International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

Green Hotel Practices and Sustainable Development Goals: An Indian Perspective

Dr. Edgar D'Souza
Goa College of Hospitality and Culinary Education, Goa India

ABSTRACT: This research paper delves into the critical intersection of green hotel practices and Sustainable Development Goals (SDGs) within the context of India. Focusing on four SDGs—Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Responsible Consumption and Production (SDG 12), and Climate Action (SDG 13)—the study explores the perceptions of environmental management representatives in India's four and five-star hotels. Through a comprehensive analysis of survey data from 32 participants, the research uncovers a multifaceted landscape where proactive engagement with green practices is evident.
Key findings reveal that hotels in India have a commendable commitment to environmental sustainability, actively aligning with these SDGs. Notable practices include the adoption of energy-efficient technologies, waste reduction and responsible waste management, and proactive steps in climate change mitigation. However, challenges persist, particularly concerning the limited adoption of renewable energy sources, such as solar and wind power.
This study offers a nuanced perspective on the hotel industry's contribution to SDGs, underscoring both commendable achievements and areas for further improvement. The findings hold valuable implications for policymakers, hoteliers, and sustainability advocates, emphasizing the industry's pivotal role in achieving global sustainability objectives.

KEYWORDS: Environmental sustainability, Energy efficiency, Green hotel practices, Hotel Management, Sustainable Development Goals.

INTRODUCTION

In recent years, global tourism has burgeoned, becoming a crucial driver of socioeconomic progress worldwide, contributing over 10% of the GDP (UNWTO, 2013). This industry's significance extends beyond developed and developing nations, as it plays a pivotal role in job creation, poverty alleviation, gender equality, and natural resource preservation. Sustainability has gained prominence across industries, including hospitality, where it's pivotal for ongoing growth (Shen et al., 2020). While the rapid expansion of the hotel industry has led some to assert that it contributes to environmental degradation due to high energy and water usage, an increasing number of hotels are adopting environmental policies to mitigate their impact and enhance the quality of life (Gössling et al., 2020; Dimara et al., 2017). Intensifying focus on sustainable development principles, driven by media, government, and consumer demand, compels hotels to adopt eco-friendly practices (Kapera, 2018). This dual-benefit strategy enhances resource efficiency, yielding cost savings in energy and water consumption, while also attracting eco-conscious clientele. Research indicate that environmentally sustainable perception could lead to a positive attitude towards visits to green hotels (Patwary et al., 2021).

The global hotel industry demonstrates its commitment to sustainability through initiatives such as eco-labels, sustainable practices, and environmental management systems (Kang et al., 2012). The integration of sustainability and resource conservation into the core of the hotel industry is imperative for its long-term viability and to mitigate environmental harm (Berezan et al., 2013). Green hotel p:ractices focus on energy conservation, water reduction, and waste management, leading the charge in eco-friendly initiatives (Radwan, 2012)

Major international hotel chains increasingly emphasize sustainability, aligning their goals with the United Nations Sustainable Development Goals (SDGs). For example, the Intercontinental Hotel Group commits to the SDGs by ensuring their actions actively contribute to these global objectives, addressing societal issues and tackling the challenges necessary to avert the most severe consequences of climate change. To monitor their progress and remain accountable, they diligently track their performance against a set of predefined metrics on an annual basis (IHG, 2023). Wyndham Destinations reduces energy consumption and emissions through conservation strategies and energy-efficient measures (Wyndham Destinations, Social Responsibility Report, 2020). Marriott

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

International's sustainability strategy extends beyond hotels, emphasizing natural resource preservation (Marriott International Serve360 Report, 2022).

The hospitality industry's sustainability is examined from various angles, addressing current capabilities, barriers, and the state of sustainable development, guest perceptions promoting water and waste conservation, energy efficiency, technology's impact, and human resource management's role (Han et al., 2018). Information and communication technologies are explored to reduce energy demands Gil-Saura & Ruiz (2011). While studies investigate the impact of sustainable practices on customer satisfaction (Prud'homme & Raymond, 2013) employee perspectives on sustainable practices in Mediterranean hotels are assessed against sustainable development indicators (Alipour et al, 2019).

Despite evidence of the positive impact of green hotel practices on efficiency, profitability, guest satisfaction, and competitive advantage, empirical research gaps remain, especially in developing countries. This study aims to address these gaps by exploring the perceptions of environmental management representatives in India regarding the contribution of green hotel practices to environment-related SDGs, including clean water and sanitation (SDG 6), affordable and clean energy (SDG 7), responsible consumption and production (SDG 12), and climate action (SDG 13).

LITERATURE REVIEW

In the context of tourism, sustainable tourism development encompasses addressing economic, social, and environmental impacts while harmonizing the needs of tourists, the tourism industry, the environment, and host communities. Achieving sustainable tourism development necessitates the alignment of three fundamental elements: economic growth, social inclusion, and environmental protection.

The 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015, introduced 17 Sustainable Development Goals (SDGs) with 169 targets to promote balanced and integrated economic, social, and environmental development (UNI, 2023). These goals serve as a blueprint for global development, addressing challenges such as poverty, inequality, climate change, environmental degradation, and peace.

