

Feature Article

Hotel sustainability practices: A review of Japan and international studies

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1. Purpose

The tourism industry is facing challenges in implementing sustainability into business. Preserving environmental resources, having a positive impact on the social values of the community, and at the same time bringing out favorable economic benefits are foremost challenges.⁽¹⁾ The accommodation sector, which is comprised of small and medium sized entities, in particular, is a significant source of CO₂ emissions, and a heavy-user of energy and water.⁽²⁾ In past decades, many world hotel chains notably have been making efforts to become greener, and some research has revealed that tourists nowadays are increasingly choosing green hotels during their travels.⁽³⁾ Accordingly, sustainable certifications and actions are now being considered as key service quality dimensions that influence guests' satisfaction.⁽⁴⁾

The observation of this global sustainability trend of the accommodation sector has prompted research questions. How is the situation in Japan? Is sustainability practice progressing in Japanese accommodation, where there are so many small and medium-sized *ryokan* and inns? In order to investigate the situation in Japan in comparison with the international trend, this review is written on the topic of hotel sustainability efforts and strategies. Identifying and examining existing research both

within and outside the Japanese context and comparing them would be beneficial for facilitating the smooth and accelerated advancement of sustainability efforts in Japan.

2. Search procedure

This investigation began with a literature search on ScienceDirect, an online database of scientific articles, one of the important search engines for the academic world. First, the keywords “sustainability AND hotel” were used to identify potential sources, and a total of 49,167 articles were found. In order to narrow down the references to be more relevant, the title search using keywords “intitle: sustainability AND intitle: hotel” was conducted. The result was 59 English articles with both keywords in each title published between 1990 and 2025.

A search for Japanese articles was conducted with CiNii, a major online database of Japanese academic articles in Japan. The same procedure was taken with the search for English articles. First, a meta-search with the keywords “sustainability AND hotel (in Japanese words)” was conducted, which brought up only 7 articles since 1990. Then, the advanced-search limiting these two intitle words narrowed down the number to 2 articles. Suspecting that Japanese people may be more familiar with the word SDGs rather than sustainability, an additional

Table 1: Article search results

Database	Type of search	Search words	English	Japanese
ScienceDirect	Meta-search	Sustainability AND hotel	49,167	–
	Meta-search	SDGs AND hotel	1,612	–
	Advanced-search	Intitle: sustainability AND intitle: hotel	59*	–
	Advanced-search	Intitle: SDGs AND intitle: hotel	0	–
CiNii	Meta-search	Sustainability AND hotel	–	7
	Meta-search	SDGs AND hotel	–	37
	Advanced-search	Intitle: sustainability AND intitle: hotel	–	2*
	Advanced-search	Intitle: SDGs AND intitle: hotel	–	21*
Google Scholar	Advanced-search	Intitle: sustainability AND intitle: hotel	415	2
	Advanced-search	Intitle: SDGs AND intitle: hotel	7	2

search with keywords “SDGs AND hotel” was conducted, and the result counts of a meta-search were 37 and an advanced-search with two intitle keywords were 21 respectively.

The results revealed a significant gap between the number of articles published in English and Japanese. To confirm this tendency, it was thought necessary to utilize the same search engine for both languages. Accordingly, Google Scholar, a widely recognized academic resource, was used to search for articles in both English and Japanese. Although the number of search results varied across categories due to the broad scope of sources covered by Google Scholar, the observed gap remained the same. A summary of the search results is provided in Table 1.

3. Analysis of articles

3.1 Analysis of Japanese articles

Twenty three articles in Japanese identified through the advanced-search on CiNii (with asterisk marks in Table 1) were used for the analysis. One article on the list was irrelevant to the theme since it did not mention sustainability, and therefore, was deleted from the list. The examination of the remaining 22 search results in Japanese showed that 20 of them were not research papers but articles on hotel-related magazines.^(5, 6) These articles were mostly published between 2021 and 2024, and introduce sustainability efforts of some hotels in Japan and abroad. These efforts range from reducing plastic-use, improving energy efficiency, managing waste and food loss. Some articles also introduced innovative sustainable practice examples from other countries.

