International Journal of Innovative Research and Scientific Studies, 8(3) 2025, pages: 5132-5143

IJIRSS
International Journal of Innovative Research & Scientific Studies

ISSN: 2617-6548

URL: www.ijirss.com

Sustainable competitiveness in tourism: Strategies and successful practices based on a bibliometric analysis and systematic review

Liliana Elizabeth Soriano Torres[1*], Karem Bacuy Ortiz[2], María José Ortiz Zurita[3], Gabriela Natalia Torres Jara[4], María de Lourdes Larrea Paredes[5]

[12,3,4]*University: Universidad Estatal de Milagro, Milagro, Provincia del Guayas, Ecuador, 091050.*
[5]*Universidad UTE, Ecuador.*

Corresponding author: Liliana Elizabeth Soriano Torres (*Email: lsorianot@unemi.edu.ec*)

Abstract

The impact of sustainable competitiveness on local economies, ecosystems, and cultural resources has made it a vital topic in tourism studies. Sustainable ways to boost the competitiveness of tourist sites have been developed as a result of globalization and the increased need for ethical behavior. The aforementioned tactics underscore the significance of equitable resource management, encompassing economic, environmental, and societal aspects, in order to attract tourists while conserving indigenous resources. Using information from Web of Science and Scopus, this study conducted a comprehensive bibliometric review to identify prominent authors, institutions, and research trends. Database selection, search equation construction, inclusion and exclusion criteria establishment, bibliometric analysis, and software selection were the five steps of the process. Productivity on sustainable competitiveness subjects has increased since 2019, according to the bibliometric analysis, indicating a growing interest in this field. The most influential publications were those published in the Journal of Sustainable Tourism and Sustainability. In order to highlight the importance of interdisciplinary cooperation in tackling sustainability issues in the tourism industry, the study also examined networks of collaboration between institutions, with organizations such as the University of the Philippines emerging as significant participants. Important keywords were "competitiveness," "sustainable tourism," and "sustainable development," suggesting a focus on teamwork to improve sustainability and competitiveness in the industry. The report emphasizes the need for a balance between environmental preservation and economic growth in order to maintain tourism's competitiveness. In destination management, there is a discernible shift toward collaborative approaches that involve local enterprises, communities, and governments in the adoption of successful sustainable practices. The adoption of sustainability and competitiveness strategies may be impacted by obstacles such as the requirement for sophisticated technology infrastructure and unambiguous data privacy regulations in less developed locations. In order to maximize long-term sustainability, future research should concentrate on integrating cutting-edge technologies and tailoring these tactics to particular geographical circumstances.

Keywords: Destination management, Ecotourism, Sustainable competitiveness, Sustainable strategies, Tourism.

DOI: 10.53894/ijirss.v8i3.7730
Funding: This study received no specific financial support.
History: Received: 25 April 2025 / **Revised:** 28 May 2025 / **Accepted:** 4 June 2025 / **Published:** 10 June 2025

Competing Interests: The authors declare that they have no competing interests.

Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Publisher: Innovative Research Publishing

1. Introduction

Due to its substantial effects on local economies, ecosystems, and people, sustainable competitiveness has become a crucial topic in tourism research and destination management [1]. It is difficult to ensure that tourism development is competitive, profitable, and sustainable over the long run, given the sector's rapid growth, which makes it one of the major sources of income for many nations [2]. Sustainability is now crucial to preserving destinations' competitiveness due to globalization, shifting consumer tastes, and increased awareness of the negative social and environmental effects of tourism [3, 4].

Providing high-quality experiences that are considerate of the environment, regional cultures, and local populations is just as important to tourism competitiveness in this context as attracting tourists. This calls for an all-encompassing strategy that incorporates social, environmental, and economic factors. By doing this, tourist locations may preserve their natural and heritage treasures for future generations while strengthening their position in a market that is becoming increasingly demanding. This viewpoint is consistent with the idea of "sustainable tourism," which is defined by the World Tourism Organization (UNWTO) as travel that protects and enhances prospects for the future while meeting the needs of current visitors and host communities.