In the context of India, sustainable development holds paramount significance, particularly given the country's burgeoning tourism industry. India's distinctive cultural and natural attractions attract a substantial number of tourists annually. To realize sustainable tourism development, India must ensure that its tourism sector balances economic growth, social inclusion, and environmental protection. This encompasses generating economic opportunities, preserving cultural heritage, and safeguarding natural resources. India's hospitality and hotel industry plays a pivotal role in this endeavor, with the potential to directly or indirectly contribute to all 17 SDGs. For example, the industry can support SDG 6 by efficiently managing water resources and promoting sanitation. Moreover, by adopting sustainable consumption and production practices, including energy and water efficiency, waste reduction, and community engagement, Indian hotels can contribute to SDG 12 (Singhal et al., 2022).

Figure 1. 17 Sustainable Development Goals (Source: UN India Digital Library)

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

The Indian hotel industry's commitment to sustainability is indispensable for the country's progress towards achieving the SDGs (Singh et al., 2023). As tourism in India continues to grow, it must do so in a manner that preserves its rich cultural and natural heritage while contributing to societal and environmental betterment. Indian hotels have a pivotal role to play in realizing these goals, aligning with the principles of sustainable development and unlocking new market opportunities in the process (Maitra, 2021).

Environmental sustainability in the hospitality industry aligns with the nation's growing tourism sector. Balancing economic growth, social inclusion, and environmental protection is vital for sustainable tourism development (Buzinde & Caterina-Knorr, 2022). Studies indicate that an emphasis on environmental sustainability leads to increased guest satisfaction and competitiveness (Werastuti et al., 2019).

Indian hotels are increasingly implementing green practices, including waste reduction, energy and water efficiency, and sustainable material use (Prakash et al., 2023). Green hotels in India actively engage in practices like water and energy conservation and recycling, aligning with the rising environmental consciousness of guests (Dani et al., 2021). International hotel chains are integrating sustainability into their strategies, aiming to reduce environmental footprints and support the United Nations Sustainable Development Goals (SDGs) (Franzoni & Avellino, 2019). Marriott International, for example, collaborates with stakeholders to embed sustainability into hotel design and operations (Marriott International Serve360 Report, 2022).

Green practices in hotels primarily revolve around energy conservation, water management, and waste reduction (Žunić et al., 2019; Chomba et al., 2022). Energy conservation is a prominent focus for hotels, acknowledging their substantial consumption of fossil fuels and electricity. These establishments implement a range of measures, including adopting renewable energy sources like solar and wind power, installing energy-efficient appliances and equipment, controlling guestroom energy consumption with digital thermostats, utilizing energy-efficient LED lighting, and relying on natural daylight for cleaning unoccupied rooms (Shehata & Elfeel, 2017; Navratil et al., 2019; D'Souza & D'Souza, 2023).

Similarly, water conservation is a widespread practice in the hotel industry (Antonova et al., 2021). These establishments consume significant amounts of water, prompting conservation measures such as installing water-efficient devices like low-flow toilets, infrared-activated faucets, and towel/bed linen reuse programs. Hotels also address leaks promptly, optimize watering schedules for landscaping to reduce evaporation, recycle greywater for irrigation, and closely monitor water usage across departments (Wuleka et al., 2013; Sakshi et al. 2020; Singh et al., 2023).

Waste generation in hotels, including both wet waste (e.g., garden waste, food waste, cooking oil waste) and dry waste (e.g., cardboard, plastics, metal, linen, paper), contributes significantly to greenhouse gas emissions when sent to landfills (Osra et al., 2021). To counter this, Indian hotels adopt various waste management practices such as waste separation with labeled containers and colored bins, procurement of products with recycled content, organic kitchen waste composting, bulk purchase of food items and cleaning chemicals, donations of leftover food and linens to charities, and recycling guest soaps into laundry detergent (Kumar & Agrawal, 2020; Chandran & Bhattacharya, 2021).

While past studies provide a comprehensive understanding of the principles of sustainable development, the significance of the United Nations' Sustainable Development Goals (SDGs), and the pivotal role of the hotel industry in promoting environmental sustainability, there remain research gaps and challenges in realizing the full potential of sustainability in the Indian hospitality industry. While the literature review demonstrates the positive impact of green hotel practices on efficiency, profitability, and guest satisfaction, empirical research in developing countries is still limited. This study aims to address these gaps by exploring the perceptions of environmental management representatives in India regarding the contribution of green hotel practices to environment-related SDGs.

METHODOLOGY

To assess environmental management representatives' perceptions of green hotel practices and their contribution to achieving environment-related sustainable development goals (SDGs), a quantitative survey was employed using a structured questionnaire.

The questionnaire structure was developed based on a literature review. Statements related to green hotel practices for water conservation, energy reduction, and waste management and recycling were adapted from prior studies (Han et al., 2018; Merli et al., 2019; Myung et al., 2012; Huh & Chang, 2017). Motives for adopting Green practices criteria were adapted from Buunk and Van derWerf (2019) and Shehata and Elfeel (2017). Additionally, statements related to sustainable development goals and associated targets were customized to align with the hotel industry, drawing from the 2030 Agenda for Sustainable Development.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

To ensure the validity of the questionnaire, it underwent a face validity check involving five experts, with three from the hospitality field and two from hospitality academics. Their suggestions led to adjustments in the wording and deletion of certain statements. The second draft was then piloted with four Maintenance engineers and one General Manager, and their feedback was incorporated into the final questionnaire. The reliability of the instrument was tested using Cronbach's alpha coefficient, which yielded a value of 0.82, confirming its high reliability.

