

# "Exploring Sustainable Practices in Five-Star Hotels: A Comprehensive Analysis and Implications for Agra's Hospitality Industry"

**a.Dr. Sanjeev Kumar Saxena**

Associate Professor, Department of Hospitality & Tourism Management, Assam University, Silchar. India.  
ORCID No. 0000-0002-2139-9255

**b Dr. Soumendra Nath Biswas**

Associate Professor & Head, Department of Hospitality & Tourism Management, Assam University, Silchar.  
India

**c. Dr. Vandana Gupta**

Head, Department of Commerce & Management Studies, LM College of Science & Technology, Jodhpur.India.  
ORCID No. 0009-0007-1655-1172

**d. Dr. Pradip Kumar**

Assistant Professor, Department of Hospitality & Tourism Management, Assam University, Silchar, India

**Abstract:** This research is dedicated to outlining the sustainable practices embraced by hotels, gauging their potency in cultivating a competitive edge, and exploring their ramifications for various hotel stakeholders. Focusing on the context of Agra's five-star hotels, this study undertakes an assessment of their sustainable endeavors. A comprehensive survey encompassing 252 employees from the city's 13 five-star hotels was conducted. Through this survey, we endeavored to discern the sustainable practices undertaken across these establishments in the realms of economic, social, and environmental dimensions. Moreover, we aimed to gauge the extent to which these practices have been seamlessly integrated into their operations. Concurrently, we also undertook an exploration of the correlation between employee satisfaction and the implementation of sustainability initiatives.

**Keyword:** Sustainability, Hospitality industry, Agra hotels, Sustainable practices, Environmental responsibility

## Introduction:

In today's contemporary landscape, the significance of sustainability as a bedrock for gaining a competitive edge is gradually garnering recognition, with its prominence expected to further escalate. This phenomenon is notably conspicuous across diverse sectors, most notably within the hospitality industry. This study embarks on an exploration of comprehensive sustainability within the context of five-star hotels situated in Agra. The city, home to the iconic "Taj Mahal," often hailed as the 8th wonder of the world, has been compelled to adopt sustainable practices due to the directives of the National Green Tribunal (NGT). Consequently, numerous hotels in Agra are actively crafting and executing sustainable strategies aimed at achieving long-term reductions in energy and resource consumption.

Within the business realm, sustainability has evolved into a paramount consideration. As posited by Kim (2009), sustainability in business entails operating in a manner that minimizes pollution while judiciously managing natural resources. In line with this, Brundtland (1987) defines sustainability as the fulfillment of present needs without jeopardizing the ability of future generations to meet their own requirements. This conception has been adapted to the business context as Corporate Social Responsibility (CSR), which involves voluntary contributions to social, environmental, and cultural well-being alongside financial profitability (Kotler & Lee, 2004; Visser,

2011). This has further evolved into the "triple bottom line" (TBL) approach, championed by Elkington (1994, 2004), which encompasses people, planet, and profit as the yardsticks for assessing social, environmental, and economic progress. This convergence ensures the preservation of vital resources, safeguarding our health and the environment.

Unfortunately, over the past century, human activities have inflicted extensive harm on natural habitats, a trend that persists today. Munier (2005) aptly notes humanity's detrimental impact, including deforestation, atmospheric pollution, river contamination, and climate alteration. These activities have led to the depletion of natural resources, an essential foundation of our economy. Given this overreliance on finite resources, safeguarding them is imperative for the sustenance of our society.

The concept of sustainable development traces back to the early 20th century, when environmental concerns began gaining traction. The United Nations' inaugural major environmental conference in 1972 marked the genesis of the sustainable development movement (Deaverne, 2005). Today, across various industries, social responsibility and the pursuit of sustainability have become pivotal considerations, driven by heightened public awareness and the demand for businesses to uphold elevated operational standards and accountability (Porter & Derry, 2012).

Within this context, enterprises initiating sustainable initiatives can catalyze wider sustainable urban development efforts (Tryggsted, Georg & Hemes, 2010). The hotel industry exemplifies this phenomenon, as the successful integration of sustainable practices and technologies in one establishment can influence its competitors. In the contemporary hospitality landscape, sustainability has increasingly taken center stage (Spilani & Vayanni, 2004). Capitalizing on this context, certain hotels have proactively embraced "environment-friendly" technologies and promotions, strategically setting their offerings apart from competitors (Green Building Elements, 2013). This study is designed with the following objectives: to identify the sustainability practices implemented by a five-star hotel in Agra, analyze how these practices influence the strategies of competing hotels in the same locale, explore prevalent social sustainability practices in Agra's five-star hotels, and investigate the correlation between sustainable practices and employee job satisfaction within hotels.

