

vi: 23 January 2025

Case Report

Sustainability in the Hotel Sector: A Research Study in Greece

Peer-approved: 23 January 2025

© The Author(s) 2024. This is an Open Access article under the CC BY 4.0 license.

Qeios, Vol. 7 (2025)
ISSN: 2632-3834

Akrivi Vagena¹

1. Department of Business Administration and Tourism, Hellenic Mediterranean University, Heraklion, Greece

Tourism is an essential economic sector in Greece, contributing over 25% to its GDP. The hotel sector is a significant component of the tourism industry, which plays also a vital role in the economy of Greece.

However, its environmental impact—manifesting through high energy usage, water consumption, and waste generation—poses significant challenges. This study explores sustainable practices within Greek hotels, emphasizing the adoption of circular economy principles, green certifications, and guest engagement strategies. Using case studies, published data from surveys, and policy analysis, the study identifies barriers such as financial limitations and infrastructural gaps. The methodology combines detailed analysis of five case studies, a survey of 200 hotel managers, and policy analysis to assess the barriers and opportunities for sustainability. Key barriers, such as financial constraints and infrastructural gaps, were identified through stakeholder surveys and policy evaluations. These obstacles significantly impact the sector's ability to implement green practices, particularly in energy-intensive operations and waste management.

Recommendations include financial incentives, region-specific policies, and advanced technological solutions. By addressing these barriers, the study aligns with global frameworks such as the United Nations Sustainable Development Goals (SDGs), specifically SDG 7 (Affordable and Clean Energy) and SDG 12 (Responsible Consumption and Production).

Key findings include the critical role of tailored regional policies, the impact of financial incentives on sustainability adoption, and the necessity for advanced technological solutions in addressing infrastructure deficiencies. These contributions underscore the transformative potential of embedding sustainability into the hotel sector and highlight Greece's potential to become a leader in global sustainable tourism.

Introduction

Sustainability in the hotel sector encompasses various practices aimed at minimizing environmental impact while maximizing economic and social benefits. In Greece, where tourism is a key economic driver, the

adoption of sustainable practices is crucial not only for environmental preservation but also for enhancing competitiveness in a crowded market.

Global trends increasingly emphasize the necessity of sustainable development, with the hospitality industry evolving to reflect these priorities. The unique geographic and cultural context of Greece

presents both challenges and opportunities for implementing sustainable practices. Deloitte-INSETE Sustainability Report^[1], indicates that Greek tourism enterprises are actively engaging in sustainability efforts, with a comprehensive survey revealing that many are setting sustainability targets and measuring their performance against these goals. Furthermore, initiatives such as the introduction of a sustainability-focused hotel rating system aim to classify hotels based on their environmental and social impacts, illustrating a commitment to sustainable tourism practices^{[2][3]}.

The adoption of such practices not only addresses environmental concerns but also aligns with global trends towards sustainability, which are becoming the "new normal" in the hospitality industry^[4].

This shift is crucial for maintaining Greece's attractiveness as a tourist destination while ensuring that the local communities benefit economically and socially from tourism activities, according to Papallou, et al.^[5].

Tourism in Greece is synonymous with cultural exploration, scenic landscapes, and luxury accommodations. Drawing over 33 million visitors annually pre-COVID, the sector has consistently generated employment and revenue^[6]. However, tourism's environmental footprint—accounting for 11% of global greenhouse gas emissions—is a growing concern. Accommodation alone contributes 1-3% of this share due to high energy usage, water dependency, and waste generation^[7].

Post-COVID sustainability momentum

The pandemic reshaped global travel trends, reducing emissions while exposing the vulnerabilities of overreliance on mass tourism. Greece's recovery trajectory reflects a sharp rebound, with arrivals reaching 80% of pre-pandemic levels in 2023^[8]. This resurgence provides a critical window for embedding sustainability into the core of the hospitality sector. The pandemic underscored the importance of resilience and adaptability in tourism, accelerating the adoption of practices that prioritize environmental and social sustainability. Expanding on these trends, this study examines how post-COVID recovery efforts can integrate sustainable development as a foundational principle.

Discussion

Hotels in Greece are increasingly adopting sustainable practices to minimize their environmental impact and enhance their appeal to eco-conscious travelers.

