

Sustainable Tourism in the Age of Innovation: A Bibliometric Exploration of Progress and Potential

Tran Tuyen  ¹

1. University of Social Sciences and Humanities and Vietnam National University, Ho Chi Minh City, Vietnam

ABSTRACT

Innovation has become a defining trend across various socio-economic sectors, including tourism, where it plays a crucial role in enhancing efficiency, reducing costs, and maintaining competitiveness. Within the tourism industry, innovation encompasses technological advancements, strategic planning, and new business models aimed at optimizing operations and fostering sustainable development. However, despite the increasing recognition of tourism innovation and sustainability, there remains a limited understanding of how these two concepts intersect. While existing studies highlight the importance of innovation in tourism, research on its direct contribution to sustainable development is still fragmented. A more structured and comprehensive analysis is needed to bridge this gap and provide a clearer understanding of the evolving relationship between innovation and sustainability in tourism. To address this issue, this study conducts a semi-systematic literature review combined with bibliometric analysis of 181 publications sourced from the Scopus database. The findings reveal a growing body of research focused on technology adoption, digital transformation, corporate governance, destination management, and co-creation, all of which indicate a shift toward sustainability-driven innovation. This study makes two key contributions. Theoretically, it maps emerging research trends and identifies key thematic clusters, offering a structured framework for understanding innovation in sustainable tourism. Practically, it provides strategic insights for tourism businesses and policymakers, emphasizing technology integration, stakeholder collaboration, and sustainability-driven innovation as crucial for industry resilience.

KEYWORD

Innovation, Sustainable Tourism, Bibliometric, Literature Review.

ARTICLE HISTORY

Received 29 October 2024 Accepted 03 March 2025

1. Introduction

In recent years, innovation has become increasingly recognized as a pivotal driver of growth and competitiveness across diverse sectors of the economy, including the tourism sector (Santos et al., 2021; Meneses et al., 2024). This trend underscores the imperative for tourism stakeholders to embrace innovation as a means to enhance operational efficiency, reduce costs, and remain competitive in a rapidly evolving global landscape (Errichiello & Marasco, 2017; Meneses et al., 2024).

Innovation is widely defined as the implementation of novel ideas, applications, or processes aimed at improving existing conditions to develop new products, enhance product value, and boost operational performance (Molina et al., 2017; Santos et al., 2021). Consequently, innovation encompasses various forms such as product innovations, classical process innovations, process innovations in information handling, management innovations, and institutional innovations (Hjalager, 1997; Brooker & Joppe, 2014).

Within the tourism sector, innovation involves efforts to introduce new ideas, processes, or advancements in science and technology to optimize the efficiency of the tourism industry (Hjalager, 1997). This, in turn, aims to enhance the tourist experience and generate positive outcomes for local communities. Innovation in tourism spans across multiple dimensions, including product, process, service, and economic changes, among others. Additionally, the concept of sustainable tourism development has considered as an essential framework for ensuring the long-term viability of tourism activities while minimizing negative environmental, socio-cultural, and economic impacts (Fayos-Solà & Cooper, 2018b; Ratten et al., 2019; Salvatore et al., 2021). Sustainable tourism seeks to balance the needs of present and future generations, emphasizing the preservation of natural resources, cultural heritage, and local communities (Salvatore et al., 2021).

Innovation is essential for sustainable tourism, optimizing resource use while minimizing negative impacts on destinations. Smart technologies, such as data analytics and IoT, enhance destination management by improving visitor flow, reducing waste, and promoting eco-friendly behaviors. Sustainable tourism also benefits from innovative practices like circular economy principles, renewable energy, and low-emission transport, reducing environmental harm while enhancing visitor experiences. Additionally, forward-thinking policies and public-private collaborations support balanced tourism growth, ensuring long-term economic, social, and environmental benefits.

By embracing innovation, the tourism industry can achieve sustainability, preserving natural and cultural heritage while meeting evolving market demands. Despite the growing recognition of the importance of tourism innovation and sustainable development, there remains a notable gap in our understanding of the intersection between these two concepts (Santos et al., 2021; Meneses et al., 2024). While individual studies have explored aspects of innovation or sustainable tourism in isolation, there is a need for comprehensive research that examines the synergies and interrelationships between innovation practices and sustainable tourism development strategies.

This study aims to address this gap by conducting an examination of the literature on tourism innovation and sustainable development. It seeks to identify prevailing trends, key themes, and emerging areas of research within this domain through a semi-systematic literature review and bibliometric analysis. By doing so, the study aims to provide insights that can inform future research and contribute to the advancement of knowledge in the field of sustainable tourism development.

Our findings underscore the need for policymakers, industry stakeholders, and researchers to prioritize innovation in sustainable tourism development initiatives. By identifying key innovation themes and trends, our study provides valuable insights that can inform the design and implementation of strategies aimed at promoting sustainable tourism practices. Furthermore, our analysis highlights the novelty of integrating innovation into the discourse on sustainable tourism, emphasizing the potential for innovative approaches to drive positive environmental, socio-cultural, and economic outcomes within the tourism sector.

2. Methodology

2.1 Database

In this study, the Scopus database was utilized to search for publications related to the research topic. Although the Web of Science (WoS) database was also considered, the number of studies found largely overlapped with publications on the Scopus database, thus ensuring coverage and updates when Scopus was employed.

The Scopus database is widely acknowledged as a crucial resource owing to its vast repository of respected scientific literature, rendering it an excellent choice for conducting comprehensive and up-to-date research (Sánchez et al., 2017). Furthermore, this research utilizes Google Scholar alongside various reputable domestic and foreign databases, including Web of Science, ProQuest, IEEE Xplore, SpringerLink, etc. These supplementary sources play a vital role in enhancing the breadth and depth of our bibliometric analysis discussions beyond what is accessible through the Scopus database alone.

2.2 Data Collection Process

To investigate the literature of tourism innovation and sustainable development, this study employs a semi-systematic literature review, utilizing descriptive statistics (Ali et al., 2019) and bibliometric analysis (Sánchez et al., 2017). This method is instrumental in exploring prevalent research themes within tourism innovation and sustainable development and provides descriptive statistics about these works within the Scopus data system. Semi-systematic literature review is fundamental for gaining understanding of the research problem (Torraco, 2005), enabling future studies on the same topic to identify research gaps and enhance their ability to make meaningful scientific contributions (Snyder, 2019). The study employed the review procedure outlined by Templier and Paré (2015), which involves systematic steps for data search and publication selection:

Step 1: Research Search Techniques

After conducting thorough searches with various keywords and syntaxes, the study concludes by establishing the most effective search syntax for locating research works directly relevant to the chosen topic. The search syntax used was: ("tourism" AND innovation OR innovative) AND "sustainable" OR "sustainability" in topic (title, abstract, keywords).

