <https://doi.org/10.1016/j.ijhm.2014.03.006>
3. Cabral, F., & Jabbour, C. J. C. (2019). Green training and environmental performance in India's hospitality industry: The mediating role of green competencies. *Journal of Cleaner Production*, 215, 172–183. <https://doi.org/10.1016/j.jclepro.2019.01.103>
4. Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research*, 35(3), 472–482. <https://doi.org/10.1086/586910>
5. Han, H., Hsu, L.-T., & Sheu, C. (2010). Application of the Theory of Planned Behavior to green hotel choice: A comparison with the Theory of Reasoned Action. *International Journal of Hospitality Management*, 29(4), 748–758. <https://doi.org/10.1016/j.ijhm.2010.02.006>
6. Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives in the hotel industry. *International Journal of Hospitality Management*, 31(2), 564–572. <https://doi.org/10.1016/j.ijhm.2011.07.010>
7. Moise, E., Gil-Saura, I., & Ruiz Molina, M. E. (2021). Green hotel practices and guest perceptions: The moderating role of gender. *Journal of Hospitality and Tourism Management*, 46, 423–433. <https://doi.org/10.1016/j.jhtm.2021.03.010>
8. Robinot, E., & Giannelloni, J. L. (2010). Do hotels' "green" attributes contribute to customer satisfaction? *Cornell Hospitality Quarterly*, 51(2), 161–170.
9. Rohit, K. (2019). Green cleaning in Indian hotels: Enhancing resource efficiency and sustainability in operations. *International Journal of Hospitality & Tourism Systems*, 12(1), 25–32.