In order to find and evaluate tactics that might reconcile these needs, research on sustainable competitiveness in the tourism industry has developed [5, 6]. Strategic planning, natural resource management, ecotourism, hotel and service certification, and the development of cooperative models amongst important stakeholders to manage natural resources sustainably are some of the most pertinent topics [7, 8].

Scholars and industry professionals are now concentrating on sustainable tourism destination development in an effort to comprehend how these strategies might boost competitiveness and draw in higher caliber, value-added travel [5, 9]. According to studies, in order to successfully execute these strategies and guarantee that the requirements and expectations of all stakeholders are taken into account, the participation of local communities, governments, and international organizations is crucial [8].

According to Diéguez-Castrillón et al. [6], an examination of the body of research on sustainable competitiveness in the tourist industry emphasizes the significance of sustainability, competitiveness, and sustainable development as key research pillars. These ideas are fundamentally related since tourism needs to be socially and environmentally responsible in addition to being profitable. Assessing and tracking a destination's carrying capacity the maximum number of visitors it can accommodate without sacrificing the standard of the travel experience or the integrity of its natural resources is another aspect of the sustainability focus [10, 11]. In order to accomplish integrated management of tourist sites, this holistic and multidisciplinary approach emphasizes the necessity of integrating several fields of knowledge, including resource management, urban planning, environmental conservation, and social sciences.

Accordingly, bibliometric tools like VOSviewer have become essential for mapping the existing research environment and comprehending the relationships between different fields of study that comprise the topic of sustainable competitiveness in tourism [12]. These tools are used in this study to find key approaches and trends in the literature, as well as networks of cooperation between authors, organizations, and nations. An in-depth comprehension of priority areas and knowledge gaps that still require attention is made possible by the depiction of important terms and emerging themes. For instance, it is possible to identify issues like stakeholder involvement in tourist management, climate change adaptation, and methods for incorporating sustainable practices into the tourism supply. These areas are crucial for creating laws and procedures that enable travel destinations to compete in the global market in an ethical and responsible way.

The dynamics of cooperation among the various institutions spearheading research on sustainable competitiveness in tourism are also outlined by this bibliometric analysis.

In order to guarantee that tourist destinations may expand sustainably, this research on sustainable competitiveness in tourism is founded on an integrated approach that blends economic, social, and environmental strategies. A thorough approach that not only offers a clear summary of recent research but also directs future studies and collaborations required to address global challenges in tourism destination management is necessary for the identification and analysis of key terms and emerging trends using bibliometric tools.

2. Methodology

To maintain openness, reproducibility, and rigor throughout the process, this study used a methodical methodology based on bibliometric analysis, guided by the PRISMA standards (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). There were five primary stages to the methodology: 1. Database selection; 2. Search equation definition; 3. Inclusion and exclusion criteria establishment; 4. Bibliometric analysis; 5. Software selection.

2.1. Database Selection

Because of their extensive coverage of bibliometric analyses, Scopus and Web of Science (WoS) were used for this investigation. Numerous peer-reviewed publications in these databases guarantee the caliber and applicability of the scholarly content that is provided [13]. For instance, Scopus is praised for its capacity to link data and academic literature in a variety of fields, such as business management and the social sciences [14] which are essential for research on tourism and technological innovation. Scopus indexes over 25,000 active titles. On the other hand, Web of Science offers access to high-impact research in interdisciplinary domains, demonstrating its value for study examining the relationship between tourism services and technology [15]. The Social Sciences Citation Index (SSCI) and Science Citation Index Expanded (SCI-EXPANDED) collections, which cover publications since 1956 and 1900, respectively, have also been employed in WoS to guarantee the inclusion of high-impact studies [16].

The Social Sciences Citation Index (SSCI) and Science Citation Index Expanded (SCI-EXPANDED) collections, which encompass publications since 1956 and 1900, respectively, were also employed in WoS to guarantee the inclusion of high-impact papers [17, 18].