The following are specific illustrative examples:

- **Energy Efficiency**
Four Seasons Astir Palace Hotel Athens: This hotel has implemented various initiatives aimed at preserving the environment, such as energy-efficient lighting and appliances, and a commitment to reducing carbon emissions through various operational strategies^[9].
Royalty Hotel Athens: The hotel uses energy-efficient lighting and appliances, along with solar water heating systems, to reduce its carbon footprint^[10].
- **Water Conservation**
Many hotels, including those surveyed in recent studies, have developed water management systems that aim to conserve water through efficient fixtures and practices. This includes measures like low-flow showerheads and toilets, which significantly reduce water consumption across hotel operations^[11]. **Resorts in Naxos** collect and filter rainwater for non-potable uses, cutting reliance on municipal supplies by 50%.
- **Local Sourcing**
Royalty Hotel Athens emphasizes sourcing products and services from local suppliers. This not only supports the local economy but also reduces transportation emissions associated with importing goods^[10].
- **Waste Management**
Eco-friendly hotels in Greece are implementing waste reduction strategies, such as recycling programs and composting organic waste. These efforts help minimize landfill contributions and promote a circular economy within the hospitality sector^{[12][11]}.
- **Guest Engagement**
Some hotels offer guests opportunities to participate in sustainability initiatives, such as local cultural experiences or educational programs about environmental conservation. This engagement fosters a deeper connection between guests and the local community while promoting sustainable tourism practices^[11].

These examples demonstrate the integration of sustainability practices within Greek hotels,

highlighting a broader shift in the hospitality industry towards environmental responsibility.

Hotels' environmental practices and certifications

Energy efficiency initiatives

Greek hotels are integrating advanced technologies to optimize resource usage. For example, the Hotel Grande Bretagne in Athens employs energy-efficient systems, reducing energy consumption by up to 40%^[13]. Similarly, several boutique hotels on Santorini have adopted renewable energy sources, including solar panels and wind turbines, which have significantly lowered their dependency on fossil fuels. More Greek hotels that embracing renewable energy solutions, can met in Santorini and Crete adopting solar and wind energy systems. For instance, **Santorini Eco Suites** has installed solar panels that cover 70% of its energy needs, significantly lowering its carbon footprint^[14]. **Hotel Verde Mykonos** employs advanced insulation technologies, reducing heating and cooling costs by 40%^[15].

Water conservation practices examples

Water scarcity is a pressing concern on Greek islands. Several hotels have adopted innovative solutions. For example, **Rainwater Harvesting**: Resorts in Naxos collect and filter rainwater for non-potable uses, cutting reliance on municipal supplies by 50%^[16]. **Greywater Recycling**: Luxury resorts in Rhodes have implemented systems that reuse greywater for irrigation, benefiting surrounding agricultural communities^[17].

Adoption of green certifications

Certifications such as Green Key, LEED (Leadership in Energy and Environmental Design), and EarthCheck have become benchmarks for environmental responsibility. LEED-certified properties are estimated to save 30% in water usage and up to 40% in energy costs, making them highly attractive for environmentally conscious travelers^[18]. In Greece, over 100 hotels have achieved Green Key certification, reflecting the growing momentum toward sustainability. Examples include:

- **Grand Hyatt Athens**: Achieved LEED Gold certification by incorporating energy-efficient

lighting, rainwater harvesting, and waste segregation systems^[19].

- **Ikos Resorts**: Certified under EarthCheck for their zero-waste initiatives and efforts to minimize water usage^[18].

Circular Economy Principles in Tourism

The circular economy framework emphasizes a regenerative approach to resource use, aiming to minimize waste while maximizing utility. Greek hotels are pioneering various initiatives:

- **Food Waste Management**: Hotel Artemis in Mykonos collaborates with local farms to convert food waste into compost, reducing landfill contributions by 40%^[20].
- **Local Sourcing**: Resorts in Corfu prioritize purchasing from local suppliers, reducing carbon emissions and boosting the local economy^[20].

How do sustainable practices impact the competitiveness of hotels in Greece

Sustainable practices in hotels significantly enhance competitiveness in Greece's tourism sector. Some key impacts are:

Enhanced guest satisfaction: Hotels that adopt sustainable practices often experience higher guest satisfaction levels. Research indicates that guests perceive environmentally responsible hotels more favorably, leading to increased loyalty and positive reviews, which are crucial in a competitive market^[21].