In order to get these keywords, the study conducted a fast search on Google Scholar, looking at the titles of pertinent research papers and identifying key terms that reflected the research's content. This study aims to explore the topic of sustainable tourism in the age of innovation. Therefore, the selection of keywords such as ("tourism" AND innovation OR innovative) AND ("sustainable" OR "sustainability") is both appropriate and sufficient for identifying research works directly relevant to the subject. These keywords ensure the inclusion of studies that examine the intersection of tourism, innovation, and sustainability, thereby facilitating a comprehensive and focused literature review.

Step 2: Document Search

The search on the Scopus database found 3212 relevant publications by the end of 2024. Additionally, using the same keywords, the study searched the Web of Science (WoS) database, uncovering 2067 relevant publications. The initial search results indicated that including the title, abstract, and keywords in the search field yielded an extensive number of papers, many of which were not directly relevant to innovation and sustainable tourism. To enhance the precision of the literature selection and ensure a stronger alignment with the research focus, the search was subsequently restricted to the title field. This refinement aimed to identify studies that were more directly related to the core themes of the research.

The search results indicate a total of 211 papers on Scopus and 97 on Web of Science. Although the number of publications decreased significantly due to the refined search criteria, the selected papers are more directly aligned with the research problem. This ensures that the subsequent analysis remains focused, relevant, and specific to the study's objectives. Preliminary comparison revealed that these 97

publications largely duplicated those found on the Scopus database. This underscores the decision to primarily rely on the Scopus database due to its broad coverage and regular updates.

Step 3: Selection Criteria

Criteria were set to select against duplicate works, non-research article formats, publications in languages other than English, among other factors. Subsequent to this procedure, 181 documents were retained for further analysis.

Step 4: Preliminary Assessment of Data Quality

An initial evaluation of data quality included examining the titles to determine the relevance of the documents to the research topic. The results showed that the works were indeed relevant to the investigation of tourism innovation and sustainable development.

Step 5: Data Analysis and Synthesis

The data analysis and synthesis comprised two components: Descriptive statistics were conducted on research projects concerning tourism innovation and sustainable development, utilizing the 181 filtered documents. A bibliometric analysis of the 181 documents was performed to identify prevalent themes discussed within these publications.

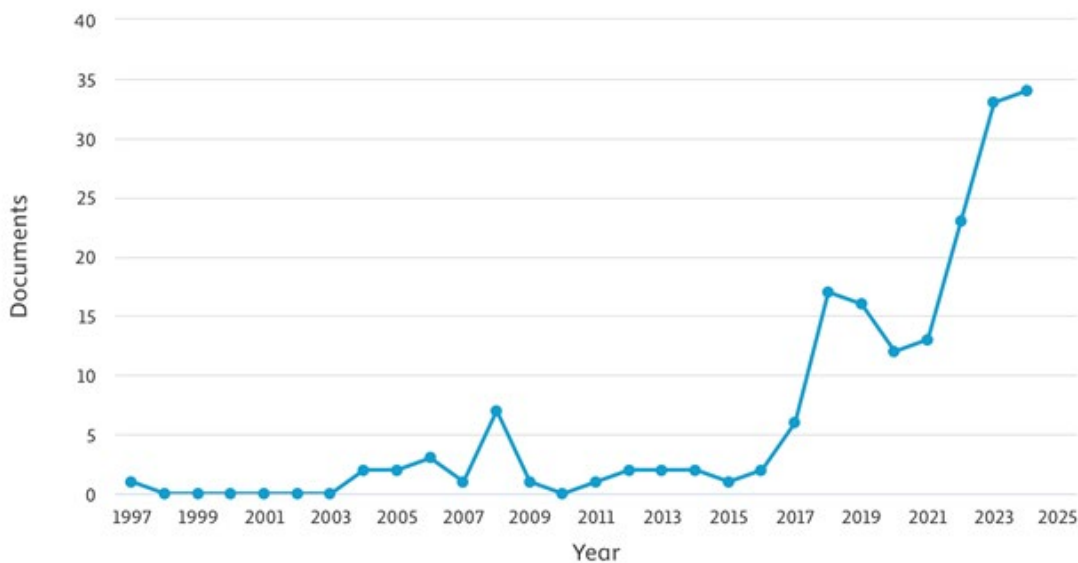
2.3 Data Analysis

The research employed two data analysis techniques: semi-systematic review and bibliometric analysis. In the semi-systematic review, basic information of the identified works such as number of publication over the years, research topics, prominent journals, and highly cited publications were analyzed (Meneses et al., 2024). This examination provided insights into research and publication trends regarding tourism innovation and sustainable development. Bibliometric analysis, conducted using VOS viewer 1.6.20 software, focused on detecting keyword networks and prominent authors (Liu et al., 2014). VOSviewer is a free and widely used tool for bibliometric analysis, enabling researchers to visualize and interpret complex research data. It effectively extracts and presents key research content through graphical representations, facilitating insights into trends, relationships, and developments within a given field. This analysis highlighted popular research topics within tourism innovation and sustainable development, offering a foundation for future investigations in the same field.