## Literature Review

To establish a solid foundation for the research, an extensive review of pertinent literature was conducted, encompassing the following keywords:

According to Hashmi & Muff (2015), contemporary service organizations place sustainability at the core of their operations. Brundtland's (1987) definition of sustainability underscores its multi-faceted nature, where it encapsulates the notion of meeting present needs while safeguarding the ability of future generations to meet their own requirements.

Prairie (2012) notes a growing awakening to sustainability within the hotel industry, driven by the pressing environmental concerns of the modern era. Sustainability practices have gained momentum across various sectors as a response to environmental issues, consumer demands, industry benchmarks, and a commitment to creating a sustainable legacy for generations to come. This segment of the study examines existing research on sustainability practices within the hotel industry.

Drawing from Revilla (2001), hotels have undertaken environmentally conscious measures to curtail their environmental impact, often motivated by cost savings, media influence, legal requirements, or a genuine environmental ethos. Rathore (2009) highlights the operational sustainability initiatives adopted by hotels, which yield substantial cost savings and occasionally incorporate energy-efficient practices and environmentally friendly building design during project inception. Furthermore, Orie Berezan (2010) scrutinizes the connection between hotel environmental practices and guest satisfaction, identifying drivers that prompt guests to pay a premium for "green" accommodations in Mexican hotels.

In the context of competitive advantage, Grant (2010) emphasizes its role in facilitating sustained profit growth by positioning a company ahead of rivals. This concept gains further traction in the service sector, which encompasses diverse industries, each ascribing a distinct significance to sustainability (Gupta, 2012). Mark Vickers (2007-2017) advocates that sustainability-oriented best practices often yield competitive advantages. Organizations adhering to these practices are often lauded and recognized, bolstering their brand image. However,

while sustainability bears benefits, its implementation can be impeded by costs, affecting competitiveness. Identifying gaps through the literature review, the study establishes the following Objectives:

**Objective:**

- To analysis is to assess the perceptions and levels of adoption of various sustainable practices within five-star hotels in Agra.

**Hypotheses:**

- Five-star hotels in Agra adopt a diverse range of sustainable practices.
- The perceived effectiveness and adoption of sustainable practices in five-star hotels significantly vary across different initiatives.

**Methodology**

The methodology employed for this study aimed to provide a thorough understanding of the sustainable practices adopted by the selected five-star hotels in Agra. To achieve this, a meticulous process was followed, involving the participation of a diverse group of employees from thirteen prominent hotels in the region.

**The Participant Selection Process:** The study began by strategically selecting a representative group of participants from the pool of thirteen five-star hotels. This ensured a balanced and comprehensive view of sustainable practices within the Agra hospitality industry. By involving multiple hotels, the study aimed to capture a wide range of perspectives, practices, and experiences related to sustainability.

**Data Collection Approach:** The primary tool for data collection was a well-structured questionnaire. This questionnaire was thoughtfully designed to encompass a spectrum of topics, ranging from energy-efficient measures to social responsibility initiatives. The questionnaire was then disseminated among the targeted participants through the efficient medium of email, allowing for convenient and widespread access. Among the total number of questionnaires dispatched, 336 were received, out of which 252 were deemed suitable for inclusion in the study.

**Quantitative Data Analysis:** The quantitative data collected from the completed questionnaires formed the basis of the study's analysis. The responses were meticulously reviewed and analyzed to extract meaningful insights. Mean scores and standard deviations were calculated to assess the level of adoption and perceptions regarding various sustainable practices. This numerical analysis provided a clear picture of the trends, preferences, and areas of significance.

**Scope of Sustainability Practices:** The study's scope was broad and encompassed an array of sustainability practices. These practices were scrutinized based on their potential impact on energy conservation, water preservation, waste management efficiency, air quality enhancement, and the promotion of the "reduce, reuse, and recycle" philosophy. This holistic approach ensured that the evaluation of sustainable practices was comprehensive and reflected the multifaceted nature of sustainability in the hospitality sector.

**Evaluation of Social Responsibility:** The study's methodology extended beyond environmental practices and delved into the hotels' engagement in socially responsible initiatives. This aspect focused on initiatives aimed at benefiting employees and fostering positive relationships with various stakeholders. By examining these dimensions, the study aimed to gauge how sustainability practices contribute to an enhanced competitive advantage within the industry.