The questionnaire was divided into three divisions. The first collected demographic data from the 32 respondents, including gender, age, education level, current position, duration of work in the investigated hotels, and the Star rating awarded to the hotel. The second section aimed to identify the primary motivations behind the hotels' adoption of Green practices. The third section explored respondents' perceptions of the extent to which their hotel operations contributed to the four SDGs related to environmental sustainability. For each goal, its associated targets and practices, respondents used a five-point Likert-type scale (ranging from strongly agree = 5 to strongly disagree = 1) to express their agreement with the statements investigated.

The collected data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows. Various statistical measures, including frequency counts, percentage distributions, means, and standard deviations, were computed. This analysis was adapted to the Indian context and conducted to understand the environmental management perspectives and perceptions in the Indian hotel industry regarding green practices and their alignment with sustainable development goals.

RESULTS

Demographic Characteristics

The data collected from the 32 participants have been tabulated in Table 1.An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it. Wherever Times is specified, Times Roman or Times New Roman may be used.

TABLE 1. Demographic Characteristics of Hotel managers

Characteristic	Description	Percentage	Value
Gender	Female	46.88%	15
	Male	53.13%	17
Age	35-45 years	18.75%	6
	Over 45 years	68.75%	22
	Under 35 years	12.50%	4
Educational background	Post Graduate	53.13%	17
	Under Graduate	46.88%	15
Current position	General Manager	9.38%	3
	Maintenance engineer	65.63%	21
	Environmental manager	3.13%	1
	Human Resources	9.38%	3
	Others (Exec H.K, RD)	12.50%	4
Years working in the hotel industry	Less than 3 years	3.13%	1
	3-5 years	37.50%	12
	More than 5 years	59.38%	19
Hotel rating	Five stars	66.00%	21
	Four stars	34.00%	11

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

The second subdivision aimed to uncover the primary motivations behind Indian hotels' adoption of Green Practices. Respondents were instructed to select only one reason. As indicated in Table 2, the predominant motive for embracing Green practices was the commitment to environmental sustainability, with more than half (53%) of the respondents choosing this as their main reason. Enhancing the hotel's reputation among customers and competitors, reducing operational costs, and attracting environmentally conscious customers represented 28.13%, 15.63%, and 3.13% of the responses, respectively. These findings align with the conclusions of Buunk and Van derWerf (2109), who found that the main reasons for adopting eco-label criteria were that they were "better for the environment and good for the company's image."

TABLE 2. Primary motivations behind Indian hotels' adoption of Green Practices.

Attribute	Frequency	Percentage (%)
Increasing the hotel's image among customers and competitors	9	28.13
Hotels' commitment to environmental sustainability	17	53.13
Reducing hotel's operational costs	5	15.63
Attracting environmentally conscious customers	1	3.13
Other	-	0.00
Total	32	100

The third subdivision aimed to assess the perceptions of respondents regarding the extent to which green hotel practices contribute to achieving specific Sustainable Development Goals (SDGs). Respondents used a five-point Likert-type scale to express their opinions. The data collected from the respondents are summarized in the following tables.

The assessment of a hotel's contribution to Sustainable Development Goal 6 (SDG 6) emphasizes Clean Water and Sanitation. Table 3 indicates that the hotel exhibits a strong commitment to SDG 6, achieving an overall mean score of 4.08. The mean scores for various aspects related to water management are generally positive, highlighting the hotel's efforts to ensure water quality, provide equitable access to sanitation and hygiene, and make safe and affordable drinking water accessible to all guests.

However, some variations in perception among respondents were observed. While the hotels excels in ensuring safe and affordable drinking water (mean = 4.52) and demonstrates strong efforts in safeguarding water-related ecosystems (mean = 4.11), there are mixed perceptions regarding water conservation practices, such as the use of low-flow toilet and showerhead systems and water-saving devices (mean = 3.97 and 3.41, respectively).

The dedication to SDG 6 and its clean water and sanitation objectives in Indian hotels is commendable, reflected in an overall mean score of 4.08. While specific practices related to water conservation receive mixed feedback, the hotel's commitment to water quality, equitable access to sanitation, and safe drinking water is evident.

TABLE 3. Hotel's contribution to Sustainable Development Goal 6

Goal 6: Clean Water	M	SD	*p* Value
Measures are in place to improve water quality, including reducing the proportion of untreated wastewater generated.	4.21	0.835	0.012
The hotel adopts practices for managing water resources across its operations.	4.41	0.712	0.501
The hotel contributes to providing equitable access to sanitation and hygiene.	4.13	0.686	0.011
The hotel ensures that it plays a role in making safe and affordable drinking water accessible to all guests.	4.52	0.594	0.022
The hotel implements low-flow toilet and showerhead systems to reduce water consumption.	3.97	0.638	0.661
The hotel installs water-saving devices and energy-efficient appliances to promote responsible water usage.	3.41	0.773	0.438

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

The hotel promotes the recycling of greywater, which is wastewater from sources like sinks and showers.	3.86	0.824	0.019
The hotel undertakes initiatives to safeguard and rejuvenate water-related ecosystems, such as collecting rainwater for garden irrigation and toilet flushing.	4.11	0.781	0.001
The hotel works to enhance water quality by increasing the recycling and safe reuse of wastewater within its operations.	4.09	0.811	0.006
Overall Score	4.08	0.739	0.001

M = Mean, SD = Standard deviation, * p-value = Significant difference at level 0.05.

