

Research Article

# Sustainable Tourism: The Future of 2050 in Terms of Innovation, Technology, and Resilience of Tourism Destinations

Furqan<sup>1\*</sup>, Yogi Putra<sup>2</sup>, Femmy Indriany Dalimunthe<sup>3</sup>

<sup>1</sup>Universitas Katolik Santo Thomas Medan, Indonesia; e-mail: [furqanjarkam@gmail.com](mailto:furqanjarkam@gmail.com)

<sup>2</sup>Politeknik LP3I Medan, Indonesia; e-mail: [ogitra@gmail.com](mailto:ogitra@gmail.com)

<sup>3</sup>Politeknik Pariwisata Medan, Indonesia; e-mail: [furqanjarkam@gmail.com](mailto:furqanjarkam@gmail.com)

\*Corresponding Author: [furqanjarkam@gmail.com](mailto:furqanjarkam@gmail.com)

**Abstract.** The tourist industry is undergoing a significant upheaval, owing to technology improvements, sustainability demands, and rising global uncertainties such as pandemics, climate change, and economic crises. The purpose of this study is to look at the future of sustainable tourism in 2050 by studying the interaction between innovation, digital technology, and tourist destination resilience. The study performed a Systematic Literature Review (SLR) in conjunction with bibliometric analysis. Data were gathered from scholarly papers indexed in Google Scholar, Scopus, and Web of Science databases, then chosen using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method. According to the findings, contemporary tourism studies have emphasized innovation, smart tourism technology, and destination resiliency. Artificial Intelligence (AI), Big Data, Internet of Things (IoT), Augmented Reality (AR), and digital platforms all play important roles in improving destination management, boosting guest experiences, and achieving sustainability objectives. Furthermore, destination resilience is acknowledged as an important aspect in dealing with future crises and guaranteeing long-term tourist viability. The report presents an integrated framework and roadmap for 2050 that focuses on the synergy of innovation, technology, and resilience as the foundation for future intelligent, adaptable, and sustainable tourist destinations.

**Keyword:** Destination Resilience; Digital Technology; Innovation; Smart Tourism; Sustainable Tourism; Tourism 2050.

## 1. Introduction

Global tourism is fast shifting to digital and sustainable practices, but it is also dealing with significant shocks like the pandemic and climate crises. Global problems that are producing these crises, including as conflict, the COVID-19 pandemic, and climate change, are altering the nature of tourism and necessitating the development of a new model for final destination resilience (Sharma et al., 2021; Sharma et al., 2024; Traskevich & Fontanari, 2023). Global tourism has collapsed as a result of COVID-19, necessitating the development of a resilience based framework with pillars of technology innovation, local participation, government responsiveness, and employee/tourist trust (Sharma et al., 2021). Sustainability pressures More sustainable as well as digitalized destination-based models are being driven by overtourism, pollution, economic dependence, and the SDGs (Rodrigues et al., 2022; Santos et al., 2021; Krittayaruangroj et al., 202; Ahmed, 2025). Similarly, smart tourism (AI, big data, AR/VR, IoT, digital platforms), the adoption of digital technologies, and the fourth industrial revolution are altering traveler behavior and management of destinations, but acceptance is still unequal (Pilelienė et al., 2024; Loureiro & Nascimento, 2021).

The primary gap is considered to be the theoretical framework and evaluation of resilience in evaluating destination resilience, includes performance indicators (Corte et al., 2021; Wang et al., 2022). Technology that promotes resilience and sustainability. There are several research on technology for sustainable destinations, but a thorough knowledge of the framework, user habits, long term implications, and stakeholder based governance is inadequate (Archi et al., 2023; Pilelienė et al., 2024). A scientific map illustrating the link between advances in technology, and resilience. As a result, it is included in a distinct bibliometric analysis from the destination resilience Wang et al. (2022), digital technologies for long-term destinations Archi et al. (2023) and Varolgüneş et al. (2025), innovative approaches to sustainable tourism Pilelienė et al. (2024) and Santos et al. (2021), smart tourism of destination (Yan et al., 2025; Manzano et al., 2020). Based on the research gaps mentioned

Received: January 03, 2026;

Revised: March 13, 2026;

Accepted: May 08, 2026;

Published: June 22, 2026;

Curr. Ver.: June 22, 2026



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above, there has not been a complex bibliometric analysis study on innovation, technology, and destination resilience in the picture of sustainable tourism in the future.