2.2. Definition of Search Equation

Each database had its own set of search equations. The following formula was used to conduct the search in Scopus: TITLE-ABS-KEY("sustainable tourism" AND "competitiveness" AND "strategies"), while in WoS the equation: TS=("sustainable tourism" AND "competitiveness" AND "strategies") was used. These searches were conducted on October 10, 2024.

2.3. Establishment of Inclusion and Exclusion Criteria

In conducting a thorough bibliometric study, the scientific databases Scopus and WoS are frequently used [19]. Both the Scopus database and Web of Science (WoS) have precise inclusion and exclusion criteria. An accurate assessment of the present status of research on artificial intelligence in tourism destination management is made possible by these criteria, which were established to guarantee the quality and relevance of the chosen publications [20].

All of the database's thematic areas were included in Scopus and WoS to guarantee comprehensive coverage and prevent bias in the literature selection process. Only articles from scientific journals were considered, as they undergo rigorous peer review, and a language filter was applied, limiting the selection to documents in English and Spanish.

2.4. Bibliometric Analysis

Four crucial elements were included in the bibliometric study to comprehend the dynamics of the topic's research: 1. Analysis of Productivity and Citations; 2. Analysis of Sources; 3. Analysis of Institutional Contributions; 4. Intellectual Structure Analysis.

2.5. Selection of the Software Used

The R language (version 4.4.1) and RStudio were used for data analysis. Data on authors, journals, and nations were processed and analyzed using the tidyverse library. Additionally, network analysis was conducted using VOSviewer software (version 1.6.20), which enabled the discovery of thematic trends through keyword analysis and the structure of author collaboration and co-citation.

A PRISMA diagram is included, detailing the literature selection process from identification to the final inclusion of documents. This diagram can be found in Figure 1.

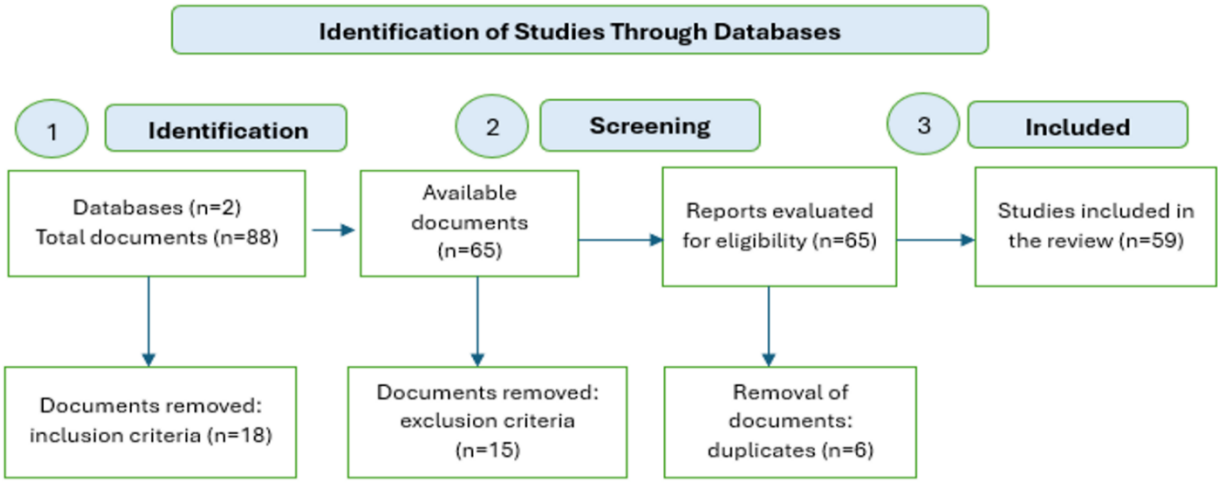

Figure 1.
PRISMA Flow Diagram for Literature Selection Process.

3. Results

The initial search yielded 60 documents in Scopus and 28 in WoS. After applying the inclusion and exclusion criteria, 65 documents were selected: 38 in Scopus and 27 in WoS. Subsequently, the "left_join" function of the "dplyr" package was used to identify duplicate documents in both scientific databases. Six duplicate documents were found, leaving a total of 59 documents to be analyzed: 32 in Scopus, 21 in WoS, and 6 in both databases.