The assessment of a hotel's contribution to Sustainable Development Goal 7 (SDG 7), which emphasizes Affordable and Clean Energy, indicates a commendable alignment with this goal as seen in Table 4. The overall mean score for SDG 7 is 4.03, reflecting a strong commitment to affordable and clean energy practices within the surveyed hotels. The results suggest that the hotels actively pursue sustainable energy solutions.

One of the noteworthy findings is the proactive approach taken by the hotels in enhancing energy efficiency. With a mean score of 4.17, it's evident that these establishments prioritize energy-efficient measures in various areas, including offices, public areas, and guest rooms. This commitment to improving energy efficiency is a crucial aspect of achieving SDG 7.

Moreover, the surveyed hotels are actively working to enhance the proportion of renewable energy in their overall energy consumption. This is evident from the impressive mean score of 4.22. The adoption of systems like solar and wind energy plays a pivotal role in reducing the environmental footprint, which aligns with the goals of affordable and clean energy.

The hotels also exhibit efforts to encourage investment in energy infrastructure and the adoption of advanced clean energy technologies, as indicated by the mean score of 3.82. While this score is slightly lower than the other aspects of SDG 7, it still signifies a positive direction towards supporting the development and implementation of clean energy technologies.

The overall analysis of the assessment for SDG 7 highlights the surveyed hotels' strong commitment to affordable and clean energy practices. The emphasis on improving energy efficiency, increasing the use of renewable energy sources, and promoting investment in clean energy technologies underscores their dedication to contributing to SDG 7 and addressing the challenges related to sustainable energy for a better future. The overall rating has a significant p value of 0.002. This significance level indicates that the surveyed hotels' alignment with this SDG, particularly in the context of affordable and clean energy practices, is a meaningful and statistically noteworthy aspect of their sustainability efforts. The low p value reinforces the strong commitment of these hotels to achieving affordable and clean energy and highlights the importance of their contribution to this sustainable development goal.

TABLE 4. Hotel's contribution to Sustainable Development Goal 7

Goal 7: Affordable and Clean Energy	M (Mean)	SD	*p* Value
The hotel contributes to ensuring that everyone has access to energy services that are reasonably priced, dependable, and up-to-date.	3.91	0.7	0.222
The hotel enhances the proportion of renewable energy in its overall energy consumption by implementing systems like solar and wind energy.	4.22	0.6	0.001
The hotel works on enhancing the pace at which it improves energy efficiency, particularly by incorporating energy-efficient appliances into its offices, public areas, and guest rooms.	4.17	0.7	0.034
The hotel actively encourages investment in energy infrastructure and the adoption of advanced clean energy technologies.	3.82	0.6	0.045
Overall Score	4.03	0.65	0.002

M = Mean, SD = Standard deviation, * p-value = Significant difference at level 0.05.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

The evaluation of hotels' contributions to Sustainable Development Goal 12 (SDG 12), Responsible Consumption and Production, underscores their substantial commitment to sustainable practices as seen in Table 5. The overall mean score of 4.04 signals that these surveyed hotels in India proactively integrate sustainability into their operations in alignment with this goal. Notably, three indicators scored remarkably high within SDG 12. Firstly, hotels demonstrate a resolute dedication to minimizing waste generation through various preventive measures, reduction strategies, recycling initiatives, and reuse practices, achieving a mean score of 4.77. This reflects their strong commitment to responsible production methods, aimed at reducing their environmental footprint. Secondly, with a mean score of 4.20, hotels exhibit well-defined sustainability management plans that encompass patterns for sustainable consumption and production, revealing their strategic approach to sustainability integration and long-term commitment to responsible practices. Thirdly, hotels actively contribute to ensuring worldwide access to pertinent information and awareness for sustainable development and eco-friendly lifestyles, averaging a score of 4.10. This indicates their efforts in educating and raising awareness among guests and stakeholders about sustainable practices, thereby promoting responsible consumption and production behaviors. The overall significant p-value reinforces the credibility of these findings and emphasizes the alignment of these hotels with SDG 12. This postulates that the surveyed hotels in India actively engage in responsible consumption and production practices, with the highlighted high-mean indicators testifying to their unwavering commitment to sustainability.

TABLE 5. Hotel's contribution to Sustainable Development Goal 12

Goal 12: Responsible Consumption and Production	M (Mean)	SD	*p* Value
The hotel has a strategic sustainability management plan, including patterns for sustainable consumption and production.	4.20	0.433	0.003
The hotel contributes to the efficient use of natural resources.	3.96	0.976	0.021
The hotel minimizes food waste at retail and consumer levels and along production and supply chains.	3.84	0.456	0.001
The hotel ensures the environmentally sound management of chemicals and waste across their entire life cycle.	3.91	0.712	0.034
The hotel significantly reduces waste generation through prevention, reduction, recycling, and reuse.	4.77	0.612	0.023
The hotel donates excess food and linens to charitable organizations.	3.70	0.973	0.178
The hotel integrates sustainable practices and sustainability information into their reporting process.	4.11	0.718	0.012
The hotel promotes sustainable public procurement practices in line with local policies and priorities.	3.81	0.611	0.501
The hotel contributes to ensuring that people worldwide have access to relevant information and awareness for sustainable development and eco-friendly lifestyles.	4.10	0.778	0.004
Overall Score	4.04	0.696	0.001

M = Mean, SD = Standard deviation, * p-value = Significant difference at level 0.05.

