



ULST Timisoara
**Multidisciplinary Conference on
Sustainable Development**
21-22 May 2026



ARE HOTEL BUSINESSES READY FOR CLIMATE CHANGE?

Ömer Yavuz¹, Muammer Mesci²

¹Düzce University / Akçakoca Vocational School, Düzce, Türkiye | ²Düzce University / Tourism Faculty, Düzce, Türkiye

Abstract: This study reveals potential impacts of climate change on hotel businesses and suggests mitigation measures in a conceptual framework. Hotels are implementing strategies such as adopting renewable energy, improving energy efficiency, waste management and water conservation. Sustainability practices are essential for crisis management and risk analysis.

Keywords: Hotel Management, Climate Change, Greenhouse Gas Emissions, Sustainability, Water Conservation.

• Introduction

The environmental impact of global tourism has become vital for the hospitality industry. Hotel businesses are affected by climate change both directly (physical damage to structures and revenue) and indirectly (changing tourist preferences). The tourism sector accounts for approximately 5% of global CO₂ emissions. Rising temperatures, extreme weather events, and evolving sustainability trends require hotels to adapt proactively. Climate models project temperature rises of 2.6-4.8 degrees C and sea level rise of 0.45-0.82 m by end of century (Nicolls, 2014).

• Research Methodology

This study is designed as a conceptual preliminary research. Existing literature on climate change impacts on hotel businesses was analyzed through bibliometric analysis. Key concepts including greenhouse gases, global warming, and climate change were defined and examined within a theoretical framework. Findings were evaluated to offer practical suggestions to the field. The study will be further developed by adding empirical application in subsequent phases.

• Key Impacts on Hotels

Extreme weather events (storms, floods, droughts) can cancel reservations and damage facilities. Sea level rise threatens coastal properties. Water scarcity limits hotel operations. Rising temperatures lead to more severe heat waves. Changing climate conditions reshape tourist destination preferences and seasonal demand patterns.

• Results and Discussions

Studies show mixed awareness among hospitality managers on climate change. Some research (Hess, 2021; Dodds and Kelman, 2008) indicates low awareness and poor risk perception. Barriers to adaptation include: limited knowledge, limited financial resources, lack of sector cooperation, inadequate policies, and low local government leadership. Effective hotel strategies identified in the literature include:

- Renewable energy adoption (solar panels, wind energy)
- Smart HVAC and LED lighting for energy efficiency
- Water-saving measures (low-flow fixtures, rainwater harvesting)
- Comprehensive waste reduction and recycling programs
- Staff and guest education on sustainable practices

• Conclusions

Climate change is an urgent issue requiring immediate action from the hotel sector. Key strategies for adaptation and mitigation include: investing in energy-efficient technologies and renewable energy sources, implementing water-saving practices (rainwater harvesting, smart irrigation), adopting sustainable food sourcing to reduce carbon footprint, and conducting educational initiatives for staff and guests. Overcoming barriers such as financial constraints and limited awareness requires collaboration between businesses, policymakers, and NGOs. Sustainable practices not only reduce environmental impact but also attract eco-conscious tourists and build long-term competitive advantage.