



Sustainable Hotel Industry: Need and Challenges

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Abstract— Hotels, as a part of the hospitality industry, are one of the highest energy and water consuming sectors of the global economy, with also high amounts of waste and carbon emissions. Sustainability has gone from being a peripheral issue to a strategic business requirement for hotel operators globally as a result of increasing environmental awareness, increasing regulation and changing guest requirements. This review paper is a compilation of the current academic literature on the necessity and problems of sustainability in the hotel industry. The paper analyses the environmental, economic, and social arguments for sustainable hotel operations, and explores the diversity of practices introduced by the hotels (energy conservation, water management, green certification, corporate social responsibility, etc.), as well as the recurring obstacles to the implementation (high cost of implementation, lack of technical skills, different stakeholders' interests, etc.), based on peer-reviewed publications issued since 2011 and until 2026. The review reveals that large international chains have made public statements about sustainability, but that often these statements are made for efficiency and regulatory concerns and not for a change in business model, and that smaller and medium-sized hotels are lagging due to limited resources. Finally, there are suggestions of practical steps to move towards sustainable transformation, and future research is identified and highlighted, such as the need for standardised sustainability measures and a long-term study of guest behaviour.



Keywords— sustainable hospitality; sustainable hotel industry; green hotels; environmental sustainability; corporate social responsibility; sustainable tourism; hotel management challenges

I. INTRODUCTION

Tourism and hospitality is one of the biggest and fastest growing sectors of the global economy, with the hotel industry at its heart. Hotels are naturally energy-intensive businesses with 24/7 operations, with a significant amount of energy and water used in heating, cooling, lighting, laundry and food service and a good amount of solid waste produced. In recent years, with the increasing awareness of climate change, resource scarcity and social injustice, sustainability has gone beyond being a CSR side project to becoming part of the main agenda of strategic hotel management. The triple-bottom-line concept of environmental, economic, and social performance is the more common understanding of sustainability in the hotel context. Hotels have structured ways to measure and communicate their sustainability performance through

international frameworks like the United Nations Sustainable Development Goals (SDGs), the Global Reporting Initiative (GRI) and environmental management systems, including ISO 14001. Although there is increasing research and industry efforts, the shift to true sustainability is still not everywhere in the hotel industry. Although large international hotel chains have made obvious public promises, the intent is more to make efficiency and reputational management decisions than to fundamentally reconsider a growth-driven business model. The majority of hotels around the world are small and mid-size, and they often do not have the financial resources, technical expertise, and managerial capacity to develop broad-reaching sustainability programmes. In this paper the academic literature was examined and two main questions tackled: why is sustainability needed in the hotel

sector, and what still prevents it from being adopted widely. The paper is organized as follows: Section 2 presents literature review, Section 3 discusses key findings, Section 4 provides suggestions to practitioners and policymakers, Section 5 concludes the paper and Section 6 provides directions for further research.

II. LITERATURE REVIEW

2.1 The Need for Sustainability in the Hotel Industry

The concept of Sustainability in Hotel industry is based on three pillars, widely discussed in the literature: Environmental, Economic and Social. Melissen et al. (2016) believe that the hotel sector has much potential to contribute to the sustainable development goals, as it is large and widespread, but note that the sector is not yet sufficiently ready to do that. Similarly, Jones, Hillier and Comfort (2014) report that the leading global hotel companies make public announcements about their environmental, social and economic commitments, but that these commitments are generally framed within current business models for growth, and motivated more by the desire for operational efficiency gains than by a more fundamental change in the trajectory of the hotel industry's sustainability. On the client side, the study of guest perceptions of the impact and benefits of green hotel operations has grown in recent years and further motivates hotels to implement sustainable operations. Baker, Davis & Weaver (2014) have also determined that the attitudes of guests towards environmental friendliness have the greatest impact on the willingness of the guests to stay at a green hotel, while at the same time they have identified some barriers that hinder the actual participation of the guests, such as inconvenience, perceived cost-cutting and less luxury. Guest behaviour, perceived value and willingness to pay (WTP) are among the most frequently studied topics in the field in the last fourteen years, alongside the new themes of corporate social responsibility, local food procurement and the Sustainable Development Goals (SDGs) in the field, according to the bibliometric analysis carried out by Blanco-Moreno, Aydemir-Dev, Santos and Bayram-Arlı (2025). Meanwhile, the impact of hotel activities on the environment offers a solid independent argument for sustainability efforts, even when the demand for it is not present. Prior to and during COVID-19, Elkhwesky, Salem, Varmus, and Ramkissoon (2022) found that energy, waste, and community were key areas of concern for sustainable practices in hospitality, despite the significant operational disruption, underlining the importance of environmental sustainability as an integral part of the operation rather than an extra add-on. Jones and