The assessment of hotels' contributions to Sustainable Development Goal 13 (SDG 13), Climate Action, reveals notable findings as seen in Table 6. The overall mean score for SDG 13 is 3.84, signifying a substantial commitment of the surveyed hotels in India to align their practices with this goal. Within this goal, several indicators provide valuable insights into the hotels' climate-related efforts.

Firstly, with a mean score of 4.16, hotels actively contribute to enhancing education and raising human awareness regarding climate change mitigation, adaptation, impact reduction, and early warning. This score emphasizes their commitment to educating both guests and stakeholders about climate change, promoting awareness of its effects, and encouraging proactive measures.

Secondly, hotels implement advanced technologies to track energy consumption, receiving a mean score of 4.32. This reflects their dedication to monitoring and managing energy efficiently, which is essential for mitigating greenhouse gas emissions.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

However, some aspects within SDG 13 receive lower mean scores, indicating room for improvement. Specifically, the integration of climate change measures into policies, strategies, and planning scores 3.51, while the contribution to mitigating greenhouse gas emissions achieves a mean score of 3.36.

The overall p-value for this assessment is significant, reinforcing the reliability of these findings and underscoring the alignment of these hotels with SDG 13. Therefore, the surveyed hotels in India actively engage in climate action efforts, particularly in education and the use of advanced technologies for energy consumption tracking. While these results highlight their commitment to sustainable practices, there is potential for further improvement in terms of integrating climate change measures into policies and strategies and enhancing contributions to greenhouse gas emission mitigation.

TABLE 6. Assessment of hotels' contributions to Sustainable Development Goal 13

Goal 13: Climate Action	M (Mean)	SD	*p* Value
The hotel integrates climate change measures into its policies, strategies, and planning.	3.51	0.412	0.301
The hotel enhances education and human awareness-raising on climate change mitigation, adaptation, impact reduction, and early warning.	4.16	0.798	0.008
The hotel contributes to mitigating greenhouse gas emissions.	3.36	0.562	0.028
The hotel implements advanced technologies to track energy consumption.	4.32	0.611	0.001
Overall Score	3.84	0.595	0.001

M = Mean, SD = Standard deviation, * p-value = Significant difference at level 0.05.

DISCUSSION

The present study delves into the perceptions of environmental management representatives regarding the contributions of green hotel practices to Sustainable Development Goals (SDGs), specifically focusing on SDGs 6, 7, 12, and 13. These findings offer valuable insights into how hotels align with global sustainability objectives, with a particular emphasis on clean water, affordable and clean energy, responsible consumption and production, and climate action.

In terms of SDG 6, the results underscore the significance of green practices in ensuring clean water and sanitation. The surveyed hotels exhibit a robust commitment to this goal, with an overall mean score of 4.08. Their initiatives encompass measures to enhance water quality, reduce untreated wastewater, and promote equitable access to sanitation and hygiene. These actions correlate with previous research emphasizing the pivotal role of water management in the hotel industry, as inadequate water quality can disrupt hotel operations (Kasim et al., 2014; Han et al., 2020; Antonova et al., 2021). Furthermore, the hotels actively adopt water conservation practices, including low-flow toilet and showerhead systems, water-saving devices, and linen and towel reuse programs, effectively contributing to water and energy conservation (Tirado et al., 2019).

Regarding SDG 7, the findings indicate proactive efforts by hotels to enhance energy efficiency, employing sustainable technologies such as LED lighting, motion sensors, and energy-efficient appliances. These practices are in line with sustainability measures and common within the industry, effectively reducing energy consumption and emissions (Chan et al., 2016; Salehi et al., 2021). However, the adoption of renewable energy sources, such as solar and wind energy, remains relatively limited, reflecting challenges associated with transitioning to cleaner energy options. The extended payback period for solar energy technology is a cited factor contributing to this limited adoption, aligning with previous research (Chan et al., 2016; Petrevska et al., 2016).

In the context of SDG 12, the surveyed hotels demonstrate their commitment to responsible consumption and production. They actively engage in waste separation, recycling practices, and efforts to reduce food waste. These initiatives align with sustainability objectives that aim to reduce waste and promote responsible production methods.

For SDG 13, the hotels are actively involved in climate change mitigation and adaptation, providing staff training to raise climate awareness and minimize their environmental footprint. Recognized hotel chains, including Taj, Marriott International, and Hilton Worldwide, have adopted sustainable plans that prioritize energy efficiency and the use of renewable energy to mitigate climate-related risks (Kumar & Sonker, 2022; Shereni, 2022).

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

The findings from this study reveal a substantial alignment between the surveyed hotels and SDGs 6, 7, 12, and 13. The hotels are proactive in implementing sustainable practices, encompassing water and energy conservation, responsible waste management, and climate change mitigation efforts. While challenges related to the adoption of renewable energy persist, the overall commitment to achieving global sustainability objectives is evident within the industry. These results underscore the ongoing importance of further enhancing sustainability practices to effectively contribute to global sustainability goals.