3.1. Bibliometric Analysis

The bibliometric analysis was structured into several key dimensions. First, an analysis of productivity and citations was carried out to visualize the evolution of the number of publications and citations achieved per year. Second, the main sources were analyzed. Likewise, the institutions and countries most active in this area of research were evaluated, identifying the main contributions at the international level. Finally, an analysis of the intellectual structure was conducted using keyword co-occurrence networks.

3.2. Productivity and Appointment Analysis

An analysis of productivity and citations is shown in Figure 2. In terms of productivity, steady growth in the number of published papers is observed over time. From 2003 to 2018, productivity was low, with an average of 1–4 documents per year. However, starting in 2019, a significant increase in the number of published papers was observed, reaching its highest point in 2024, with a total of 14 papers. This increase may be related to a growing interest in the research topic or greater investment in the development of studies in this specific area.

There were several notable peaks in the number of citations per year. The year 2012 stood out, with 278 citations, suggesting that a paper published on that date had a major impact on the academic community. A second significant peak was observed in 2015, with 240 citations, followed by another in 2020, with 130 citations. However, from 2017 onwards, there was a general downward trend in citations, although in 2019, there was a moderate increase with 74 citations. In 2024, despite reporting a high number of papers, the number of citations was low (n=9), which may indicate that these papers are recent and have not yet had enough time to be widely cited.

The increase in the number of papers published in recent years has led to an increase in research productivity in this field. However, citations do not show the same trend, probably because of the temporality of recent publications, which have not yet received enough attention or time to be cited more frequently.