This study is unique in that it includes innovation, digital technology/smart tourism, and destination resilience in a single cross disciplinary bibliometric analysis, whereas previous research has often focused on either one or two variables (Corte et al., 2021; Wang et al., 2022; Archi et al., 2023). Most literature analysis only map current trends and general research priorities, hardly none specifically define anticipated pathways for long term and resilient tourism in 2050 (Pilelienė et al., 2024; Loureiro & Nascimento, 2021). By filling the gaps in resilience measurement and technology integration, your study has the potential to propose an indicator framework and a roadmap for research and implementation agendas towards 2050 (Wang et al., 2022).

## 2. Metode

This work employs a Systematic Literature Review (SLR) technique in conjunction with bibliometric analysis to discover, map, and assess research advancements on tourism destination innovation, technology, and resilience in the context of sustainable tourism in 2050. SLR is used to create a systematic, transparent, and reproducible literature review, whereas bibliometric analysis is utilized to map intellectual structures, research trends, author partnerships, and advances in key study areas. According to Snyder (2019) defines a systematic literature review as a strategy for methodically identifying, evaluating, and synthesizing all scientific information relevant to a study issue. This strategy is increasingly being employed in the tourist industry to provide a thorough synthesis of knowledge while lowering the chance of research mistakes.

This analytic approach was used to chart the progression of research into sustainable tourism, technology innovation, and tourist destination resiliency. According to Donthu et al. (2021), bibliometric analysis is a quantitative tool for evaluating and visualizing the evolution of a scientific topic through scholarly publications. This study followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) standards, which include four major stages: selecting national and international scientific publications from the SCHOLAR, Scopus, and WOS databases. After selecting the scientific journals, all gathered publications were inspected, followed by a thorough examination of the abstracts, methods, findings, and conclusions of the articles to guarantee their relevance to the study topic. Articles that passed all PRISMA phases served as the study's final sample. These papers were utilized in the bibliometric analysis and literature synthesis procedures (Page et al., 2021).

## 3. Result and Discussion

### The Development of Sustainable Tourism Research until 2050

According to a literature analysis, sustainable tourism research has expanded rapidly in the aftermath of the COVID-19 epidemic. Most studies identify sustainability, digitization, and destination resilience as significant elements influencing tourist destinations' future competitiveness. According to Sharma et al. (2021), the pandemic has altered the tourist development paradigm from a growth-oriented strategy to one focused on resilience and sustainability. Meanwhile, Santos et al. (2021) and Rodrigues et al. (2022) discovered that environmental concerns, overtourism, and the need to achieve the Sustainable Development Goals (SDGs) have prompted a global shift in tourism destination management practices. The study also demonstrates that, as we approach 2050, the notion of sustainable tourism is becoming more inextricably linked to technological advances. Research suggests that utilizing AI, Big Data Analytics, IoT, AR, VR, and digital platforms can enhance tourism services and enhance destination management efficiency (Loureiro & Nascimento, 2021; Pilelienė et al., 2024).

According to study findings, the future of sustainable tourism is inextricably linked to the combination of innovation, technology, and destination resilience. These three parts work together to establish a tourism ecosystem that can solve global concerns such as climate change, health crises, economic uncertainties, and changes in visitor behavior. Unlike prior studies, which often only examined one or two issues independently, the outcomes of this study show that tourist growth in 2050 need a more comprehensive strategy. Innovation drives transformation, digital technology enables it, and resilience is the ultimate aim, assuring the long-term viability of destinations. These findings support Corte et al. (2021) claim that the capacity to incorporate innovation and resilience into a unified development framework determines the success of future tourism destinations.