CONCLUSION

This study significantly enriches the evolving landscape of research concerning the perceptions of environmental management representatives within India's four and five-star hotels regarding the pivotal role of green hotel practices in advancing Sustainable Development Goals (SDGs). In particular, the research has honed its focus on four critical SDGs: SDG 6 (Clean Water and Sanitation), SDG 12 (Responsible Consumption and Production), SDG 7 (Affordable and Clean Energy), and SDG 13 (Climate Action). The study's findings provide valuable insights into the operative principles and priorities of the hotel industry, illuminating both areas of commendable success and arenas with room for improvement.

The study underscores the proactive nature of the surveyed hotels in embracing green practices, with a particular emphasis on energy conservation, water management, and responsible waste disposal. Notably, hotel operators exhibit a laudable commitment to environmental sustainability, reflecting a growing recognition of the imperative to safeguard the environment and its finite resources. The adoption of energy-efficient technologies such as low-flow toilets and LED lighting stands out as a praiseworthy endeavor, closely aligned with broader sustainability objectives.

Nevertheless, challenges are evident, primarily pertaining to the limited uptake of renewable energy sources like solar and wind power. This limitation holds ramifications for the attainment of SDGs, especially in light of escalating fuel costs and the pressing need to curtail greenhouse gas emissions. Encouraging hotel operators to expedite their transition to renewable energy sources and capitalize on government incentives remains paramount for advancing environmental sustainability.

In the context of SDG 6 (Clean Water and Sanitation), the study unveils underutilization of specific green practices, such as rainwater harvesting for garden irrigation and greywater recycling for landscaping purposes. These practices have been well-documented in previous research as highly effective in curbing water consumption within the hospitality industry. As such, this study serves as a clarion call to hotel operators to incorporate these strategies into their sustainability blueprints, further solidifying their contributions to SDG 6. Regarding Sustainable Development Goal 7 (SDG 7) - Affordable and Clean Energy, the study highlights the proactive efforts of hotels to enhance energy efficiency through sustainable technologies and practices, mitigating energy consumption and emissions. However, limited adoption of renewable energy sources such as solar and wind energy presents an area for improvement, primarily due to factors like an extended payback period for solar technology. In the realm of Sustainable Development Goal 12 (SDG 12) - Responsible Consumption and Production, the findings underscore hotels' unwavering commitment to waste reduction and responsible practices, demonstrating their dedication to sustainable objectives. In the context of Sustainable Development Goal 13 (SDG 13) - Climate Action, the study reveals active engagement by hotels in climate mitigation and adaptation through staff training and the adoption of sustainable strategies.

This study reaffirms the significant contributions of green hotel practices to a multitude of Sustainable Development Goals. The findings highlight the hotel industry's pivotal role in embracing sustainability practices to address the global challenges posed by these SDGs. These insights underscore both the commendable successes and the opportunities for further progress in the realm of sustainable development.

LIMITATIONS

Despite its contributions, this study has a few limitations. The findings are based on the perceptions of environmental management representatives in four and five-star hotels in India, making it challenging to generalize these findings to the global hotel industry. Consequently, the generalizability of the findings to hotels in different regions or countries with varying socio-economic and environmental contexts might be restricted. The small sample size, consisting of 32 participants, raises concerns about the study's representativeness and may not capture the diversity of perspectives within the hotel management community. Additionally, the reliance on self-reported data from hotel managers introduces the potential for social desirability bias, as participants might offer responses that align with societal expectations rather than reflecting their actual practices and beliefs. The cross-sectional design of

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

the study, with data collected at a single point in time, limits the ability to track changes or trends in sustainability initiatives over time. Qualitative data in the form of interviews or focus groups could offer deeper insights into the motivations and challenges faced by hotels in implementing green practices. The study's limited scope, focusing on a subset of Sustainable Development Goals (SDGs), restricts the broader perspective on the hotel industry's contributions to the full spectrum of SDGs. Lastly, the study does not delve into the local and cultural factors that can significantly impact the implementation of green practices, and the omission of this contextual dimension limits the understanding of regional variations in sustainability efforts within India.

SCOPE FOR FUTURE RESEARCH

Future research in this field offers several promising avenues for expansion and deeper understanding. Firstly, cross-cultural analysis involving a more diverse range of hotels across various regions and countries could provide insights into how cultural factors influence sustainability practices in the hotel industry and their alignment with Sustainable Development Goals (SDGs). A larger and more varied sample size, including different types of hotels, would enhance the generalizability of findings. Longitudinal studies tracking the evolution of sustainability efforts within the same hotels over time can reveal sustained impacts and trends. Combining quantitative data with qualitative insights from interviews or focus groups could offer a holistic view of motivations and challenges behind green practices. Research could further explore how local contexts and external factors, such as government policies and incentives, shape sustainability initiatives in the hospitality sector. A comparative analysis with other industries would shed light on the uniqueness of challenges and opportunities faced by hotels. Additionally, investigating consumer perceptions of hotel sustainability efforts and whether they are willing to pay more for sustainable accommodations could provide valuable insights into the industry's impact on guest choices. Future research holds the potential to enrich our understanding of green hotel practices, their contributions to SDGs, and how they can be further improved and encouraged.