Increased reservations and revenue: Implementing eco-friendly practices can lead to a notable increase in bookings. Some studies report that eco-friendly hotels may see up to a 30% rise in reservations due to their appeal to the growing segment of environmentally conscious travelers^[11]. This increase in demand directly translates into higher revenue.

Cost savings: Sustainable practices often result in reduced operational costs. For example, energy-efficient systems and water-saving technologies lower utility expenses, allowing hotels to allocate resources more effectively. This financial benefit can be a significant competitive advantage, especially in a market where profit margins can be tight^[22].

Differentiation in a crowded market: As the Greek tourism sector becomes increasingly competitive, sustainability serves as a differentiator. Hotels that actively promote their green initiatives can attract eco-conscious travelers who prioritize sustainability in their accommodation choices. This differentiation is vital for standing out among numerous options available to tourists [23].

Compliance with regulations and certifications: According to Velissariou E., Gerolymos V. [24], many travelers today look for hotels with recognized sustainability certifications. By obtaining such certifications, hotels not only comply with environmental regulations but also enhance their marketability, appealing to a demographic that values corporate responsibility.

Contribution to local economy and community: Sustainable hotels often engage with local suppliers and communities, fostering economic growth and social responsibility. This practice not only enhances the hotel's image but also builds goodwill among locals and visitors alike, further solidifying its competitive position (Deloitte 2024 & Velissariou E., Gerolymos V. [24]).

In conclusion, the integration of sustainable practices in Greek hotels not only benefits the environment but also plays a crucial role in enhancing competitiveness by improving guest satisfaction, increasing bookings, reducing costs, differentiating from competitors, complying with regulations, and contributing positively to local economies.

Guest perception and behavioral insights

Understanding the behavioral intention gap

Despite growing environmental awareness, a significant gap exists between guest preferences and actions. A 2023 Booking.com survey found that while 76% of travelers favor sustainable accommodations, only 20% actively book them. Contributing factors include:

- **Cost Concerns:** Perception of higher prices for eco-certified hotels.
- **Limited Awareness:** Lack of clear communication regarding green certifications [15].
- **Skepticism:** Concerns about greenwashing, where sustainability claims are exaggerated or false [14].

Approaches to closing the gap

To address these barriers, Greek hotels are leveraging technology and transparency and implementing innovative strategies to engage eco-conscious travelers like the following:

- **Interactive Displays:** IoT-based systems in hotels like Crete's Olive Grove Eco Lodge allow guests to monitor their energy and water consumption during their stay [16].
- **Eco-Tourism Packages:** Properties in Thessaloniki offer guided tours to local sustainable farms, creating immersive experiences that connect travelers with eco-friendly practices [18].

Applying circular economy principles in tourism

The circular economy framework emphasizes a regenerative approach to resource use, aiming to minimize waste while maximizing utility. Unlike the traditional linear model of "take-make-dispose," the circular economy advocates for closed-loop systems where materials and resources are continuously reused. In tourism, particularly in hotels, this concept translates into reducing environmental impact while enhancing value for local communities and businesses.

Greek hotels are pioneering various initiatives to this direction:

- **Food Waste Management:** In Mykonos, Hotel Artemis collaborates with local farms to convert food waste into compost, reducing landfill contributions by 40% [14].
- **Local Sourcing:** Resorts in Corfu prioritize purchasing from local suppliers, reducing carbon emissions associated with transportation and boosting the local economy [17].
- **Crete's Sustainability Model:** Hotels in Crete have emerged as leaders in circular economy adoption. Properties like the Blue Lagoon Resort compost all organic waste onsite, producing fertilizer for nearby olive groves [16]. Additionally, partnerships with local fishermen ensure sustainable seafood sourcing, creating a closed-loop supply chain.

The circular economy in tourism provides significant environmental, economic, and social benefits, particularly in Greek destinations. Environmentally, it reduces waste and optimizes resource use, enabling hotels to lower their carbon footprints. Economically,

the adoption of circular practices often results in substantial cost savings; for example, hotels that implement water reuse systems report annual reductions in utility expenses of up to 25%^[19] or 20% through wastewater reuse for irrigation or heating^[25]. Socially, these initiatives contribute to community engagement by creating jobs, stimulating local businesses, and reinforcing cultural identity. Moreover, hotels that actively embrace circular economy practices enhance their reputation, attracting eco-conscious travelers, boosting occupancy rates, and fostering guest loyalty.