In summary, the methodology adopted for this study was meticulous and inclusive. Through participant selection, questionnaire design, and quantitative analysis, the study aimed to provide a comprehensive insight into the spectrum of sustainable practices embraced by five-star hotels in Agra. The evaluation extended to both environmental and social aspects, aiming to uncover the interplay between sustainability and competitiveness within the context of the local hospitality industry.

## Result & Discussion

**Table 1 List of Five Star Hotels In Agra**

Five star Hotels In Agra		
S.NO	Name of Hotel	Number of Rooms
1	Jaypee Palace Hotel & Convention Center	341
2	Amarvilas	102
3	Trident	135
4	ITC Mughal	233
5	Taj Hotel & Convention( Formerly Radisson Blue)	239
6	Crystal Sarovar Premiere	136
7	Ramada Plaza	145
8	Double Tree by Hilton	104
9	Clarks Shiraz	237
10	Mansingh Palace	97
11	Radisson Blue ( Formerly Four Point Sheraton)	165
12	Courtyard Marriott	189
13	Taj Gateway	100
14	Orient Taj ( formerly Wyndam)	138

Table 1 enlists the hotels that were part of the survey. Out of the mentioned 14 hotels, 13 hotels were chosen for inclusion in the study, specifically those with serial numbers 1 through 13. Notably, Hotel No. 14, Orient Taj, was excluded from the study as it was temporarily closed for operations.

**Table 2 Sustainability Practices Adopted by Five star hotels of Agra**

Sustainable Practices Adopted by the Hotels		
	Mean Square	SD
Natural light during the day	3.03	2.01
Use of Light-emitting diode lights	4.56	3.67
Reflecting window film	7.2	5.84
Alternate Solar Energy	5.28	3.04
Star Rated appliance	1.6	1.15
Motion sensor lighting	4.67	2.55
Timely service of machines	4.22	3
Range of thermostats in occupied rooms	5.48	4.23
Sewage treatment plant	2.13	1.62
Rain water harvesting	12.6	6.18
Sensor fittings in restrooms	13.62	6.91
Use of STP treated water	1.9	1.42

Dual flush toilet	13.49	8.76
Adequate natural ventilation	5.05	3.13
Recycling of linens in rooms	9.29	7.87
Recycling of room amenities	3.01	2.47
Waste composting facility (OWC)	7.51	7.22
Use of organic cleaning product	5.56	4.04
CNG/ battery operated hotel vehicles	5.29	4.03
Pick & drop facility for the staff	12.63	6.71
Hotels effort for work place safety	11.95	18.08
Hotel effort for work life balance	8.81	10.34
Insurance benefit	16.24	14.39
Benefits for medical treatment	14.62	10.85
Transport facility provision	4.45	4.62
Leave travel allowance provision	5.75	5.74
Local hiring	4.82	5.8
Hotel initiative to employee differently abled	8.17	8.08
Hotel initiative for upliftment of surrounding area	2.08	2.6
Hotel initiative to supply tradition art & craft	6.21	4.7
Strong relationship between the hotel and its stakeholders	5.76	5.82
Cost reduction	4.23	6.24
Increase in revenue	5.52	8.44
Improved company/ brand image	6.37	8.01
Not feasible for the firm of this size	9.24	6.15
Strengthens adherence to environmental standards	6.29	6.29
Induces greater effort of cost saving	3.24	3.93
Fosters more focus on improving relationship with stakeholder	3.28	4.13
Inspire to adopt sustainability methods that improve revenue	4.67	6.7
Prompt more involvement in the CSR	5.79	7.4

The data table 2 provides a comprehensive overview of various sustainable practices adopted by hotels, coupled with their corresponding mean scores and standard deviations. This dataset offers valuable insights into both the extent of adoption and the diversity of perceptions among respondents regarding the impact of each practice. Several key observations emerge from this analysis:

Adoption of Sustainable Practices: Examining the mean scores reveals that practices such as "Use of Light-emitting diode lights" (4.56) and "Reflecting window film" (7.2) are relatively well-adopted, evident from their higher mean values. In contrast, practices like "Use of Star Rated appliances" (1.6) and "Use of STP treated water" (1.9) indicate potentially lower adoption rates.

**Impact and Importance:** Practices garnering higher mean scores signal their perceived greater impact and significance. Notable instances include "Insurance benefit" (16.24) and "Benefits for medical treatment" (14.62), which enjoy high recognition among respondents for their importance.

**Variability in Perceptions:** Standard deviations mirror the range of perceptions among respondents. Practices like "Hotel effort for work place safety" (18.08) and "Insurance benefit" (14.39) exhibit higher standard deviations, suggesting diverse opinions and awareness levels regarding their impact.