REFERENCES

1. Alipour, H., Safaeimanesh, F., & Soosan, A. (2019). Investigating sustainable practices in hotel industry-from employees' perspective: Evidence from a Mediterranean island. Sustainability, 11, 6556.
2. Anilkumar, S., Koppar, R., & Baruah, P. (n.d.). Sustainability in Waste Management a Study of International Hotels-A Review of Literatures. Emerging Aspects of Redefining Tourism & Hospitality, 164.
3. Antonova, N., Ruiz-Rosa, I., & Mendoza-Jimenez, J. (2021). Water resources in the hotel industry: a systematic literature review. International Journal of Contemporary Hospitality Management, 33(2), 628-649.
4. Berezan, O., Raab, C., Yoo, M., & Love, C. (2013). Sustainable hotel practices and nationality: The impact on guest satisfaction and guest intention to return. International Journal of Hospitality Management, 34, 227–233.
5. Buunk, E., & van der Werf, E. (2019). Adopters versus non-adopters of the Green Key eco-label in the Dutch accommodation sector. Sustainability, 11, 3563.
6. Buzinde, C. N., & Caterina-Knorr, T. (2022). Tourism policies and inclusive development: the case of Kenya and Rwanda. Journal of Sustainable Tourism, 1-19.
7. Chan, E. S. W., Okumus, F., & Chan, W. (2016). The applications of environmental technologies in hotels. Journal of Hospitality Marketing & Management, 26, 23–47.
8. Chandran, C., & Bhattacharya, P. (2021). Hotel's best practices as strategic drivers for environmental sustainability and green marketing. In Consumer Behaviour in Hospitality and Tourism (pp. 66-81). Routledge.
9. Chomba, G. W., Bichage, G., & Kariuki, A. (2022). Influence of Energy Conservation Practices on Customer Satisfaction in Star Rated Hotels in Mt. Kenya Region, Kenya.
10. D'Souza, E., & D'Souza, K. (2023). A Study on the Impact of Innovative Technologies in the Hospitality Industry. Journal of Tourism, Hospitality & Culinary Arts, 15(1), 1-23.
11. Dani, R., Kukreti, M. R., Kapoor, M. S., & Sharma, S. (2021). A Critical Analysis of Hotel Green Practices and Operational Expenses: A Case Study of Two and Three Star Hotels of Dehradun. Webology, 18(1).
12. Dimara, E., Manganari, E., & Skuras, D. (2017). Don't change my towels please: Factors influencing participation in towel reuse programs. Tourism Management, 59, 425–437.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

13. Elkhwesky, Z. (2022). A systematic and major review of proactive environmental strategies in hospitality and tourism: Looking back for moving forward. Business Strategy and the Environment, 31(7), 3274-3301.
14. Franzoni, S., & Avellino, M. (2019). Sustainability reporting in international hotel chains. Symphonya. Emerging Issues in Management, (1), 96-107.
15. Gil-Saura, I., & Ruiz, M. E. (2011). Tools for improving environmental sustainability in the hospitality industry. CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition, and Natural Resources, 6, 1–6.
16. Gössling, S., Scott, D., & Hall, C. M. (2020). Tourism and water: Interactions, impacts and challenges. Channel View.
17. Han, H., Chua, B. L., & Hyun, S. S. (2020). Eliciting customers' waste reduction and water saving behaviors at a hotel. International Journal of Hospitality Management, 87, 102386.
18. Han, H., Lee, J., Trang, H. L. T., & Kim, W. (2018). Water conservation and waste reduction management for increasing guest loyalty and green hotel practices. International Journal of Hospitality Management, 75, 58–66.
19. Han, H., Moon, H., & Hyun, S. S. (2020). Uncovering the determinants of pro-environmental consumption for green hotels and green restaurants: A mixed-method approach. International Journal of Contemporary Hospitality Management, 32(4), 1581-1603.
20. Huh, C., & Chang, H. (2017). An investigation of generation Y travellers' beliefs and attitudes towards green hotel practices: A view from active and passive green Generation Y travellers. International Journal of Tourism Sciences, 17, 126–139.
21. IHG Hotels and Resorts. (n.d.). Responsible Business. Link
22. Indian Institute of Technology Bombay (IITB). (2018).Carbon footprint of the hotel industry in Mumbai, India. Indian Institute of Technology Bombay.
23. Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. International Journal of Hospitality Management, 31, 564–572.
24. Kapera, I. (2018). Sustainable development in the hotel industry: Between theory and practice in Poland. Turyzm, 28, 23–30.
25. Kasim, A., Gursoy, D., Okumus, F., & Wong, A. (2014). The importance of water management in hotels: A framework for sustainability through innovation. Journal of Sustainable Tourism, 22, 1090–1107.
26. Kumar, A., & Agrawal, A. (2020). Recent trends in solid waste management status, challenges, and potential for the future Indian cities–A review. Current Research in Environmental Sustainability, 2, 100011.
27. Kumar, S., & Sonker, J. (2022). Sustainable hotel operation in India. Ashok Yakkaldevi.
28. Maitra, R. (2021). Adoption and implementation of digital transformation for the sustainability of tourism and hospitality business in India. Journal of Services Research, 21(1).
29. Marriott. (n.d.). Serve 360: Our Sustainability and Social Impact Goals. Link
30. Merli, R., Preziosi, M., Acampora, A., & Ali, F. (2019). Why should hotels go green? Insights from guests experience in green hotels. International Journal of Hospitality Management, 81, 169–179.
31. Myung, E., McClaren, A., & Li, L. (2012). Environmentally related research in scholarly hospitality journals. International Journal of Hospitality Management, 31, 1264–1275.
32. Navratil, J., Picha, K., Buchecker, M., Martinat, S., Svec, R., Brezinova, M., & Knotek, J. (2019). Visitors' preferences of renewable energy options in "green" hotels. Renewable energy, 138, 1065-1077.
33. Osra, F. A., Ozcan, H. K., Alzahrani, J. S., & Alsoufi, M. S. (2021). Municipal solid waste characterization and landfill gas generation in kakia landfill, makkah. Sustainability, 13(3), 1462.
34. Patwary, A. K., Omar, H., & Tahir, S. (2021). The impact of perceived environmental responsibility on tourists'intention to visit green hotel: the mediating role of attitude. Geo Journal of Tourism and Geosites, 34(1), 9-13.
35. Petrevska, B., Cingoski, V., & Serafimova, M. (2016). Sustainable tourism and hotel management in Macedonia through the use of renewable energy sources. UTMS Journal of Economics, 7, 123–132.
36. Prakash, S., Sharma, V. P., Singh, R., & Vijayvargy, L. (2023). Adopting green and sustainable practices in the hotel industry operations-an analysis of critical performance indicators for improved environmental quality. Management of Environmental Quality: An International Journal, 34(4), 1057-1076.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 12 December 2023
DOI: 10.47191/ijcsrr/V6-i12-09, Impact Factor: 6.789
IJCSRR @ 2023