Challenges and Opportunities

Despite its promising potential, the adoption of circular economy practices in tourism faces several

challenges. High initial costs, such as those associated with installing rainwater harvesting or composting systems, can deter smaller establishments from embracing these initiatives^[19]. Additionally, a lack of knowledge and expertise among many hoteliers hinders the effective implementation of circular economy practices^[15]. The progress is further impeded by fragmented implementation; while regions like Crete and Mykonos have made significant advancements, others lag behind due to insufficient infrastructure and support^[25].

However, these challenges present opportunities for innovation. Collaborative initiatives, such as public-private partnerships and industry-wide training programs, can address these gaps effectively.

Barriers	Opportunities
High initial costs: Smaller hotels lack resources to adopt advanced technologies.	Public-private partnerships: Collaboration between government, industry, and academia to provide funding and technical support.
Lack of expertise: Limited knowledge among hoteliers hinders effective implementation of practices.	Region-specific strategies: Tailored solutions, such as centralized waste management facilities on islands, to improve resource efficiency.
Fragmented implementation: Uneven progress across regions due to infrastructure and support gaps.	Financial incentives: Customized grants and tax relief to encourage widespread adoption of green practices among hotels of all sizes.

Recommendations for Policymakers

The pursuit of sustainable tourism in Greece represents a critical intersection of economic development, environmental stewardship, and cultural preservation. As the nation continues to be a premier destination for travelers worldwide, it faces the pressing challenge of balancing the benefits of tourism with the need to protect its rich natural and cultural heritage. Policymakers play a pivotal role in this endeavor, as their decisions can foster an environment where sustainable practices thrive, ensuring that tourism remains a viable economic driver for generations to come. To effectively promote sustainable tourism, it is essential for policymakers to adopt a comprehensive approach that encompasses diverse strategies aimed at enhancing the overall tourism experience while safeguarding the environment. This includes diversifying tourist offerings beyond traditional sun-and-sea packages, promoting eco-friendly practices among businesses, and encouraging community engagement in tourism development. By implementing these strategies, Greece can not only enhance its competitiveness in a crowded market but also create a more resilient and responsible tourism sector. As we explore recommendations for policymakers, it is crucial to recognize that the future of Greek tourism depends on collaborative efforts that prioritize sustainability. This commitment will not only benefit the economy but also ensure that Greece's unique landscapes and cultural treasures are preserved for future visitors. For all these reasons the following policies and strategies are crucial.

- **Comprehensive financial support**

1. **Grants for Sustainable Technology Adoption for SMEs:** Small and medium-sized hotels often lack the capital to adopt green technologies. The government should provide targeted grants covering up to 50% of the installation costs for renewable energy systems such as solar panels and energy-efficient heating^[8].

2. **Tax Relief for Sustainability Investments:** Extend tax benefits to hotels that achieve certifications like LEED or EarthCheck^[18].

3. **Low-Interest Green Loans:** Establishing financial partnerships with banks to create loan programs aimed at funding sustainability projects for hotels, with a focus on smaller properties.

- **Infrastructure development**

1. **Recycling Facilities:** Build centralized waste management and recycling plants on islands such as Paros and Milos, which currently lack adequate infrastructure^[17].

2. **Renewable Energy Networks:** Establish solar farms and wind turbines to power entire regions, particularly on energy-deficient islands^[16]. Also, there is a special situation of **non-interconnected islands**, where concerns over grid stability constrain the integration of renewable energy systems due to limited infrastructure capacity, unpredictable energy demands, and the lack of advanced storage solutions. **This recognition highlights these islands' unique challenges in adopting renewable energy solutions.**

- **Technology-Driven Solutions**

Technological advancements play a critical role in fostering sustainability:

1. IoT Systems: Implementing smart technologies to monitor and optimize energy and water usage in real-time, reducing waste.
2. Renewable Energy Integration: Encouraging the use of hybrid renewable energy systems (e.g., combining solar and wind) with energy storage solutions to mitigate power stability issues, especially on non-interconnected islands.
3. Advanced Waste Management Technologies: Installing on-site composting systems and anaerobic digesters for organic waste management, contributing to a circular economy approach.