The remaining 2 articles on the list were research papers. One of them, published in 2022 in an architecture journal, introduced a hotel that recycled an old elementary school building.⁽⁷⁾ The other paper from 2018 investigated the Corporate Social Responsibility (CSR) or SDGs factors in Japanese hotels and pointed out the delay in the global trend.⁽⁸⁾ The result of the analysis is indicated in Table 2.

Table 2: Analysis of articles in Japanese

Type	Number	Years
Magazine articles	20	2021-2024
Research Papers	2	2018-2022
Deleted (irrelevant topic)	1	
Total	23	

3.2 Analysis of English articles

Fifty-nine articles in English (with asterisk marks in Table 1) were examined. They are mostly research papers contrary to the result of the Japanese article search. Seven items were deleted from the list due to insufficient information such as author names or being a conference abstract, glossary, or book review. All the items deleted were published between 1994 and 2008. The published years of remaining articles shows that research on this topic started to increase around 2010 and the

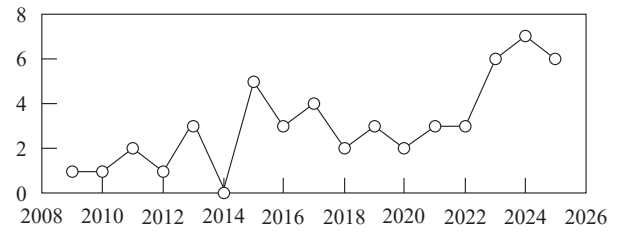


Figure 1: Number of publications in English

number of publications has been increasing, with a notable rise observed since 2020 (Figure 1).

Based on the analysis of the remaining 52 articles, the content was categorized into the following six key themes. Note that some articles cover multiple themes. Most of the studies highlight the sustainability aspects of hotels in specific geographical regions, such as China, Greece, Italy, Mexico, Spain, and Sri Lanka to list a few, but no article was found about Japan.

Key themes:

- **Management for sustainability:** This theme includes studies examining how hotels manage, and are incentivized to adopt sustainable practices.
- **Performance and impact of sustainability practices:** This theme analyzes the effects of sustainable practices on various aspects of hotel performance, including financial, environmental, and operational.
- **Energy efficiency, waste management and technological solutions:** This theme focuses on the application of technology to enhance sustainability in hotel operations.
- **Frameworks and models for evaluating sustainability:** This theme includes research that develops or applies frameworks, models, and criteria for assessing hotel sustainability.
- **Supply chain and stakeholder engagement for sustainability:** This theme explores the role of suppliers, online travel agents, and other stakeholders in hotels' sustainability efforts.
- **Consumer perspectives on sustainability:** This theme includes studies that explore the attitudes, preferences, and behaviors of hotel guests concerning sustainability.

3.3 Overview of articles in English

An overview of the major findings from recent research articles in English across various categories is presented here. Hotels are increasingly focusing on Corporate Sustainability Strategies (CSS), driven by factors such as a positive work environment, corporate commitment, and staff attitudes. Guerra-Lombardi et al.⁽⁹⁾ points out that effective communication and training are crucial for fostering these factors, while a lack of time, guest behavior, and external collaborations pose barriers. Employee engagement through communication and training is essential, along with engaging guests through education and incentives.

Tanveer et al.⁽¹⁰⁾ investigated the role of green Human Resource Management (HRM) in the relationship between

Corporate Social Responsibility (CSR) and sustainability performance in the Pakistani hotel industry and found a positive and significant relationship between CSR and green HRM practices. The study concludes that CSR and green HRM are valuable intangible resources for hotels aiming to achieve sustainable performance and gain a competitive advantage. Another study⁽¹¹⁾ exploring performance of sustainability found that in the Malaysian hotel industry, green innovation strategies and digital technology improve performance by enhancing proactive, transparent, and formal green information practices, which also led to financial success.

Environmentally responsible practices generally enhance hotel efficiency, particularly in energy efficiency and waste management.⁽¹²⁾ Sandaruwani and Gnanapala⁽¹³⁾ found that while there is high awareness among hotel management about the need to minimize food waste, and efforts are made to reduce costs, however, hotel staff face challenges due to customer perceptions and behaviors. Some hotels have successfully benefited by using food waste management systems like biogas digesters.