3. Results

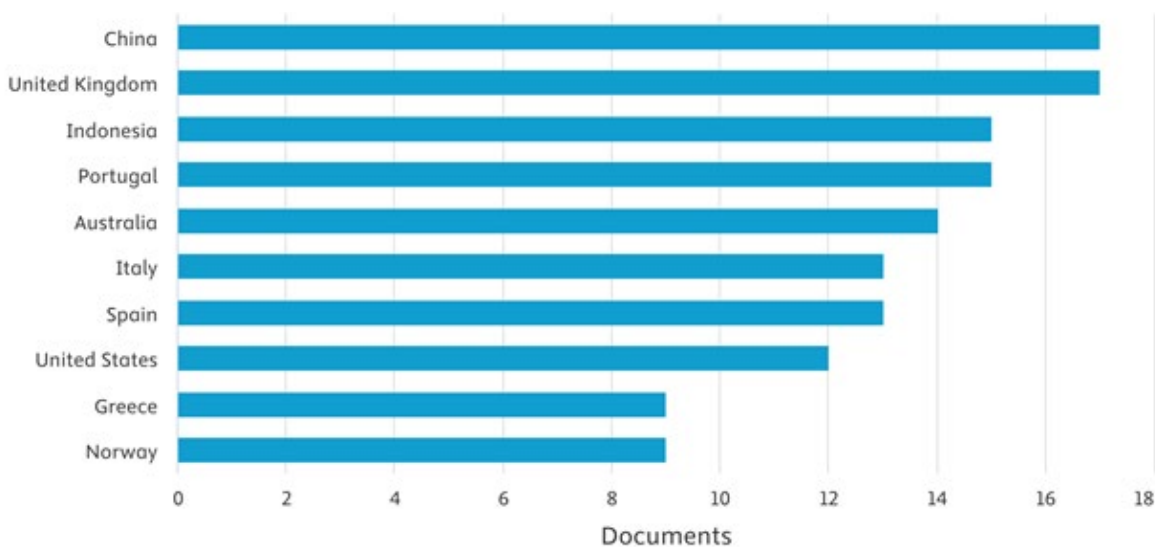
3.1 Publication Trends in the Field of Tourism Innovation and Sustainable Development

Between 1997 and 2024, the body of literature on innovation and sustainable tourism in the Scopus database has shown an upward trend, with occasional fluctuations (Figure 1). Notably, there was a decrease in publications from 2007 to 2015, followed by an increase in recent years. This trend underscores the sustained interest and importance of innovation and sustainable tourism as a research topic worldwide. The increasing number of publications related to tourism innovation and sustainable development demonstrates scholars' interest in this topic. By the end of 2024, there were 181 projects directly linked to tourism innovation and sustainable development on the Scopus database, with 34 papers added in that year alone. This trend is expected to continue as innovation plays a crucial role in improving the efficiency of tourism activities and minimizing negative impacts on society, thereby promoting sustainable tourism development.

Figure 1. Number of Publications Related to Innovation and Sustainable Tourism on the Scopus Database

Source: Own Elaboration

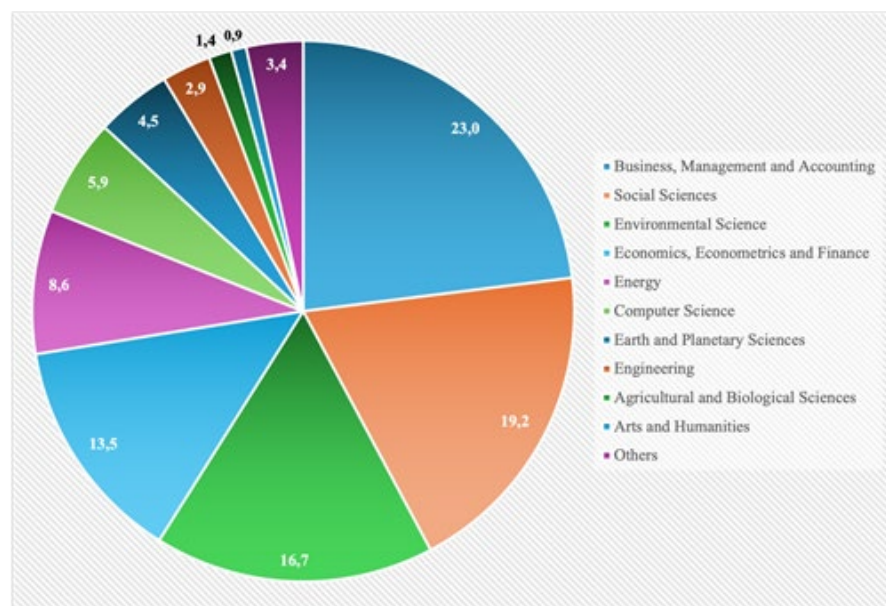
In terms of contributors per country, China and the UK emerge as leaders with 17 mentions each, followed by Indonesia and Portugal with 15, Australia with 14, Italy and Spain with 13, the United States with 12 (Figure 2). This pattern suggests a significant emphasis on innovation in the tourism sector among nations with advanced economies and societies, contributing to the promotion of sustainable development goals. Notably, Vietnam is represented by only two publications, originating from research conducted in Hanoi and Ho Chi Minh city (Vu Dinh et al., 2023). This underscores the necessity for Vietnam to actively participate in research and publishing attempts on this topic within international databases, underscoring the importance of global scholarly engagement in advancing efforts towards sustainable tourism development.

Figure 2. Number by Country of Publications Related to Innovation and Sustainable Tourism in the Scopus Database

Source: Own Elaboration

In terms of research topics, the majority of studies concentrate on the domains of Business, Management, and Accounting, constituting 23.0% (102) of the total publications (Figure 3). However, other fields also demonstrate substantial publication rates related to tourism innovation and sustainable development. Notably, Social Sciences account for 19.2% (85), Environmental Science for 16.7% (74), Economics, Econometrics, and Finance for 13.5% (60), and Energy for 8.6% (38) of the total publications. This indicates a diverse range of academic disciplines engaged in exploring the intersection of innovation and sustainable tourism, reflecting the multidimensional nature of this research topic.

Figure 3. Document by Subject Areas Related to Innovation and Sustainable Tourism in the Scopus Database



Source: Own Elaboration

Table 1 presents the top 10 academic sources with the highest number of publications related to innovation and sustainable tourism within the Scopus database. Sustainability (Switzerland) ranks first with 20 publications, highlighting its leading role in disseminating research at the intersection of sustainability and tourism innovation. Springer Proceedings in Business and Economics follows, with six papers, reflecting the importance of economic and business perspectives in sustainable tourism studies.

Table 1. Top 10 Sources with the Highest Number of Publications Related to Innovation and Sustainable Tourism on the Scopus Database

No	Source	Documents
1	Sustainability MDPI	20
2	Springer Proceedings In Business And Economics	06
3	Tourism And Hospitality Research	05
4	E3s Web Of Conferences	05
5	Economic Research Ekonomska Istrazivanja	04
6	Journal Of Sustainable Tourism	04
7	Iop Conference Series Earth And Environmental Science	03
8	Journal Of Cleaner Production	03
9	Journal Of Environmental Management And Tourism3	03
10	Tourism Recreation Research	03

Source: Own Elaboration

Several journals, including *Tourism and Hospitality Research* and *E3S Web of Conferences*, each contribute five publications, emphasizing the relevance of hospitality management and environmental sustainability discussions. *Economic Research* and the *Journal of Sustainable Tourism* each account for four documents, reinforcing their role as significant platforms for scholarly discourse on economic and sustainable tourism practices. Further down the list, *IOP Conference Series: Earth and Environmental Science*, *Journal of Cleaner Production*, *Journal of Environmental Management and Tourism*, and *Tourism Recreation Research* each contain three relevant publications. These sources represent a multidisciplinary approach, incorporating environmental science, resource management, and tourism research to explore sustainability and innovation in the field.