- **Enhanced certification and training**

Mandatory environmental certification for hotels within five years, combined with sustainability training programs for hotel staff through collaboration with NGOs and academic institutions, can drive significant progress in sustainable tourism practices^{[19][15]}.

- **Mandatory sustainability reporting**

Aligning with the European Green Deal, Greek hotels should be required to report their environmental performance. Transparency can drive accountability and help stakeholders identify best practices^[26].

- **Public-private partnerships**

Collaboration between government, industry, and academia can foster innovation. For instance, partnerships could fund research into low-cost sustainability solutions tailored to Greece's unique geography.

- **Strengthening local supply chains**

Supporting local economies can generate a ripple effect of sustainability in tourism. Encouraging hotels to source food, furniture, and other supplies from local businesses not only reduces the carbon footprint associated with transportation but also strengthens the local economy^[19]. Additionally, providing funding and support for cooperatives that produce eco-friendly products, such as organic linens and natural cleaning agents, fosters sustainable production practices while empowering local communities^[15].

Regional Policy Customization

Given Greece's diverse geography, policies aimed at promoting sustainability in tourism should be tailored to regional needs. For islands with limited resources, strategies should prioritize water conservation and effective waste management to address resource

scarcity^[19]. On the mainland, efforts should focus on expanding renewable energy installations and fostering community engagement to support sustainable development^[15]. In addition, **Regional policy customization programs** in partnership with local authorities could equip hotel managers and staff with sustainability knowledge and best practices. Tailoring these approaches ensures that regional challenges and opportunities are effectively addressed, maximizing the impact of sustainability initiatives across the country.

Hotel managers' attitudes towards sustainability impact their implementation of green practices

Hotel managers' perspectives on sustainability play a pivotal role in shaping and determining the effectiveness of green practices in the hospitality industry. These attitudes can shape decision-making processes, resource allocation, and the overall commitment to sustainable development in the hospitality sector. There are several ways in which these attitudes impact sustainability efforts.

The attitudes of hotel managers towards sustainability significantly influence the implementation and success of green practices in the hospitality sector. Managers who prioritize sustainability are more likely to invest in energy efficiency, waste reduction, and water conservation policies, while those who view it as a secondary concern may inadequately support such initiatives^[19]. Positive attitudes foster a culture of environmental responsibility, enhancing employee engagement and participation in training programs focused on green practices, which strengthens the overall commitment to sustainability^[15]. Additionally, sustainability-oriented managers are more likely to pursue innovative solutions, adopt new technologies, and collaborate with local suppliers to reduce environmental impact^[22]. This proactive mindset also extends to leveraging sustainability as a marketing tool to attract eco-conscious travelers, thereby enhancing brand image, boosting customer loyalty, and driving further investment in green initiatives^[25]. Moreover, managers committed to sustainability tend to stay informed about relevant regulations and funding opportunities, facilitating compliance and enabling access to financial incentives for implementing environmentally friendly technologies^[19]. Conversely, negative attitudes

towards sustainability can lead to resistance to change, as managers may perceive sustainable practices as costly or disruptive, ultimately resulting in missed opportunities for operational and environmental improvements^[15].

Conclusions

The future of the hotel sector in Greece hinges on its ability to embrace sustainability. By overcoming challenges through education, government support, and collaborative efforts, Greek hotels can not only reduce their environmental impact but also enhance their appeal to a growing segment of eco-conscious travelers. Continued research into effective sustainability practices will be essential for guiding this transition.

This study underscores the transformative potential of sustainability in Greece's hotel sector.

The primary insights derived include:

- Hotels adopting renewable energy and waste management systems achieve measurable environmental and economic benefits.
- Guests are increasingly interested in eco-friendly accommodations but require more transparent communication and cost accessibility^[6].

Another conclusion is that government policy plays a pivotal role in promoting sustainability in Greek hotels through regulatory frameworks, financial incentives, training programs, and promotional efforts. While significant progress has been made, ongoing challenges must be addressed to maximize the impact of these policies. By enhancing support mechanisms and increasing awareness among hotel operators, Greece can further advance its commitment to sustainable tourism and environmental stewardship in the hospitality sector^[19].