Comfort (2020) take this argument one step further, noting that the COVID-19 crisis not only presented a financial threat for the hotel industry, it also afforded a once-in-a-lifetime chance to reimagine a new way for the industry to address sustainability.

2.2 Sustainable Practices Adopted in the Hotel Industry

A wide variety of practices have been identified in the literature that are used in order to achieve the objectives of a sustainable hotel. There are many different practices that are used in a hotel to achieve the objectives of sustainability, such as the use of energy efficient lighting, water saving technologies, waste segregation and the use of sustainable food products. More and more hotels have started implementing environmental management systems and certification schemes (such as the ISO 14001 and destination-specific eco-labels) to formalise and communicate their commitments. In their systematic review of environmental sustainability assessment tools in hotels, Makoondlall-Chadee and Bokhoree (2024) highlight a steady rise in academic interest in environmental assessment tools since 2018, especially within Europe and Asia, and emphasize the need for standardized assessment tools to inform sustainable development approaches in tourism-heavy economies. While certification schemes are designed to enhance transparency and operational efficiencies, they can be improved by further embedding preventive risk-mitigation measures and better guidance on the impact of the performance of an individual hotel on sustainability at the destination level (as noted in a review by Rodríguez-García, Ferrero-Ferrero, and Fernández-Izquierdo (2023) in *Frontiers in Sustainability*). Elshaer et al. (2023) further investigated the role of green management practices in sustainable performance in small and medium scale hospitality firms and concluded that green management practices were indirectly related to sustainable performance in environmental, economic and social aspects through the intermediate role of employee's pro-environment behaviour, suggesting that human resource involvement in green management in addition to technological and infrastructural investments is crucial. They found that at the strategic and industry level, energy efficiency, waste reduction and community engagement are among the most widely adopted sustainable hospitality practices worldwide, and that Environmental, Social, and Governance (ESG) frameworks, smart tourism technologies and strategies for resilience in the post-pandemic era are becoming more and more influential in determining how hotels approach sustainability.

2.3 Challenges to Implementing Sustainability in Hotels

Considering the clear logic behind sustainability and the set of practices available, there is a consensus in the literature on the great barriers to the widespread implementation of sustainability in the hotel industry. One major barrier commonly mentioned is the high implementation expenses, especially for small and medium-size facilities that may not have the funding to invest in energy efficient infrastructure or renewable energy systems. Poor awareness and technical knowledge of the hotel staff and management, and the resistance to changing the current operational habits, continue to limit implementation, particularly at larger hotel properties where there may be more organisational inertia. Guest behaviour is another additional and more complicated challenge. Some guests are very enthusiastic about the environmental practices, but this does not automatically mean that they are willing to pay a premium for green accommodation, indicating an incongruence in the signal that hotels receive from the guest market for the added value of green investment. Baker, Davis and Weaver (2014) list the three factors of inconvenience, perceptions of cost-cutting, and a perceived reduction in luxury as significant deterrents to guest participation in green programmes or paying more for the green accommodation, even if they have general support for green practices. This mismatch between stated attitudes and actual buying decisions makes it difficult for hotel managers to make a business case for the investment in sustainability. Structural and institutional obstacles remain. Based on interviews with hotel practitioners, the researchers Melissen, Cavagnaro, Damen and Düweke (2016) determined that the business models and managerial capacities at the moment are not 'future-proof' from a sustainable development standpoint in the hotel sector and that this requires external support rather than the hotel sector self-changing. In the same vein, Rodríguez-García et al. (2023) report that there are no international sustainability certification standards, causing a patchwork of voluntary schemes, with varying levels of rigor, that are hard to compare and understand by consumers and investors. Finally, the COVID-19 pandemic exposed the fragility of sustainability commitments under acute financial pressure: Jones and Comfort (2020) observe that many hotels were forced to prioritise short-term survival over long-term sustainability investment during the crisis, while Elkhwesky, Salem, Varmus, and Ramkissoon (2022) argue that the same crisis also created an opportunity to re-anchor recovery strategies around more resilient and resource-efficient operating models, raising questions about which of these two dynamics will dominate in the industry's long-term trajectory.