The table below presents the list of the 10 most cited publications related to innovation and sustainable tourism on the Scopus database. These publications reflect scholars' keen interest in prior research and provide foundational insights into the fields of innovation and sustainable tourism.

Table 2. List of 10 Most Cited Publications Related to Innovation and Sustainable Tourism on the Scopus Database

No	Documents	Author	Source	Year	Citations
1	Social capital, tourism and regional development: SPCC as a basis for innovation and sustainability	Macbeth, J., Carson, D., Northcote, J.	<i>Current Issues in Tourism</i> , 7(6), pp. 502–522	2004	181
2	Sustainable tourism in the open innovation realm: A bibliometric analysis	Della Corte, V., Del Gaudio, G., Sepe, F., Sciarelli, F.	<i>Sustainability (Switzerland)</i> , 11(21), 6114	2019	163
3	Innovation patterns in sustainable tourism: An analytical typology	Hjalager, A.-M.	<i>Tourism Management</i> , 18(1), pp. 35–41	1997	157
4	Sustainable Tourism Innovation: Challenging Basic Assumptions	Moscardo, G.	<i>Tourism and Hospitality Research</i> , 8(1), pp. 4–13	2008	130
5	Sustainability-Oriented Innovation in Tourism: An Analysis Based on the Decomposed Theory of Planned Behavior	Garay, L., Font, X., Corrons, A.	<i>Journal of Travel Research</i> , 58(4), pp. 622–636	2019	120
6	Sustainability in tourism as an innovation driver: An analysis of family business reality	Elmo, G.C., Arcese, G., Valeri, M., Poponi, S., Pacchera, F.	<i>Sustainability (Switzerland)</i> , 12(15), 6149	2020	103
7	Tourists' Health Risk Threats Amid COVID-19 Era: Role of Technology Innovation, Transformation, and Recovery Implications for Sustainable Tourism	Li, Z., Wang, D., Abbas, J., Hassan, S., Mubeen, R.	<i>Frontiers in Psychology</i> , 12, 769175	2022	92
8	The role of human-machine interactive devices for post-COVID-19 innovative sustainable tourism in Ho Chi Minh City, Vietnam	Van, N.T.T., Vrana, V., Duy, N.T., ... Mondal, S.R., Das, S.	<i>Sustainability (Switzerland)</i> , 12(22), pp. 1–30, 9523	2020	92
9	Social innovation in smart tourism ecosystems: How technology and institutions shape sustainable value co-creation	Polese, F., Botti, A., Grimaldi, M., Monda, A., Vesci, M.	<i>Sustainability (Switzerland)</i> , 10(1), 140	2018	82
10	Open innovation and social big data for sustainability: Evidence from the tourism industry	Del Vecchio, P., Mele, G., Ndou, V., Secundo, G.	<i>Sustainability (Switzerland)</i> , 10(9), 3215	2018	78

Source: Own Elaboration

One notable publication among them is “Social capital, tourism and regional development: SPCC as a basis for innovation and sustainability,” which has garnered a total of 181 citations by the end of 2024. This paper delves into the fundamental concepts of social capital, political capital, and cultural capital, particularly within the context of regional tourism development and the frameworks of systems of innovation and sustainable development.

Additionally, the publication “Innovation Patterns in Sustainable Tourism: An Analytical Typology” serves as a crucial classification in identifying approaches to innovation and sustainable tourism. It depicts some types of innovation, including product innovations, classical process innovations, process innovations in information handling, management innovations, and institutional innovations (Hjalager, 1997). The article’s conclusion underscores that these innovations are predominantly introduced as part of defensive strategies within the tourism industry.

The research findings on publication trends in the realm of tourism innovation and sustainable development reveal several noteworthy insights regarding researchers’ interest in this area (Liu et al., 2014). Notably, there has been a significant increase in attention towards research on innovation and sustainable tourism in recent years, with projections indicating continued growth. Publications in this field are predominantly concentrated within the subjects of commerce, business, and social sciences, appearing in prestigious journals focused on sustainable development. Furthermore, some of the most highly cited works serve as valuable reference sources for future research efforts.