Much of the recent research tries to develop or apply frameworks, models, and criteria for assessing hotel sustainability. These studies⁽¹⁴⁻¹⁷⁾ propose multi-criteria decision-making approaches to assess and evaluate hotel sustainability from various perspectives, including website and corporate report information. These approaches offer frameworks for hotels to measure their impacts across environmental, social, cultural, economic, and political dimensions.

Relationships with different stakeholders are important elements for hotels to pursue sustainable practice. Espino-Rodríguez and Taha⁽¹⁸⁾ examined the impact of supply chain integration on sustainable performance in the Egyptian hotel industry. It was found that trust promotes supplier innovativeness, which strengthens supply chain integration and sustainable performance. The study suggests that building trust with suppliers, actively seeking information about customer needs, fostering closer relationships with customers, and improving interdepartmental coordination can enhance the positive effect on sustainable performance. The study by Zhu et al.⁽¹⁹⁾ finds that hotels and Online Travel Agents (OTAs) can maximize profits through cooperation on environmental efforts, and that fairness concerns can lead OTAs to give up control over commission decisions.

Consumer perspectives on sustainability are one of the important topics for the hotel industry to understand, as it needs to offer services that attract guests. Research has revealed that tourists are increasingly selecting green hotels during their travels.⁽³⁾ This trend is also seen among the Generation Z consumers in the economy hotel segment. Fei et al.⁽²⁰⁾ found Generation Z show a positive Green Brand Perception (GBP) on greener hotels and a higher willingness to pay for green features. Also, another study showed that guest satisfaction increases with hotels' sustainability efforts, with highly sustainable, low conventional experiences leading to greater satisfac-

tion.⁽²¹⁾

Sustainability labels or certification are particularly a popular theme for research in recent years. Linxiang et al.⁽²²⁾ indicated these labels on online platforms boost booking intentions when paired with positive reviews, but can backfire with negative feedback, highlighting the need for genuine and transparent sustainability practices to avoid green-washing. Bianco et al.⁽²³⁾ examined the impact of sustainability certifications on Key Performance Indicators (KPIs) such as occupancy, average daily rate, and revenue per available room of certified hotels in Florida compared to their competitors. The findings suggest that certified hotels can achieve higher KPIs.

4. Discussions

One major issue identified in this current review is the limited amount of research conducted in Japan. Reliable, research-based information on the sustainable efforts is difficult to access for the managers and staff working in the Japanese hotel industry due to a lack of articles published in Japanese language. The shortage of publications signifies research on this topic in Japan is still in its early stages. Therefore, research findings accumulated over many years from international studies need to be communicated to stakeholders in Japan.

Over the past decade, the concepts of sustainability and SDGs have become widely recognized in Japanese society. As a result, many companies and organizations are undertaking initiatives to promote sustainability and ESG (Environmental, Social, and Governance) management practices. However, progress within the hotel industry in Japan appears to be relatively slow compared to other countries. According to the Deloitte⁽²⁴⁾, a global consulting firm, awareness of green certifications for accommodation such as Green Key remains low in Japan, and only a small number of hotels have obtained such certifications.

Japanese hotels and *ryokans* vary widely in size, and their approaches to sustainable operations have not been thoroughly examined. Moreover, it is still uncertain whether environmental considerations, such as green hotel certification, influence the decision-making process of Japanese guests, as has been observed in studies from other countries. Thus, studies on Japan are urgently needed to accelerate sustainability efforts in Japanese hotels and to catch up with international standards.

5. Limitation and further study

For the current review, only limited sources were used for the search: ScienceDirect for English articles and CiNii for Japanese articles. These sources did not encompass all the available literature on this topic. A more extensive search is essential to gain a comprehensive understanding of the findings and challenges related to hotel sustainability practices. The next steps of this study will include, in addition to a broader literature search, conducting research on the hotel sustainability practices and issues in Japan.

Acknowledgements

The author would like to thank the JGTR Editorial Board for their kind assistance in the process of this publication.

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Published: May 31, 2025

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https://doi.org/10.37020/jgtr.10.1_3