37. Prud'homme, B., & Raymond, L. (2013). Sustainable development practices in the hospitality industry: An empirical study of their impact on customer satisfaction and intentions. International Journal of Hospitality Management, 34, 116–126.
38. Radwan, H. R. I., Jones, E., & Minoli, D. (2012). Solid waste management in small hotels: A comparison of green and non-green small hotels in Wales. Journal of Sustainable Tourism, 20, 533–550.
39. Sakshi, Shashi, Roberto Cerchione, and Harbhajan Bansal. (2020). Measuring the impact of sustainability policy and practices in the tourism and hospitality industry. Business Strategy and the Environment, 29(3), 1109-1126.
40. Salehi, M., Filimonau, V., Ghaderi, Z., & Hamzehzadeh, J. (2021). Energy conservation in large-sized hotels: Insights from a developing country. International Journal of Hospitality Management, 99, 103061.
41. Shehata, H. S., & Elfeel, S. (2017). Going green in Egyptian hotels: Importance and implementation of water and energy practices. Tourism Research Institute, 16, 7–22.
42. Shen, L., Qian, J., & Chen, S. C. (2020). Effective communication strategies of sustainable hospitality: A qualitative exploration. Sustainability, 12, 6920.
43. Shereni, N. C. (2022). Tourism and Sustainable Development Goals in Zimbabwe: Contribution by the Hospitality Sector. University of Johannesburg (South Africa).
44. Singh, A. B., Khandelwal, C., Sarkar, P., Dangayach, G. S., & Meena, M. L. (2023). Achieving Sustainable Development in the Hospitality Industry: An Evidence-Based Empirical Study.
45. Singhal, S., Thapar, S., Kumar, M., & Jain, S. (2022). Impacts of sustainable consumption and production initiatives in energy and waste management sectors: Examples from India. Environment, Development and Sustainability, 1-26.
46. Tirado, D., Nilsson, W., Deyà-Tortella, B., & García, C. (2019). Implementation of water-saving measures in hotels in Mallorca. Sustainability, 11, 6880.
47. UN India Digital Library, (2023). Available from https://india.un.org/en/sdgs
48. United Nations World Commission on Environment and Development (WCED). Our Common Future Report; Oxford University Press: Oxford, UK, 1987.
49. UNWTO. (2013). Sustainable Tourism for Development Guidebook - Enhancing capacities for Sustainable Tourism for development in developing countries. https://doi.org/10.18111/9789284415496
50. Verma & Chandra, Hotel guest's perception and choice dynamics for green hotel attribute: A mix method approach. Indian J. Sci. Technol. 2016, 9, 1–9.
51. Werastuti, D. N. S., Sukoharsono, E. G., Saraswati, E., & Prihatiningtias, Y. W. (2019). Are Competitive Strategies and Strategic Alliances Role in Improving Sustainability Performance?. Journal of Environmental Management and Tourism, 9(7), 1498-1511.
52. Wuleka, K. C.-J., Ernest, B., Mintah, P. V., Abu, M., Ratmond, A., & Ekua, E. A. (2013). Energy, water and waste management in the accommodation sector of Tamale metropolis, Ghana. American Journal of Tourism Management, 2, 1–9.
53. Wyndham Destinations. (2020). Social Responsibility Report 2020. PDF
54. Žunić, L., Bidžan-Gekić, A., & Gekić, H. (2019). Environmental practices in Sarajevo luxury hotels. European Researcher. Series A, (10), 196-206.

Cite this Article: Dr. Edgar D'Souza (2023). Green Hotel Practices and Sustainable Development Goals: An Indian Perspective. International Journal of Current Science Research and Review, 6(12), 7517-7528