III. FINDINGS

The following main conclusions have emerged from the literature reviewed:

- While sustainability is clearly on the agenda for the hotel industry, the relative influence of the drivers differs significantly between markets and hotel segments—whether it's the need to do the right thing for the environment, regulatory requirements, or changing guest expectations.
- Large global hotel companies are the most public in their efforts to make public declarations to become more sustainable, but these public commitments are often driven by a desire for efficiency and/or a boost to their reputation, rather than a change in the growth-oriented business model.
- The main reasons for the slow uptake of sustainability in small and medium-sized hotels are cost, lack of technical expertise and knowledge of sustainability practices and schemes. In general attitudes of the guests towards green hotels are positive but this does not always lead to a willingness to pay a premium, cultural and demographic factors have a significant moderating effect.
- Transparency is enhanced by certification and assessment instruments like ISO 14001 and eco-labels, but there is no global standardisation, which makes them less effective as signals or easier to compare.
- External shocks can contribute to reinforcing the need for sustainability (by revealing the vulnerability of resources) and also weaken it (by creating a financial crisis and redirecting investments to other needs).
- Employee training and internal capacity building are frequent enablers of successful sustainability strategies, indicating that human capital limits – not only financial – are a key constraint.

IV. SUGGESTIONS

On the basis of the results of this review, the following recommendations are suggested for hotel management, industry organizations and policymakers who are interested in promoting sustainability in the hospitality sector:

- Small and medium size enterprises (SMEs) should avoid capital intensive renewable energy investments and focus on low cost high impact measures such as energy efficient lights, water efficient fixtures, and waste separation.

- Industry associations and governments should offer special financial incentives, subsidy or low-interest financing options to mitigate the financial risk of smaller firms in implementing sustainable technologies.
- To create a technical capacity and decrease the resistance of the staffs to new operational practices with sustainability orientation, hotel chains should invest in structured employee training programmes. Certification bodies and international organisations need to seek greater alignment of sustainability certifications to render them more comparable and easier to comply with for hotels with multiple certification jurisdictions.
- Hotels should adopt a proactive approach to communicating sustainability, clearly articulating the benefits and consequences of sustainable actions, and incorporate them into a broader engagement strategy to fill the disconnect between guests' expressed environmental values and their behaviors.
- Policymakers need to incorporate hotel sustainability measures into national tourism policies that are linked to the UN Sustainable Development Goals, with a common and stable approach throughout the sector.
- Hotel companies should take the leap from reporting for compliance and embed sustainability in long-term strategic planning in order to make their sustainability commitments more resilient to short-term economic pressures like the COVID-19 pandemic.

V. CONCLUSION

In this review paper, the necessity of sustainability, along with the challenges that the global hotel industry faces, has been explored. The evidence reviewed supports the assertion that the time for hotel operators to choose between sustaining or not is over: not only is the volume of energy and water used by the hotel sector considerable, but so is the amount of waste and carbon footprint generated, and regulatory and consumer pressure is growing. Meanwhile, the literature also shows that the shift towards sustainability is still hindered by the high implementation costs, weak technical skills, lack of guest willingness to pay, the inconsistencies of the different certification systems, and the short-termism of financial pressure on sustainability commitments. Large hotel groups have made genuine public pledges, but these are driven by efficiency and reputation more than by any real change in business models and small and medium-sized hotels are disproportionally affected by the barriers to adoption. An integrated response from hotel operators,

industry bodies, certification agencies and policy makers is needed to reduce financial and knowledge costs, align standards and mainstream sustainability into the DNA of hotel management, to overcome these challenges.

VI. FUTURE SCOPE

From this review a few ideas for future research can be derived. The first is the need for longitudinal studies that are able to follow the actual environmental and financial performance of sustainability investments in the hotel industry over time, instead of relying largely on cross-sectional guest-perception surveys. Secondly, future studies would benefit from a more in-depth analysis of the specific hurdles encountered by SMEs in developing economies, as opposed to developed economies, because of the significant differences in the available resources and regulatory environment. Third, the findings of guests' willingness to pay for green practices are inconsistent; thus, further studies are needed to go deeper into the psychological and cultural processes behind this inconsistency by using experimental/behavioural-economics methods. Fourth, research effort is required to develop and implement globally comparable and standardised sustainability metrics and certification initiatives which can minimize fragmentation among national and regional eco-labelling schemes. In conclusion, while artificial intelligence and data analytics continue to find applications in smart tourism technologies, future studies should focus on leveraging these tools to optimize and scale sustainability management practices, such as energy consumption, predictive maintenance, and resource allocation.

REFERENCES

- [1] Baker, M. A., Davis, E. A., & Weaver, P. A. (2014). Eco-friendly attitudes, barriers to participation, and differences in behavior at green hotels. *Cornell Hospitality Quarterly*, 55(1), 89–99. <https://doi.org/10.1177/1938965513504483>
- [2] Blanco-Moreno, S., Aydemir-Dev, M., Santos, C. R., & Bayram-Arli, N. (2025). Emerging sustainability themes in the hospitality sector: A bibliometric analysis. *European Research on Management and Business Economics*, 31(1), Article 100272. <https://doi.org/10.1016/j.iiedeen.2025.100272>
- [3] Elkhwesky, Z., Salem, I. E., Varmus, M., & Ramkissoon, H. (2022). Sustainable practices in hospitality pre- and amid COVID-19 pandemic: Looking back for moving forward post-COVID-19. *Sustainable Development*, 30(5), 1426–1448. <https://doi.org/10.1002/sd.2304>
- [4] Elshaer, I. A., Azazz, A. M. S., & Fayyad, S. (2023). Green management and sustainable performance of small- and medium-sized hospitality businesses: Moderating the role of

- an employee's pro-environmental behaviour. *International Journal of Environmental Research and Public Health*, 20(3), Article 2244. <https://doi.org/10.3390/ijerph20032244>
- [5] Graham, L. D., & Sasraku-Neequaye, B. K. (2026). Sustainable hospitality management: Practices, challenges, and strategies for global operations. *International Journal of Research and Scientific Innovation*, 13(3). <https://doi.org/10.51244/IJRSI.2026.1303000077>
- [6] Jones, P., & Comfort, D. (2020). The COVID-19 crisis and sustainability in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 32(10), 3037–3050. <https://doi.org/10.1108/IJCHM-04-2020-0357>
- [7] Jones, P., Hillier, D., & Comfort, D. (2014). Sustainability in the global hotel industry. *International Journal of Contemporary Hospitality Management*, 26(1), 5–17. <https://doi.org/10.1108/IJCHM-10-2012-0180>
- [8] Makoondlall-Chadee, T., & Bokhoree, C. (2024). Environmental sustainability in hotels: A review of the relevance and contributions of assessment tools and techniques. *Administrative Sciences*, 14(12), Article 320. <https://doi.org/10.3390/admsci14120320>
- [9] Melissen, F., Cavagnaro, E., Damen, M., & Düweke, A. (2016). Is the hotel industry prepared to face the challenge of sustainable development? *Journal of Vacation Marketing*, 22(3), 227–238. <https://doi.org/10.1177/1356766715618997>
- [10] Rodríguez-García, R., Ferrero-Ferrero, I., & Fernández-Izquierdo, M. Á. (2023). Analysis of integration of sustainability in sustainability certifications in the hotel industry. *Frontiers in Sustainability*, 4, Article 1116359. <https://doi.org/10.3389/frsus.2023.1116359>