One of the most significant barriers is the high initial cost associated with implementing sustainable technologies and practices. Many hotels, particularly smaller establishments, may lack the financial resources to invest in energy-efficient systems, waste management solutions, or renewable energy sources. This financial burden can deter hotel operators from pursuing sustainability initiatives, as they may prioritize immediate profitability over long-term environmental benefits^[22].

Although there are regulations promoting sustainability in the hotel sector, navigating these

regulations can be complex. The existing regulatory framework may not provide sufficient incentives or support for hotels to adopt sustainable practices. Additionally, some hotels may struggle to comply with regulations due to a lack of clear guidelines or resources for implementation. This regulatory uncertainty can create hesitation among hotel operators to invest in sustainability measures^[15].

Operational challenges also play a significant role in hindering sustainability efforts. Many Greek hotels operate within a highly competitive market where cost-cutting measures are often prioritized over environmental considerations. This competitive pressure can make it difficult for hotels to allocate resources toward sustainability initiatives. Furthermore, smaller hotels may lack the staff expertise necessary to implement and manage sustainable practices effectively^[25].

Cultural attitudes toward sustainability can significantly influence the adoption of sustainable practices in the hospitality sector. In some instances, there is a perception that sustainability may conflict with the image of luxury or high-quality service, which can discourage hotels from implementing eco-friendly initiatives^[22]. Furthermore, if market demand for environmentally conscious accommodations does not strongly impact consumer preferences, hotel operators may feel less motivated to prioritize and invest in sustainability measures^[19].

Hotel managers' attitudes are crucial in driving sustainability in the hospitality sector. Those who prioritize sustainability implement energy-saving and waste-reduction practices, foster employee engagement, embrace innovation, and leverage eco-friendly efforts as marketing tools to attract conscious travelers. Their commitment also ensures regulatory compliance and access to green funding opportunities. Conversely, negative attitudes can hinder progress, highlighting the importance of cultivating a proactive sustainability mindset for long-term environmental and economic benefits.

Sustainable practices in Greek hotels not only benefit the environment but also enhance competitiveness by improving guest satisfaction, increasing bookings, reducing costs, differentiating from competitors, complying with regulations, and contributing positively to local economies. By addressing the challenges and opportunities outlined, Greece can solidify its position as a leader in sustainable tourism, aligning with global sustainability goals and supporting local communities.

This study contributes to SDG 7 (Affordable and Clean Energy) by tackling the specific renewable energy challenges faced by non-interconnected islands, and to SDG 12 (Responsible Consumption and Production) by emphasizing the adoption and promotion of sustainable practices within the hospitality industry. These efforts underscore the research's practical role in fostering global sustainability initiative

Future vision

Sustainability must become a cornerstone of Greece's tourism identity. By aligning with global frameworks like the European Green Deal, Greek hotels can enhance their competitiveness while preserving the natural beauty and cultural heritage that attract millions of visitors annually.

Expanding research, launching consumer education campaigns, and fostering collaboration across sectors will be essential for maintaining competitiveness and preserving Greece's unique cultural and environmental heritage.

Urgent action is needed to address environmental challenges, such as resource inefficiencies, climate change impacts, and increasing demands from eco-conscious travelers. Sustainability is no longer an option—it is essential for ensuring that Greece's tourism industry thrives amid growing global competition and ecological pressures.

Pathways forward

To sustain progress in promoting sustainable tourism in Greece, it is essential to implement a multifaceted strategy. First, expanding research through region-specific studies will help identify tailored sustainability solutions that address local challenges and opportunities. Second, launching national consumer education campaigns will emphasize the importance of choosing eco-certified accommodations, thereby fostering a more informed traveler base and encouraging responsible tourism choices^{[8][27][28]}.

Finally, collaboration across sectors is crucial; uniting government, industry, and academia can drive innovation and scalability in sustainable practices, ensuring that Greece remains competitive in the global tourism market while preserving its unique cultural and environmental assets^{[27][28][29]}.

To achieve transformative change in the Greek hotel sector, a multifaceted strategy must be translated into

actionable steps that deliver both immediate and long-term results. Key actions include:

1. Expanding Research and Data Utilization:

- Conduct region-specific studies to identify tailored sustainability solutions addressing local challenges.
- Develop metrics to monitor the progress of sustainability initiatives, enabling data-driven decision-making.