**Employee-Centric Initiatives:** Initiatives focused on employee well-being, such as "Pick & drop facility for the staff" (12.63) and "Hotel effort for work life balance" (8.81), garner substantial recognition, indicating their importance to respondents.

**Environmental Initiatives:** Practices aligned with environmental conservation, like "Rain water harvesting" (12.6), "Dual flush toilet" (13.49), and "Recycling of linens in rooms" (9.29), command relatively higher mean scores, denoting their perceived significance in promoting sustainability.

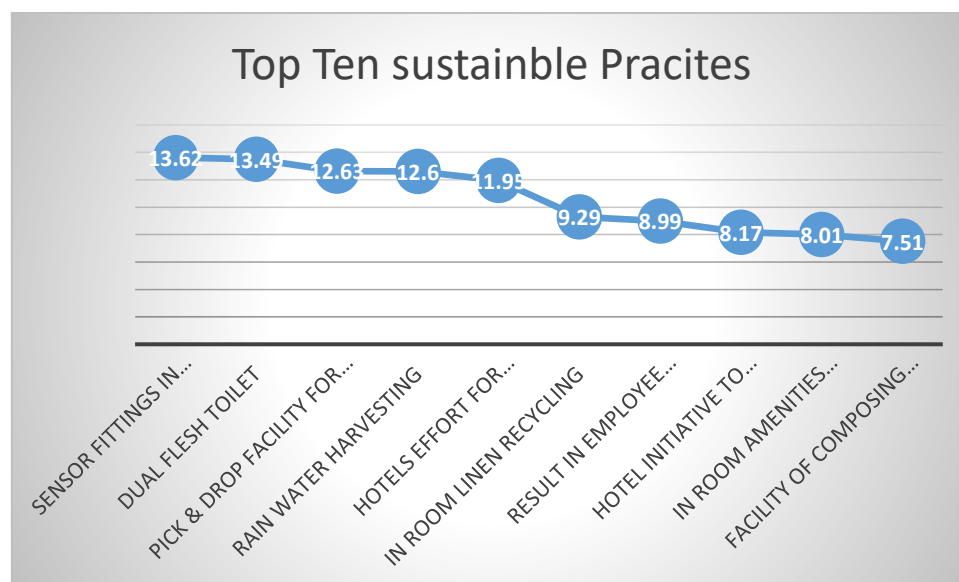
**Competitive Advantage and Revenue:** Practices correlated with potential competitive advantage, such as "Increased revenue" (5.52) and "Improved company/brand image" (6.37), attain moderate mean scores, implying their influence on these areas.

**Challenges and Feasibility:** Practices that seem challenging or less feasible, like "Not feasible for the firm of this size" (9.24) and "Cost reduction" (4.23), receive relatively higher mean scores, indicating respondents' reservations about their practicality.

**Stakeholder Engagement:** Practices connected to stakeholder engagement, such as "Strong relationship between the hotel and its stakeholders" (5.76) and "Fosters more focus on improving relationship with stakeholders" (3.28), secure moderate mean scores, signifying their perceived importance in maintaining positive relationships.

Furthermore, an analysis of the mean scores identifies the top 10 practices that respondents consider particularly impactful:

**Table3 Top ten sustainable practices**



The researcher tries to delve into a comprehensive analysis (table3) of the top ten sustainable practices based on their mean scores:

**Sensor Fittings in Restrooms (Mean: 13.62):** Sensor fittings in restrooms involve touchless technology for water and soap dispensers. The high mean score reflects a strong endorsement of this practice, indicating that respondents recognize its water-saving potential, hygiene benefits, and alignment with sustainability efforts. This suggests that such sensor-based systems are well-received by users.

Dual Flush Toilet (Mean: 13.49): Dual flush toilets offer two flushing options for different waste types. The high mean score highlights the recognition of water conservation potential. Respondents value this practice for its environmental impact and water efficiency, which contributes to sustainable resource management.

Pick & Drop Facility for the Staff (Mean: 12.63): Providing transportation services for employees enhances convenience. The relatively high mean score indicates that respondents view this practice favorably for its contribution to employee well-being, reduced commute-related stress, and potential environmental benefits.

Rain Water Harvesting (Mean: 12.6): Rainwater harvesting involves collecting and storing rainwater for various uses. The high mean score underscores the importance of water conservation and sustainable water management. Respondents recognize the environmental value of this practice in water-scarce regions.

