Chapter 5
The Role of Artificial Intelligence in Driving Sustainability in the Tourism Industry:
A Marketing Perspective

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ABSTRACT

Artificial intelligence (AI) is showing promise as a potent tool to advance the tourism industry's efforts to embrace sustainable practices in the face of mounting demand. This study looks at AI's potential to advance sustainability in the travel and tourism industry from a marketing standpoint. It investigates how resource management, client interaction, and tailored travel experiences may all be enhanced by AI-driven technology while still adhering to sustainability objectives. By leveraging predictive analytics, AI can forecast demand more accurately, reducing resource waste and environmental impact. AI-powered chatbots and virtual assistants foster meaningful interactions with eco-conscious travellers, promoting sustainable options and building trust. Ultimately, this paper highlights how integrating AI into marketing strategies is essential for tourism businesses to attract and retain environmentally conscious customers, positioning themselves as leaders in responsible tourism.

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INTRODUCTION AND BACKGROUND OF STUDY

With sustainability at the forefront of various industries, this foundation of the global budget is undertaking a seismic shift in approach. Driven by the growing awareness of the environmental, community and financial consequences of tourism, stakeholders are realizing that innovation in this field is necessary to balance sustainable growth with ecological responsibility. At the heart of this transformation is Artificial Intelligence (AI), the technological marvel that will redefine modern marketing. AI is extremely lucrative for predicting trends, analyzing data, and optimizing the customer experience — but this potential makes it one-of-a-kind in helping to promote more sustainable travel practices. From increasing efficiencies through optimal resource usage to providing personalized engagements, assisting travelers in every step of their journey,

, AI is touted as a technology for promoting sustainable tourism development (Singh & Bathla, 2023; Sharma & Singh, 2024a,By leveraging AI-driven insights, businesses can design and implement marketing strategies that not only attract environmentally conscious travelers but also reduce the carbon footprint of their operations. This synergy between AI and sustainability is fostering a new paradigm in tourism marketing, where the focus is on creating meaningful and responsible travel experiences. This paper explores the pivotal role of AI in advancing sustainability within the tourism industry from a marketing perspective. It delves into the various AI applications that are enabling sustainable practices, examines the benefits and challenges of adopting AI in tourism marketing, and highlights case studies of successful implementations. Through this exploration, we aim to elucidate how AI can drive a more sustainable future for tourism, ensuring that this vital sector can thrive without compromising the planet's health Ansari & Singh, 2024; Singh & Ansari, 2024; Singh & Kumar, 2024; Singh & Supina, 2024; Sharma & Singh, 2024b; Ansari & Singh, 2023; Ansari et al., 2023; Ambardar & Singh, 2017; Ambardar et al., 2022; Francis et al., 2024; Ansari & Singh, 2024]. Until date, the majority of research has been restricted to technical and design-oriented engineering domains that emphasise problem-solving and technology solutions. IS researchers have an opportunity because there hasn't been any theoretical progress on the use of AI for sustainability. Focussing on AI for sustainability is the next logical step for the Green IS (IS for sustainability research) subdomain, which will deepen our comprehension of Green IS solutions. Sustainability was described by the Brundtland Commission as “development that satisfies the requirements of the present without sacrificing the potential to economy, and society. The literature typically addresses each component separately using a reductionist methodology. Artificial intelligence (AI) refers to computer programs that are able to solve issues and accomplish tasks. (Three categories can be created by rearranging this ability: (1)