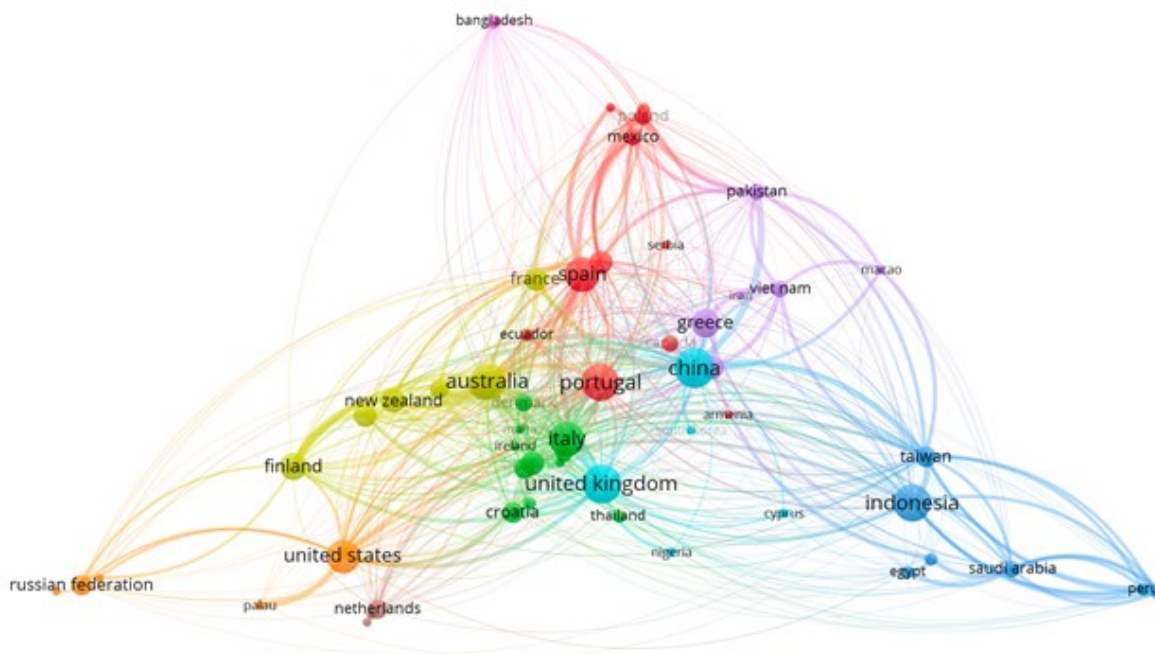
3.2 Bibliometric Analysis

3.2.1 Scholarly Collaboration

The network depicted in Figure 4 highlights the collaborative efforts among several countries in the field of tourism innovation and sustainable development. The analysis of the network reveals that certain countries serve as major hubs of collaboration, playing a central role in international research partnerships. The United Kingdom, China, Spain, Portugal, and the United States appear as dominant nodes, reflecting their extensive engagement in cross-border academic cooperation. The United Kingdom and China are particularly significant, with numerous connections to various regions, indicating their role as key contributors to global research efforts. The visualization also highlights regional clusters, where countries exhibit stronger collaboration within their geographic or cultural proximity. European nations, including Spain, Portugal, France, and Italy, form a dense network of academic partnerships, demonstrating strong regional research cooperation. Similarly, Asian countries, such as China, Indonesia, Taiwan, and Vietnam, display high levels of interconnectivity, reflecting regional research priorities and joint initiatives. The United States and Russia, while part of broader global collaborations, also maintain distinct research connections extending across multiple continents. The strength of collaboration is evident in the thickness of the connecting lines. Countries with thicker links, such as Spain and Portugal or China and Indonesia, indicate particularly strong research relationships, likely resulting from historical, linguistic, or economic ties that foster academic cooperation. This dynamic context emphasizes the global aspect of research in this field, marked by evolving models of co-authorship and extensive international collaboration.

In the near future, countries prioritizing innovation development can leverage the connections outlined above to facilitate the transfer of research findings and the application of innovative achievements in the tourism sector, ultimately advancing sustainable tourism development (Liu et al., 2014; Della Corte et al., 2019). These connections foster inter-national and inter-regional collaborations, promoting the exchange of knowledge and fostering mutual understanding among nations in this field.

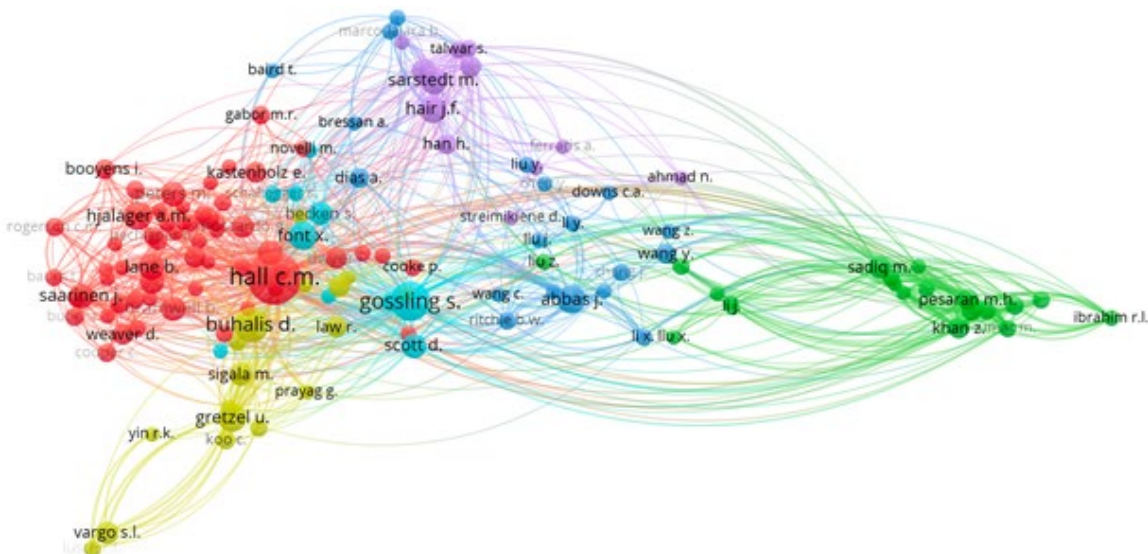
Figure 4. Country Collaboration Network



Source: Own Elaboration

The authors' collaboration network serves as a tool for understanding the connections between scientists in research and citation, enabling the assessment of authors' influence in the field of research (Della Corte et al., 2019) (Figure 5). The roster comprises numerous authors who have significantly contributed to the discourse on tourism innovation and sustainable development, with Hall and Gössling standing out as major contributors. Hall, in particular, maintains academic affiliations with various groups of authors, thus wielding influence within this research topic. Their contributions and collaborations underscore their influential roles in shaping research discourse and advancing knowledge in this topic.