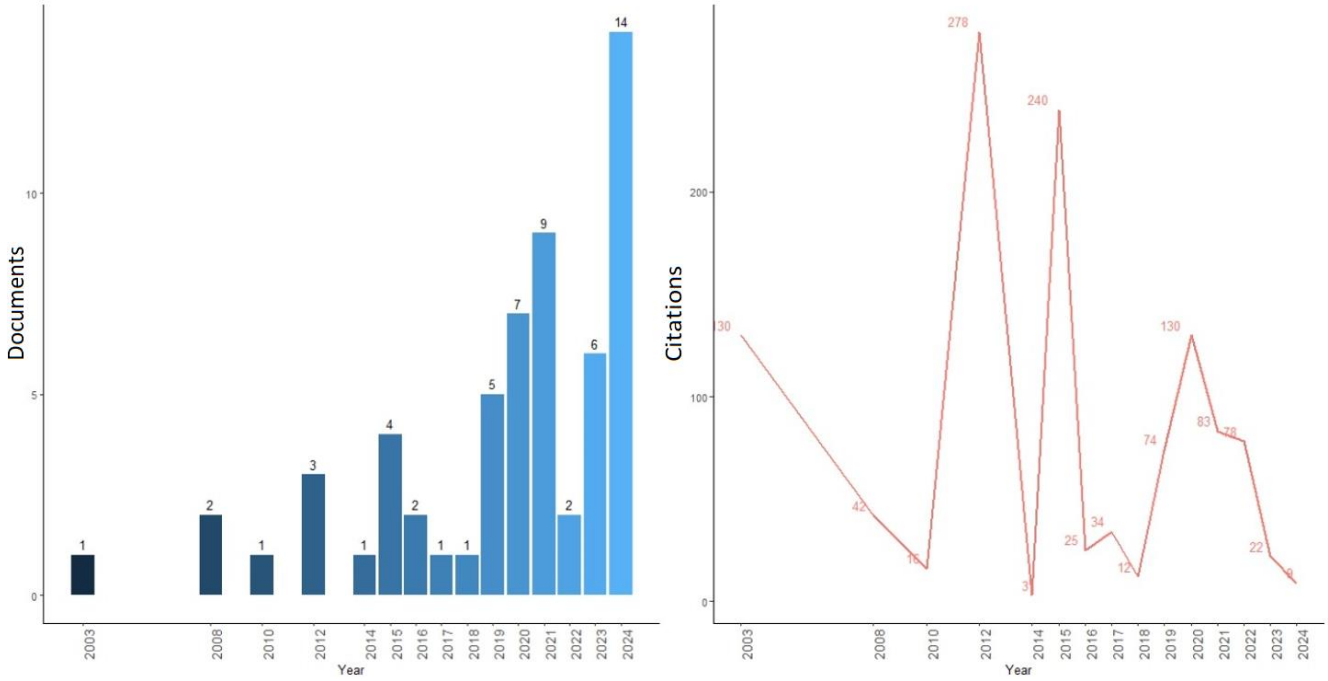

Figure 2.
Annual Evolution of Productivity and Citations.

3.3. Source Analysis

Table 1 shows the most relevant journals in the publication of articles related to the subject matter, highlighting the journals that have published more than one paper and the number of citations the journal has achieved due to these publications. Table 2 shows the sources that have had the greatest impact on the scientific community, measured by the number of citations received as well as the number of papers they have published in total. The table shows that SUSTAINABILITY leads in terms of the number of papers, with a total of five, accumulating 158 citations. This suggests

that although this journal is prolific in publishing studies on sustainability and tourism, its impact in terms of citations is moderate compared to others.

Despite having just three articles, the Journal of Sustainable Tourism is notable for having 199 citations, making it one of the most prominent journals in the area and demonstrating the caliber and applicability of its publications.

Other publications, including Worldwide Hospitality and Tourism Themes and INTERNATIONAL JOURNAL OF TOURISM RESEARCH, both publish two papers, but their citation counts vary greatly. The former has the most citations (38), which suggests a high degree of impact.

A different method is offered in Table 2, which lists journals based on the total number of citations received, independent of the quantity of papers. With three papers and 199 citations, the Journal of Sustainable Tourism comes in first place, demonstrating its significance and impact in the field of sustainable tourism. This shows that in addition to being widely cited, the research published in this journal is also extremely relevant.

Despite having only one article in the field, the journal ECOLOGICAL INDICATORS has 181 citations, demonstrating the study's exceptional significance. This fact implies that even though there aren't many publications in the field, some articles can make a significant difference if they address important or unique topics.

Sustainability (Switzerland), with 158 citations, confirms its central role in the literature. Other journals such as TOURISM MANAGEMENT (96 citations) and ANNALS OF OPERATIONS RESEARCH (44 citations), although with fewer papers on the subject, also show citation levels that reflect the relevance and interest in the topics they address.

A comparison of the two tables suggests that, although some journals, such as SUSTAINABILITY, are prolific in terms of the number of publications, the impact measured in terms of citations may be greater in more specialized journals or those that publish highly relevant studies, as is the case with ECOLOGICAL INDICATORS. This analysis highlights the importance of considering both the quantity of publications and their quality and relevance in terms of citations to evaluate the influence of journals on the scientific literature regarding sustainable competitiveness in tourism.

Journals specialized in sustainability, such as the Journal of Sustainable Tourism, emerge as key sources for high-impact research, while others, such as ECOLOGICAL INDICATORS or TOURISM MANAGEMENT, although with fewer papers, have a considerable impact that should not be underestimated.

Table 1.
Top Journals with more than one publication and their citations.

Journal	Documents	Citations
Sustainability	9	158
Journal of Sustainable Tourism	3	199
International journal of tourism research	2	38
Worldwide Hospitality and Tourism Themes	2	16

Table 2.
Top Journals and with the highest number of citations.

Journal	Citations	Documents
Journal of Sustainable Tourism	199	3
Ecological indicators	181	1
Sustainability (Switzerland)	158	9
Tourism management	96	1
Annals of operations research	44	1
Journal of sustainable tourism	40	1
International journal of tourism research	38	2
Asia Pacific Journal of Tourism Research	35	1

3.4. Institutional Contribution Analysis

The analysis of the academic collaboration network illustrated in Figure 2 illustrates the connections between various universities and institutions in the field of scientific research on Sustainable Competitiveness in Tourism.