Hotels Effort for Workplace Safety (Mean: 11.95): Focusing on workplace safety and security is critical. The relatively high mean score suggests that respondents place significant emphasis on this practice. A safe work environment not only boosts employee morale but also aligns with the notion of a responsible and caring organization.

In-Room Linen Recycling (Mean: 9.29): Recycling linens used in guest rooms reduces waste. The moderate mean score indicates recognition of this practice's environmental significance. Respondents likely appreciate the sustainable approach to reducing resource consumption and waste generation.

Result in Employee Resistance to Change (Mean: 8.99): Employee resistance to change could impact sustainable initiatives. The mean score suggests that respondents acknowledge the potential challenge of integrating new sustainability practices within the workforce. This underscores the importance of effective change management strategies.

Hotel Initiative for Employees with Disabilities (Mean: 8.17): Embracing differently-abled employees promotes inclusivity. The mean score indicates that respondents view this practice positively for its social responsibility and contribution to diversity and equality within the workforce.

In-Room Amenities Recycling (Mean: 8.01): Recycling amenities used in guest rooms reduces waste. The mean score suggests that respondents recognize the value of this practice for its contribution to waste reduction and sustainable resource management.

Facility of Composting Waste (OWC) (Mean: 7.51): Implementing on-site waste composting facilities helps manage organic waste. The mean score reflects recognition of the environmental benefit of waste reduction and nutrient-rich compost creation. Respondents appreciate efforts to reduce landfill waste.

Collectively, these analyses highlight the favorable reception of specific sustainable practices among respondents. The high mean scores for these practices underscore their perceived significance in promoting sustainability, employee well-being, resource efficiency, and environmental responsibility within the context of the surveyed five-star hotels in Agra.

These top 10 sustainable practices exemplify the intricate interplay between environmental responsibility, employee well-being, community engagement, and enhanced brand perception. Hotels that prioritize these practices are likely to foster a more positive work environment, contribute to societal well-being, and create a distinct identity within the hospitality landscape.

## Conclusion

The comprehensive analysis presented above offers valuable insights into the sustainable practices adopted by five-star hotels in Agra and their perceived impact. The study encompasses a diverse range of practices, revealing the commitment of these establishments towards integrating responsible and ethical initiatives into their operations.

From the list of fourteen five-star hotels in Agra, the findings reveal varying degrees of adoption and impact associated with different sustainable practices. This diversity showcases the individualized strategies that each hotel employs to align with sustainability principles while considering their unique circumstances and priorities. The study identifies specific practices that are particularly noteworthy in terms of both adoption and perceived impact. Practices such as "Sensor fittings in restrooms," "Dual flush toilets," and "Pick & drop facility for the staff" stand out as highly impactful initiatives, enjoying both recognition and acceptance among respondents.



These practices reflect the multi-faceted approach hotels are taking towards sustainability, encompassing resource conservation, employee welfare, and environmental responsibility.

Furthermore, the dataset highlights the variance in perceptions and implementation across different practices. Some practices, such as "Hotel effort for work place safety" and "Insurance benefit," exhibit substantial variability in how they are perceived and adopted. This underlines the complex nature of sustainability initiatives, wherein factors like awareness, feasibility, and stakeholder preferences play a significant role.

The study's outcomes resonate with the hypothesis that five-star hotels in Agra adopt a diverse range of sustainable practices and that the effectiveness and adoption of these practices vary across different initiatives. The findings emphasize the importance of tailored approaches to sustainability, allowing hotels to prioritize practices that align with their objectives, values, and stakeholder expectations.

In the broader context, this research contributes to the understanding of the evolving landscape of sustainability within the hospitality industry. The adoption of sustainable practices is indicative of a broader societal shift towards responsible business operations, with an emphasis on environmental consciousness and social well-being. As the hospitality sector continues to evolve, these insights can guide hoteliers, managers, and policymakers in making informed decisions about sustainable initiatives that not only align with business goals but also foster positive relationships with guests, employees, and the local community. Ultimately, the study underscores the pivotal role of sustainable practices in shaping the future of five-star hotels in Agra and beyond, driving both operational efficiency and positive impact on the environment and society.

### Limitation of the Study

The study's limitations include its narrow focus on five-star hotels in Agra, which may limit generalizability to other regions or hotel categories. The sample size and self-reporting method could introduce bias, and the cross-sectional design hinders establishing causal relationships. Additionally, the study does not deeply explore external factors or offer qualitative insights, potentially affecting the depth of analysis. Finally, social desirability bias and the dynamic nature of sustainability practices are also limitations to consider.

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