Figure 5. Authors' Collaboration Network

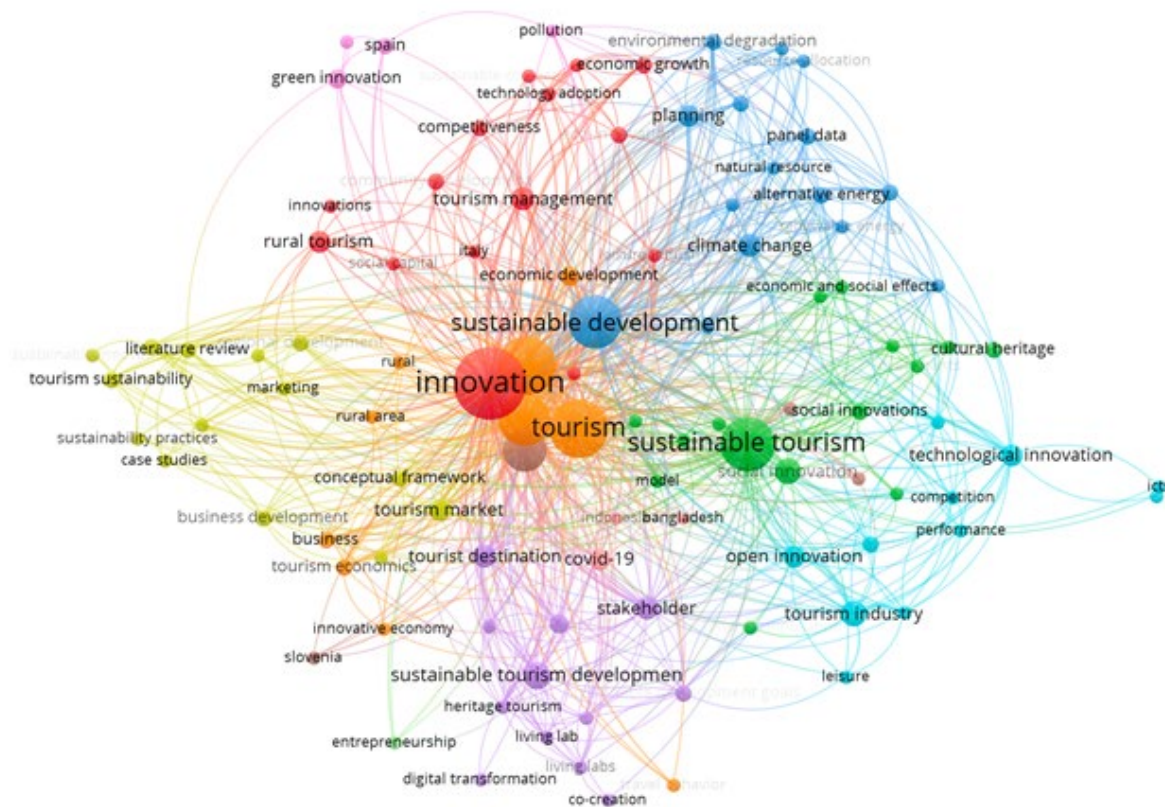


Source: Own Elaboration

3.2.2 Cluster Analysis of the Co-occurrence Keywords

Keyword co-occurrence analysis is a valuable method for revealing connections and relationships among various concepts and themes within a specific field of study (Liu et al., 2014; Della Corte et al., 2019) (Figure 6). Through this analysis, researchers can uncover hotspots and trends in research, as well as track the frequency of specific keywords over time.

Figure 6. Cluster Analysis of the Co-Occurrence Keywords



Source: Own Elaboration

The cluster analysis of co-occurring keywords reveals key research themes related to sustainable and innovation. At the center, “innovation,” “tourism,” “sustainable tourism,” and “sustainable development” emerge as dominant concepts, linking various interdisciplinary topics.

The red cluster focuses on tourism management, rural tourism, and economic development, highlighting innovation’s impact on tourism operations and local economies. The green cluster emphasizes technological and social innovation, open innovation, and competition, showcasing the role of emerging technologies in transforming the industry. The blue cluster addresses environmental sustainability, climate change, pollution, and alternative energy, reflecting efforts to mitigate tourism’s ecological impact. Meanwhile, the yellow cluster explores marketing, tourism economics, and sustainability practices, emphasizing business strategies for sustainable tourism. Lastly, the purple cluster includes heritage tourism, digital transformation, and entrepreneurship, illustrating the role of digitalization and stakeholder collaboration.

The analysis of keyword co-occurrence in research on innovation and sustainable tourism reveals several key themes. These include the links between tourism innovation and economic growth, the rise of green tourism, and the integration of innovation with environmental concerns. Additionally, scholars explore the societal impact of tourism innovation, strategies for sustainable development, collaborative experience creation, effective destination management, and the role of technology in driving innovation.

Tourism Innovation and Economic Development

Tourism innovation plays a pivotal role in fostering economic development, contributing to growth and prosperity within both local and global economies (Fayos-Solà & Cooper, 2018a). By introducing novel ideas, technologies, and practices, tourism innovation drives enhancements in service quality, visitor experiences, and destination competitiveness (Errichiello & Marasco, 2017; Cole, 2021). Innovative tourism offerings attract tourists, stimulate demand for goods and services, and generate revenue streams that fuel economic growth.

In tourism industry, innovation drives economic growth by introducing new ideas and processes (Høegh-Guldberg et al., 2022). Concepts like the circular economy, sharing economy, and experience economy are transforming the industry (Naydenov, 2018). The circular economy minimizes waste and maximizes value, while the sharing economy democratizes travel services. Meanwhile, the experience economy focuses on creating memorable and immersive experiences for travelers (Williams, 2014). These innovations not only enhance business performance but also contribute to sustainable development and community engagement, ensuring long-term success in the tourism sector.

Moreover, tourism innovation spurs entrepreneurial activities and job creation, providing employment opportunities across various sectors such as hospitality, transportation, and recreation (Hallenga-Brink & Brezet, 2005). It also stimulates investment in infrastructure development and supports the growth of small and medium-sized enterprises (SMEs), particularly in rural and remote areas (Vu Dinh et al., 2023). As destinations continue to embrace innovation, they position themselves to capitalize on emerging trends, meet evolving visitor demands, and maximize the socio-economic benefits derived from tourism activities.

Tourism Innovation and Environment

Tourism innovation and the environment are intricately linked, with innovation playing a critical role in shaping the sustainability of tourism activities and their environmental impacts (Hu et al., 2023; Peng & Zhu, 2023). This involves the advancement and adoption of eco-friendly practices and technologies, ranging from renewable energy sources to energy-efficient building designs and waste reduction programs (Hu et al., 2023). These initiatives, along with sustainable transportation solutions, aim to curtail resource consumption, minimize pollution, and overall, diminish the ecological footprint of tourism businesses and destinations (Farrukh et al., 2023).

By embracing such innovations, tourism stakeholders not only uphold environmental stewardship but also bolster their long-term viability (Hu et al., 2023). For instance, eco-friendly accommodations, coupled with renewable energy initiatives and responsible tourism practices, contribute to the preservation of natural and cultural heritage (Rosário, 2023). Moreover, innovation in tourism extends beyond infrastructure and operations to encompass the creation of sustainable tourism experiences (Ratten et al., 2019). These experiences foster environmental awareness and conservation through ecotourism initiatives, nature-based activities, and culturally immersive tours (Peng & Zhu, 2023). Emphasizing respect for natural habitats, wildlife protection, and community support, these innovative approaches ensure that tourism development aligns harmoniously with environmental preservation (Farrukh et al., 2023; Vu Dinh et al., 2023).

Tourism Innovation and Society

Tourism innovation profoundly impacts society by driving economic growth, bolstering community capacity and promoting social well-being (Krizaj & Sasidharan, 2019; Escario-Sierra et al., 2022). Through innovative practices and initiatives, the tourism industry can create positive social outcomes while addressing societal challenges and opportunities (Rosário, 2023).