Figure 2 shows the key players and academic collaboration networks in this field of study. First, the main institutions stand out, such as the University of the Philippines, which appears as a central node on the map, indicating that it is one of the institutions with the highest levels of collaboration in this field. Its connection with other entities suggests that it plays an active role in research projects related to the sustainability and competitiveness of tourism. The Institute of Marine Fisheries is also present, connecting with other institutions, suggesting its involvement in interdisciplinary research, probably focusing on the impact of sustainability on marine and fishery activities within tourism.

The Department of Accounting and the Department of Management were identified in terms of departments and academic units, both of which were connected in the network. In light of the integration of economic and management perspectives in the analysis of sustainability, this suggests that administrative and management techniques are essential to research on sustainable competitiveness. Furthermore, the Division of Social Sciences is present, suggesting that humanistic and social factors are taken into account in tourist sustainability studies.

This shows an interest in the ways that human interactions and social dynamics affect the tourism industry's ability to

compete. Lastly, a noteworthy effort to combine several disciplines in research on sustainability and competitiveness in tourism is indicated by the Emerging Interdisciplinary Research node. Connections with other institutions and departments reinforce the idea that interdisciplinary collaboration is essential to comprehensively address the challenges and opportunities in this field.

Figure 3 illustrates a broad and diverse collaborative network, with a focus on the integration of different disciplines and stakeholders. The University of the Philippines and the Institute of Marine Fisheries have emerged as key players, indicating their leadership in research related to tourism sustainability. In addition, the involvement of the management, accounting, and social science departments suggests a holistic approach that considers economic, managerial, and social factors to better understand sustainable competitiveness in the tourism sector. This type of visual analysis allows the identification of the most influential connections and institutions, guiding future collaborations and research approaches in this field.