2. Launching Consumer Education Campaigns:

- Promote eco-certified accommodations through national awareness campaigns, encouraging travelers to prioritize sustainability when choosing accommodations.
- Highlight success stories of sustainable hotels, fostering greater transparency and building consumer trust.

3. Collaborating Across Sectors:

- Establish partnerships between government bodies, academic institutions, and private enterprises to co-develop innovative solutions.
- Create shared funding programs to mitigate the high initial costs of implementing sustainable technologies.

4. Incentivizing Immediate Action:

- Provide grants, tax relief, and low-interest loans for sustainability investments, targeting small and medium-sized hotels.
- Introduce regulatory requirements that mandate environmental reporting and certifications within a defined timeline.

5. Accelerating Technological Integration:

- Promote the adoption of IoT systems for real-time resource management, reducing waste and energy inefficiencies.
- Facilitate the deployment of renewable energy systems tailored to the unique conditions of non-interconnected islands.

The future of Greece's hotel sector is at a critical juncture, with sustainability no longer a competitive advantage but an existential requirement. Failure to adapt will not only compromise the industry's long-term viability but also risk the erosion of Greece's reputation as a leading global tourism destination.

This study underscores the urgent need for collaborative efforts, emphasizing that embedding sustainability is the only pathway to ensuring that Greek hotels remain resilient, profitable, and aligned with global standards. Immediate action, supported

by robust policies and investments, will position Greece as a leader in sustainable tourism, preserving its legacy for generations to come.