One significant aspect of tourism innovation is its role in stimulating economic development and job creation. By introducing new products, services, and experiences, tourism innovation generates employment opportunities across various sectors, including hospitality, transportation, and retail (Krizaj & Sasidharan, 2019; Santos et al., 2021). This, in turn, helps to alleviate poverty, reduce inequality, and improve living standards in local communities (Vu Dinh et al., 2023). Tourism innovation significantly influ-

ences rural areas by fostering community engagement in tourism enterprises and bolstering community capacity (Widiartanto, 2019). This transformative process not only alters rural lifestyles but also heightens community consciousness regarding tourism, leading to the emergence of more advanced communities (Quaranta et al., 2016; Vu Dinh et al., 2023). Furthermore, this phenomenon holds particular significance for marginalized populations.

Tourism Innovation and Technology

Tourism innovation and technology, including digital transformation, are intertwined, revolutionizing the way travel experiences are created, marketed, and enjoyed (Eveland et al., 1990; Ratten et al., 2019; Peng & Zhu, 2023). The integration of technology into the tourism industry has led to significant advancements and opportunities for both businesses and tourists alike (Ratten et al., 2019).

One of the key ways in which technology has impacted tourism innovation is through enhancing the overall traveler experience (Ratten et al., 2019; Ilieva & Todorova, 2023). Digital platforms and mobile applications provide travelers with easy access to information, booking services, and personalized recommendations, allowing them to plan and customize their trips more efficiently (Navarrete, 2019; Giourgali, 2023). From online travel agencies and booking platforms to immersive virtual reality experiences and augmented reality tours, technology has enabled travelers to engage with destinations in new and exciting ways (Iacovino et al., 2020; Talwar et al., 2022).

Furthermore, technology has revolutionized destination marketing and promotion, enabling tourism businesses and destinations to reach wider audiences and target specific market segments effectively (Errichiello & Marasco, 2017; Streimikiene & Korneeva, 2020). Through social media, influencer marketing, and digital advertising campaigns, destinations can showcase their unique attractions and experiences to potential visitors around the world, driving tourism demand and economic growth (Casais et al., 2020).

Moreover, digital transformation has streamlined operations and enhanced efficiency within the tourism industry (Iacovino et al., 2020; Troisi et al., 2023). From automated check-in processes and self-service kiosks to data analytics and customer relationship management systems, technology enables tourism businesses to optimize their operations, improve service delivery, and gain insights into traveler preferences and behaviors (Iacovino et al., 2020; Kim et al., 2020).

Additionally, technology plays a crucial role in sustainability and environmental conservation within the tourism sector (Ratten et al., 2019). Innovations such as smart destination management systems, energy-efficient infrastructure, and real-time monitoring tools help destinations minimize their ecological footprint, mitigate environmental impacts, and promote responsible tourism practices (Polese et al., 2018; Troisi et al., 2023).

Tourism Innovation and Destination Management

Tourism innovation and destination management are closely intertwined, with innovative practices playing a crucial role in shaping the development, sustainability, and competitiveness of tourism destinations (Carson et al., 2014; Cole, 2021). Destination management encompasses a range of activities aimed at planning, developing, marketing, and managing tourism destinations to optimize their potential while minimizing negative impacts (Della Corte et al., 2021; Maziliauske, 2024).

One of the key ways in which tourism innovation impacts destination management is through the development of unique and authentic tourism experiences (Kim et al., 2020). By introducing novel attractions, activities, and services, destination managers can differentiate their destinations from competitors, attract diverse visitor segments, and enhance the overall visitor experience (Kim et al., 2020). This may involve the creation of themed attractions, cultural festivals, adventure tourism experiences, or eco-friendly initiatives that highlight the destination's natural and cultural assets (Dinica, 2013; Presenza et al., 2019).

Furthermore, tourism innovation facilitates destination branding and marketing efforts, enabling destination managers to promote their destinations effectively to target markets (Casais et al., 2020; Streimikiene & Korneeva, 2020). Through digital marketing strategies, social media campaigns, and experiential storytelling, destinations can showcase their unique selling points, engage with travelers, and create positive perceptions that drive visitation and revenue (Prats-Planagumà & Camprubí, 2009; Abbasi et al., 2024).

Additionally, technology and digital transformation play a significant role in destination management innovation (Errichiello & Marasco, 2017). Destination management organizations (DMOs) can leverage technology platforms, data analytics, and mobile applications to collect and analyze visitor data, monitor tourism trends, and enhance destination marketing and visitor services (Carson et al., 2014; Errichiello & Marasco, 2017; Cole, 2021; Della Corte et al., 2021). This enables destination managers to make data-driven decisions, tailor marketing strategies, and deliver personalized experiences that meet the needs and preferences of modern travelers.

Tourism Innovation and Experience Co-Creation

Within this cluster, there is a clear emphasis on fostering innovation within the tourism industry through collaborative approaches (co-creation, open innovation) and the adoption of novel technologies (Polese et al., 2018; Casais et al., 2020). Additionally, the cluster highlights the importance of integrating social and environmental considerations (service ecosystems, social innovations, sustainable tourism) into tourism planning and development processes (Casais et al., 2020; Streimikiene & Korneeva, 2020). Stakeholder engagement and participatory approaches are also evident, underscoring the collaborative nature of sustainable tourism initiatives (Gardiner & Scott, 2017).

Tourism innovation includes many efforts to co-create products, values and information so that stakeholders can gain added value (Voorberg et al., 2015; Buijtendijk et al., 2018). Tourists participate in co-creating products, brands and tourism experiences. Besides, online booking platforms help businesses innovate the way they approach tourists and tourists innovate the way they evaluate and share travel experiences.

Tourism innovation and experience co-creation represent two interconnected concepts that are transforming the way travelers engage with destinations and tourism services (Voorberg et al., 2015; Polese et al., 2018). Experience co-creation involves actively involving tourists in the design and delivery of their travel experiences, fostering collaboration between tourists, tourism providers, and local communities to create personalized and meaningful experiences (Kim et al., 2020).

Additionally, experience co-creation promotes destination sustainability and community engagement by empowering local communities to actively participate in tourism development and benefit from tourism-related opportunities (Widiartanto, 2019; Sharma & Bhat, 2023). By involving residents in the co-creation process and promoting authentic cultural experiences, destinations can foster a sense of ownership and pride among locals while preserving their cultural heritage and natural resources (Wang & Xiao, 2021).