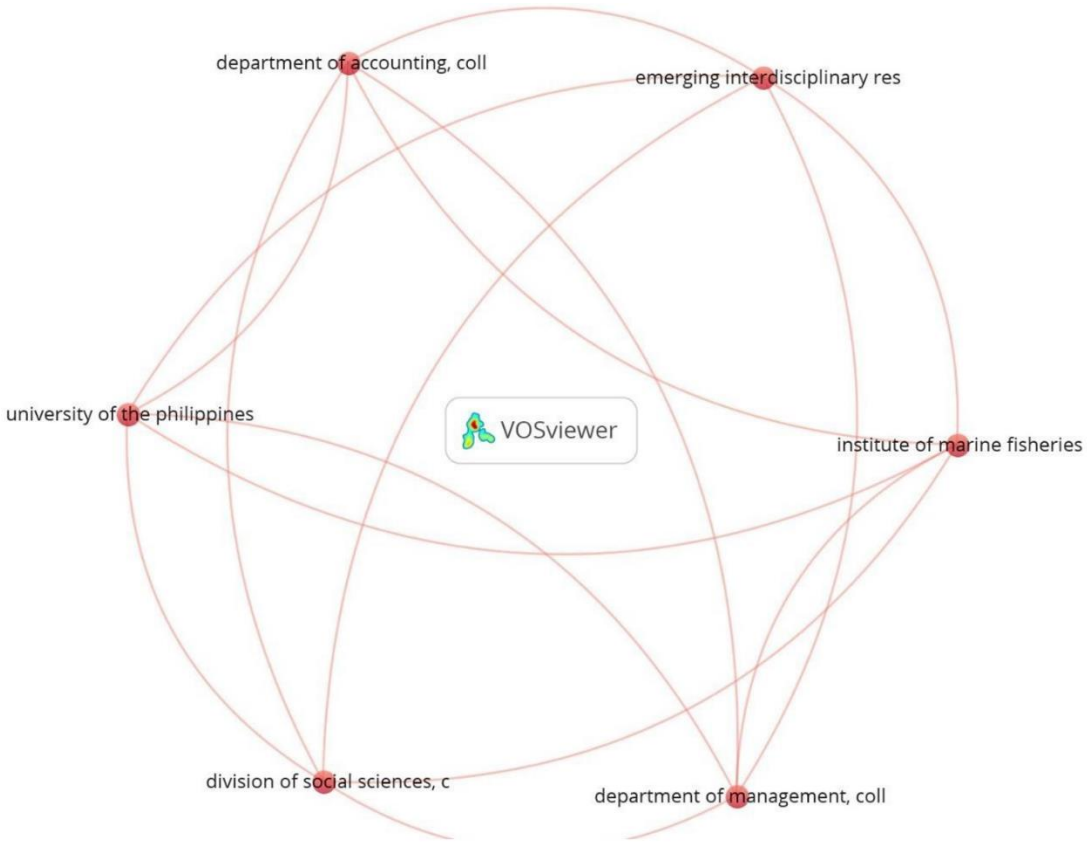

Figure 3.
Academic Collaboration Network.

3.5. Intellectual Structure Analysis

Figure 4 shows a map of related terms and topics, in which the most relevant keywords and concepts in the field of Sustainable Competitiveness in Tourism are visualized. Through this type of visualization, it is possible to identify the main areas of research, as well as the connections and relationships between different topics that are key to understanding the current landscape of this field of study. A detailed analysis of the figure is presented below:

3.6. Central Nodes and Main Thematic Areas

- Sustainable tourism is the most prominent node on the map, indicating that it is a central concept in the analysis of sustainable tourism competitiveness. This node connects to multiple themes, suggesting that it is a term that is widely addressed and serves as an integrating axis in this study.
- Other important nodes include Sustainability, Competitiveness, and Sustainable Development, reflecting the interrelationship between these concepts in the study of strategies to make tourism competitive and sustainable. The closeness and connections between these nodes indicate that they are highly interconnected fundamental themes in the field.

3.7. Relevant Subtopics and Connections

- Themes such as destination competitiveness, tourism strategies, and certified hotels are associated with the competitiveness node, suggesting that competitiveness in tourism is not only focused on destination development strategies but also on the certification and quality of the services offered.

- In relation to Sustainable Development, topics such as strategic planning, stakeholder engagement, and tourism growth were observed, indicating that sustainable development in tourism involves strategic planning and the participation of key stakeholders to ensure the adequate and balanced growth of tourism activities.

3.8. Interdisciplinary Relations

- Terms such as climate change, carrying capacity, and goal programming connect with the Sustainable Tourism node. This is evidence that the study of sustainable competitiveness in tourism extends to environmental and resource management considerations, showing a comprehensive and interdisciplinary approach.
- The issue of tourism competitiveness appears to be an important subnode linked to both sustainability and strategic planning, suggesting that competitiveness in tourism is profoundly influenced by the ability to incorporate sustainable practices.

3.9. Emerging Trends

The figure also reveals specific and emerging areas of interest, such as cooperation and collaborative models, which suggest a trend towards collaborative models for the management of sustainability and competitiveness in tourism. Collaboration between different stakeholders (such as governments, local communities, and businesses) appears to be key to developing effective sustainable strategies.

Figure 4 provides a comprehensive view of the main research areas and the relationships between the key concepts in the study of Sustainable Tourism Competitiveness. The central node of Sustainable Tourism and its multiple connections underscores the importance of a holistic approach that integrates sustainability, strategic development, and collaboration to improve competitiveness in the tourism sector. The notion that sustainability is an essential element of attaining competitive and prosperous tourism is further supported by terms associated with climate change and resource management, which imply the necessity of planning intended to mitigate environmental impacts.