### Smart and Long-term Sustainability Destinations as a Future Tourism Model

According to the examined literature, creativity is a critical aspect in developing tourism locations that are adaptable to global change. Innovation in tourism extends beyond product creation to government, marketing, resource management, and business strategies. According to Pilelienė et al. (2024), tourist locations that integrate sustainable innovation are better

equipped to adapt to market changes and visitor behavior dynamics. This is supported by Manzano et al. (2020), who argue that innovation is the primary basis for creating smart destinations capable of providing more customized and sustainable tourist experiences.

The report also reveals that the Smart Sustainable Destination idea has the potential to become the dominant paradigm for global tourism by 2050. This paradigm integrates smart technology with concepts of environmental, economic, and social sustainability. In this context, AI, Big Data, IoT, and digital platforms are crucial instruments for achieving adaptive and responsive destination governance. The use of technology allows for more precise control of visitor capacity, reduction of carbon emissions, greater energy efficiency, and conservation of the destination's natural resources. As a result, digital transformation should be a top priority in national and international tourist development initiatives.

Furthermore, social innovation through community engagement is an important aspect of future tourist growth. Community engagement not only improves the quality of the visitor experience, but it also boosts local economic advantages and contributes to the destination's social sustainability.

### **The Transformation of Smart Tourism via Digital Technology**

According to the study's findings, digital technology is a critical component in tourism's transition towards 2050. Technological advancements have altered visitor travel patterns, affecting everything from information search, booking, travel experiences, and post visit evaluation. According to Loureiro & Nascimento, (2021), smart tourism enables locations to gather and manage real-time tourist data, allowing for better informed decision making. This conclusion is corroborated by Archi et al. (2023), who state that digital technology helps to improve operational efficiency, decrease environmental impact, and maximize the use of destination resources.

Artificial intelligence technology is also expected to play a significant role in future tourism destination management. AI can help estimate tourism demand, manage visitor capacity, reduce the danger of overtourism, and improve the tourist experience through tailored services. Meanwhile, the adoption of IoT allows for constant monitoring of environmental conditions and visitor activities, facilitating data driven regulation.

Overall, the study's findings show that the future of tourism in 2050 will be determined by destinations' capacity to incorporate sustainable innovation, digital technology transformation, and resilience development. The combination of these three characteristics serves as the basic foundation for developing an adaptable, competitive, and sustainable tourism ecosystem in the face of global uncertainty.

## **4. Conclusion**

This comprehensive literature analysis finds that the effective integration of innovation, digital technology, and destination resilience as interconnected tourism development pillars will define the future of sustainable tourism through 2050. According to the literature, global issues such as climate change, pandemics, overtourism, environmental degradation, and economic instability have hastened tourism's shift from a growth oriented paradigm to one focused on sustainability and resilience. Innovation is critical in developing adaptive tourism products, services, governance models, and stakeholder collaboration, while emerging technologies such as AI, Big Data, Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), and digital platforms have become essential tools for enhancing destination management, improving visitor experiences, supporting data driven decision making, and achieving sustainability. Furthermore, destination resilience has emerged as a critical driver of long term competitiveness and sustainability, demonstrating destinations' ability to foresee, adapt to, and recover from a variety of crises and disturbances. The findings suggest that the development of Smart Sustainable Destinations represents the most relevant pathway toward tourism in 2050, requiring strong collaboration among governments, tourism industries, local communities, and other stakeholders to promote innovation driven development, digital transformation, environmental responsibility, and adaptive governance, thereby creating intelligent, inclusive, competitive, and sustainable tourism ecosystems capable of adding.

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