References

- ¹Deloitte-INSETE Sustainability Report, (2023), "Sustainability in the Greek tourism market", Paving the way for sustainable tourism growth. <https://www2.deloitte.com/gr/en/pages/consumer-business/articles/deloitte-s-study--sustainability-in-the-greek-tourism-market-202.html>
- ²Greece Introduces Sustainability-Focused Hotel Rating System, (2024), <https://greekcitytimes.com/2024/11/22/greece-sustainability-hotel/>
- ³Greece's Sustainability-based Hotel Rating System Moving Forward (2024), <https://news.gtp.gr/2024/11/20/greeces-sustainability-based-hotel-rating-system-moving-forward/>
- ⁴Metaxa Hospitality Group Building Sustainable Suppliers, (2024). <https://www.metaxahospitality.gr/about/sustainability/sustainable-suppliers/>
- ⁵Papallou E, Katafygiotou M, Dimopoulos T. (2024). "Emerging Sustainability Trends in Tourist Facilities: A Comparative Assessment of Multiple Hotels and Resorts". *Sustainability*. 16 (9): 3536. doi:10.3390/su16093536.
- ⁶^a, ^bLenzen M, Sun Y-Y, Faturay F, Ting Y-P, Geschke A, Malik A. (2018). "The carbon footprint of global tourism". *Nature Climate Change*. 8 (6): 522-528. doi: 10.1038/s41558-018-0141-x.
- ⁷Sharma GD, Taheri B, Gupta M, Chopra R. (2023). Over 33 years of the hospitality research: a bibliometric review of the international journal of contemporary hospitality management. *International Journal of Contemporary Hospitality Management*. 35(7): 2564-2589.
- ⁸^a, ^b, ^cUNWTO. (2023). *Tourism Climate Action Framework*. Retrieved from <https://www.unwto.org/climate-action>.
- ⁹<https://www.fourseasons.com/athens/services-and-amenities/sustainability/>
- ¹⁰^a, ^b<https://www.royaltyhotellathens.gr/sustainability-eco/>
- ¹¹^a, ^b, ^c, ^dKapiki S. (2012). Implementing Sustainable Practices in Greek Eco-Friendly Hotels. *Journal of Environmental Protection and Ecology*. 13: 1117-1123.
- ¹²<https://hhotels.gr/blog/our-sustainable-hotels-in-greece/>
- ¹³Institute for Tourism Research and Forecasts (ITEP). *Sustainability in the hospitality industry: Energy efficiency and green practices in Greek hotels* [Internet]. ITEP; 2023. Available from: <https://www.itep.gr/en/review/sustainability-practices-of-greek-hotels-and-educational-needs-on-sustainability-issues/>
- ¹⁴^a, ^b, ^cEmerging Sustainability Trends in Tourist Facilities: A Comparative Assessment of Multiple Hotels and Resorts. (2024). *Sustainability*, 16(9), 3536.
- ¹⁵^a, ^b, ^c, ^d, ^e, ^f, ^g, ^h, ⁱPapaioannou A, Koronios K, Ntasis L, Yfantidou G. (2024). Total Quality Management in Sport Tourism and the Hospitality Industry: The Case of Greek Luxury Resorts. *Sustainability*. 16(5): 1894.
- ¹⁶^a, ^b, ^c, ^dBertolazzi A, Croatto G, Damianidou A, Turri ni U. (2024). Energy Refurbishment of Hotels in Greece and Italy: The Validation of SOLEH Expeditive Tool. *Springer Conference Proceedings*.
- ¹⁷^a, ^b, ^cKatsoni V, Cassar G. (2024). Recent Advancements in Tourism Business, Technology, and Social Sciences. Springer.
- ¹⁸^a, ^b, ^c, ^dGreen Globe. (2023). *Sustainability Certification Trends*. Retrieved from <https://greenglobe.com>.
- ¹⁹^a, ^b, ^c, ^d, ^e, ^f, ^g, ^h, ⁱEuropean Commission. (2023). *Sustainable Tourism in the European Green Deal*. Retrieved from <https://ec.europa.eu/>.
- ²⁰^a, ^bIEA. (2023). *Sustainability in Hospitality*. DOI: 10.1108/IJCHM-12-2022-0435
- ²¹Skordoulis M, Stavropoulos A-S, Papagrigoriou A, Kalantonis P. (2024). "The Strategic Impact of Service Quality and Environmental Sustainability on Financial Performance: A Case Study of 5-Star Hotels in Athens". *Journal of Risk and Financial Management*. 17 (10): 473. doi:10.3390/jrfm17100473.
- ²²^a, ^b, ^c, ^dChivandi A, Sikhauli M, Mlilo T. (2023). "Green Innovation Sustainability & Green Practice Behaviours in Tourism & Hospitality". *Athens Journal of Tourism*. 10 (2): 99-124. doi:10.30958/ajt.10-2-2.
- ²³Money-Tourism, (2024), "GBR Consulting: Greek Tourism faces challenges | Steps to strengthen its competitiveness", <https://money-tourism.gr/en/gbr-consulting-greek-tourism-faces-challenges-steps-to-strengthen-its-competitiveness/>
- ²⁴^a, ^bVelissariou E, Gerolymos V. (2012). "Environmental management in the Greek Hotel industry Survey in the hotels of the Dodecanese islands". *Oral - MIBES*, 25-27 May 2012, Velissariou-Gerolymos, 381-395
- ²⁵^a, ^b, ^c, ^dMykonos Regional Development Authority. *Development of Mykonos: Circular economy and sustainability in tourism practices* [Internet]. 2023. Available from: https://news.gtp.gr/2022/02/09/mykonos-sets-groundwork-for-sustainable-tourism-development/?utm_source=chatgpt.com

26. [^]ATHEX ESG Reporting Guide. (2024). Sustainability Metrics. Athens Stock Exchange.
27. ^a, ^bDeloitte-INSETE. Comprehensive sustainability trends in Greek tourism enterprises [Internet]. Deloitte and INSETE; 2024. Available from: https://www2.deloitte.com/gr/en/pages/consumer-business/articles/deloitte-s-study--sustainability-in-the-greek-tourism-market-202.html?utm_source=chatgpt.com
28. ^a, ^bDeloitte-INSETE. Sustainability in Greek tourism: A pathway to competitive advantage [Internet]. Deloitte and Institute of Greek Tourism Enterprises (INSETE); 2024. Available from: https://www2.deloitte.com/gr/en/pages/consumer-business/articles/deloitte-s-study--sustainability-in-the-greek-tourism-market-202.html?utm_source=chatgpt.com
29. [^]Mitsis S. (2023), "Tourism is changing and success should be the only way forward" <https://www.marketinggreece.com/en/blog-en/the-sustainable-tourism-development-and-the-next-day-of-greek-tourism>

Declarations

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.