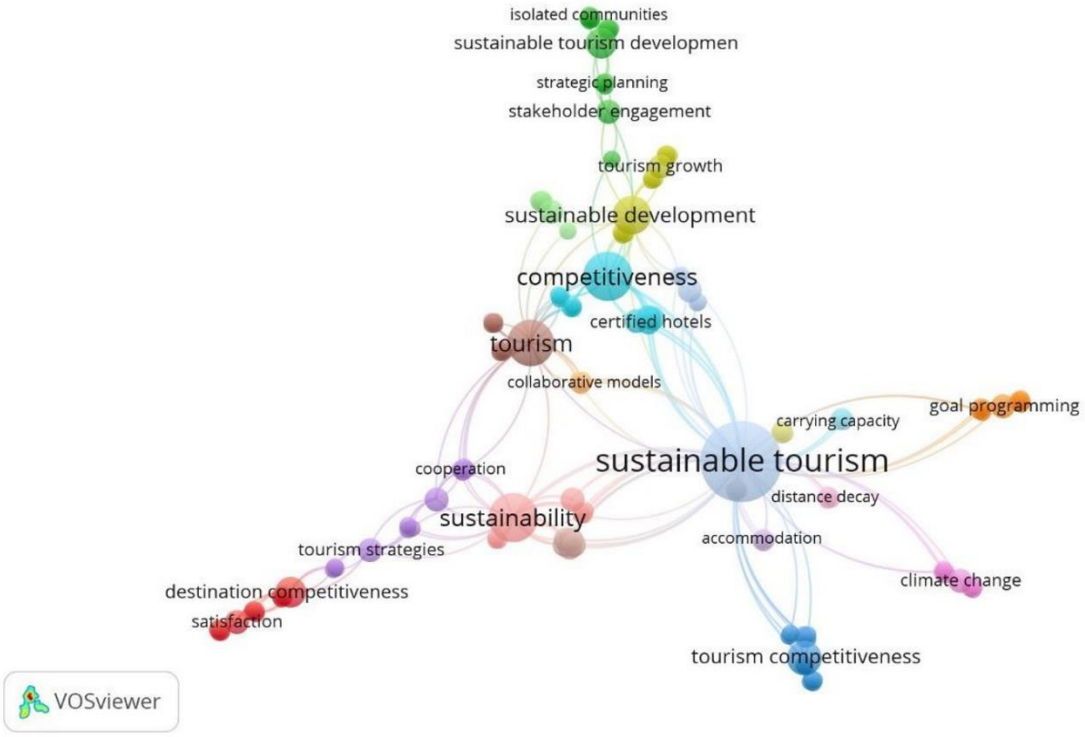

Figure 4.
Keyword Co-occurrence Map.

4. Literature Review

The necessity to strike a balance between economic expansion and the preservation of natural and cultural resources in tourist destinations has led to an increase in scholarly and professional interest in the idea of sustainable competitiveness in the tourism industry [1]. The research under consideration offers a strong foundation for comprehending tactics and methods that have worked well in a range of settings, from popular tourist sites to more niche techniques like community-based tourism and green tourism.

Rebollo and Baidal [21], the most prominent study in this topic with 130 citations, examined how sustainability indicators were used in Torrevieja, a popular tourist destination in Spain. The authors created a set of metrics to evaluate policy responses, resident and visitor views, and environmental strain. This study highlights the inconsistencies between the need to protect natural resources and the economic growth fueled by mass tourism, underscoring the need of

management techniques and public policies that support the establishment of a balanced and sustainable tourism industry.

With 90 citations, Buffa [22] research was the second most influential study. This study looks at how young travelers feel about sustainability and finds two different types: soft-path young travelers (SPYT), who place a higher priority on comfort and structured travel, and hard-path young travelers (HPYT), who are more dedicated to sustainable practices. This study is crucial for comprehending how the travel preferences of young people impact the creation of sustainable tourism goods, which boost locations' competitiveness by meeting the demands of these new customers.

One important tactic for sustainable development is community-based tourism, or CBT. With 46 citations, Mtapuri et al. [23] emphasize that CBT improves connections with local economies, decreases economic leakage, and creates social and commercial value for destinations. In order to increase the environmental and economic sustainability of destinations, this study suggests a theoretical model that emphasizes the significance of corporate social responsibility (CSR) and the active involvement of local communities in tourist management.

With 35 citations each, studies by Chen et al. [24] and Esparon et al. [25] shed light on the connection between natural resources and the competitiveness of the tourism industry. Despite having an abundance of natural resources, