

# Chapter 5

## Future Trends and Opportunities of Waste-to-Energy Innovations Drive in the Tourism Industry

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### ABSTRACT

*This chapter presents a systematic literature review and bibliometric analysis of Waste-to-Energy (WiE) research, focusing on its integration into sustainable tourism practices. A search of Scopus and Web of Science databases identified 179 records, which were filtered by language, relevance, and quality. The analysis reveals a growing body of work with 113 documents from 89 sources, showing significant international collaboration (19.47%) and an average citation count of 22.74. Key themes include WiE technology innovation, sustainable development, and its role in sustainable*

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*tourism. Prominent journals like the Journal of Environmental Management and Waste Management, and influential studies by Kammen and Sunter (2016) and Ma and Liu (2019) highlight the field's dynamic nature. Leading contributors are University Technology Malaysia and North China Electric Power University, with notable impacts from the USA, China, and India. Future research should explore emerging technologies and policy implications for advancing sustainability in waste management and tourism.*

## **I. INTRODUCTION**

### **A. Significance of the Tourism Industry in the Global Economy**

The tourism industry is a critical component of the global economy, representing one of the largest and fastest-growing sectors worldwide. Its influence extends beyond mere economic contributions, acting as a catalyst for economic development, job creation, and international collaboration (Lew, 2011; Zhou, 2022). The sector's ability to generate substantial foreign exchange earnings and stimulate infrastructure development is particularly evident in emerging economies, where tourism can constitute a significant portion of GDP and serve as a vital source of economic resilience (Kumar et al., 2015; Khan et al., 2020; Nguyen, 2021).

In many regions, the tourism industry serves as a key driver of economic diversification, providing employment opportunities across a wide spectrum of skills and fostering inclusive growth (Mehraj et al., 2023; Sarfraz et al., 2023). This is especially pertinent in regions where alternative economic opportunities are limited, making tourism a linchpin of economic stability and growth. However, the rapid expansion of tourism has not come without significant environmental costs. The industry is increasingly associated with negative externalities, including resource depletion, habitat destruction, and substantial waste generation (Gössling, 2002; Neto, 2003). These environmental challenges are particularly pronounced in popular tourist destinations, where the ecological balance is at risk due to the unsustainable practices associated with mass tourism (Mycos, 2006; Kasim, 2007).

As the global demand for tourism continues to rise, the industry faces mounting pressure to reconcile its economic benefits with the need for environmental sustainability. The imperative to adopt sustainable practices is driven by both regulatory pressures and the growing environmental consciousness of consumers. Among the most pressing issues is the management of waste generated by tourism activities, which, if not properly addressed, could undermine the long-term viability of the industry and the natural environments on which it depends.

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