3.3 Implications

3.3.1 Practical Implications

The findings of this study provide several practical implications for tourism practitioners, policymakers, and industry stakeholders. As tourism innovation and sustainable development continue to shape the industry, it is crucial to implement strategies that foster collaboration, leverage technological advancements, and promote responsible tourism practices.

First, tourism businesses and destination managers should actively engage in collaborative and co-creation strategies with tourists and local communities. Encouraging participatory experiences can enhance visitor satisfaction, strengthen local identity, and foster a sense of shared responsibility for sustainable tourism development. Implementing stakeholder engagement programs, co-designing tourism experiences, and incorporating local knowledge into tourism offerings can significantly improve both the quality and sustainability of tourism products.

Second, technology adoption should be prioritized to enhance tourist experiences and operational efficiency. The integration of artificial intelligence, virtual reality, augmented reality, and smart tourism technologies can create immersive and personalized travel experiences. Tourism businesses should explore how these technologies can enhance visitor engagement, improve accessibility, and optimize resource management, ultimately leading to more innovative and competitive tourism services.

Third, sustainability must be embedded in tourism innovation strategies. Destination managers and policymakers should align innovation efforts with environmental and social sustainability goals. This includes promoting eco-friendly tourism practices, minimizing carbon footprints, supporting community-based tourism initiatives, and preserving cultural heritage. Businesses should integrate sustainable tourism certifications, adopt circular economy principles, and encourage tourists to engage in responsible travel behaviors.

Finally, the interdisciplinary nature of tourism innovation calls for stronger collaboration between industry stakeholders, government agencies, and academic institutions. Policymakers should create incentives for cross-sector partnerships, encourage knowledge transfer between academia and industry, and support research-driven tourism policies. Providing funding for sustainable innovation projects and facilitating training programs for tourism professionals will ensure that innovation efforts contribute to long-term industry growth.

3.3.2 Theoretical Implications and Future Research Agenda

Results indicate that tourism innovation and sustainable development are focal points for enhancing tourism activities. Scholars consistently publish on this subject, enriching our understanding of innovation. Common themes suggest that tourism innovation is pervasive across various activities, aiming to achieve sustainable development while enhancing the travel experience. Even studies not explicitly focused on innovation demonstrate advancements in concepts, procedures, and efficiency. Future research on tourism innovation should prioritize the examination of innovation and its efficacy. This study proposes potential areas of interest for scholars investigating tourism innovation and sustainable development.

First, future research should focus on the dynamics of collaboration and co-creation between tourists, tourism providers, and local communities. Understanding the factors that enable or hinder effective collaboration is essential for developing strategies that foster a culture of co-creation within the tourism sector. Investigating best practices for engaging stakeholders in co-creation processes could provide valuable insights for policymakers and industry leaders.

Second, the role of emerging technologies in facilitating experience co-creation requires further investigation. Future studies could examine how artificial intelligence, virtual reality, and augmented reality influence co-creation dynamics, as well as the opportunities and challenges associated with integrating these technologies into tourism experiences. Understanding the impact of digital transformation on tourist behavior and service innovation is crucial for designing immersive and personalized travel experiences.

Third, research should explore how experience co-creation contributes to sustainable and responsible tourism practices. This includes identifying ways to align co-creation initiatives with sustainability goals, such as promoting community empowerment, cultural preservation, and environmental conservation. Investigating the balance between innovation and sustainability will help mitigate the potential negative social and ecological impacts of tourism development.

Finally, given the interdisciplinary nature of tourism innovation, future research should adopt cross-disciplinary perspectives and methodologies. Collaboration between scholars in tourism studies, marketing, psychology, sociology, and technology can provide a more comprehensive understanding of co-creation processes. By integrating diverse theoretical and methodological approaches, future studies can develop holistic frameworks for analyzing and advancing tourism innovation in a rapidly evolving global landscape.

4. Conclusion

This study aimed to explore the intersection of tourism innovation and sustainable development, addressing a gap in the literature by analyzing how innovation contributes to enhancing both the efficiency and sustainability of the tourism sector. Recognizing the increasing significance of innovation in driving competitiveness, cost reduction, and strategic growth in tourism, this research sought to provide a comprehensive understanding of the key themes and trends within this domain. To achieve this objective, a semi-systematic literature review was conducted, utilizing bibliometric analysis of 181 publications from the Scopus database. This methodological approach enabled the identification of major research directions and thematic clusters related to tourism innovation and sustainability. The findings reveal a growing

academic interest in innovation within tourism literature, emphasizing key themes such as technology adoption, digital transformation, strategic planning, corporate governance, destination management, and co-creation. These themes highlight a broader shift in the tourism sector towards innovation-driven sustainability, where advancements in science, technology, and management practices contribute to responsible and resilient tourism development.

The study presents several theoretical and practical implications. Theoretically, it contributes to the existing body of knowledge by mapping key research trends and offering a framework for understanding the role of innovation in sustainable tourism. It underscores the interdisciplinary nature of tourism innovation and the need for future studies to explore co-creation dynamics, the impact of emerging technologies, and the alignment of innovation with sustainability goals. From a practical perspective, the findings emphasize the need for tourism businesses, policymakers, and industry stakeholders to embrace innovation as a tool for sustainability and competitiveness. Key recommendations include integrating digital technologies to enhance efficiency, fostering stakeholder collaboration to ensure inclusive and responsible tourism development, embedding sustainability in innovation strategies, and strengthening cross-sector partnerships to drive research-driven policies and workforce capacity building.

The study's limitations include its reliance on a semi-systematic review and bibliometric analysis, which may not capture all relevant literature due to database constraints. Additionally, focusing solely on the Scopus database may overlook insights from other sources, including non-English language publications. Furthermore, the analysis primarily reflects general trends in tourism innovation, lacking depth in exploring specific contexts or nuances of individual destinations or sectors.

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ORCID

Tran Tuyen  <https://orcid.org/0000-0002-7960-5234>

Notes on contributors

Tran Tuyen serves as a senior researcher at the University of Social Sciences and Humanities, Vietnam National University, Ho Chi Minh City. He possesses a master's degree in public policy from the Fulbright School of Public Policy and Management and is presently pursuing a Ph.D. in tourism at Vietnam National University, Hanoi. His research encompasses a broad range of tourism studies, specifically emphasizing tourist behavior, psychological experiences, happiness in tourism, and the transformative nature of tourism. His extensive portfolio of over 40 publications in esteemed national and international journals enhances the theoretical and empirical understanding of tourism as a catalyst for personal and societal transformation.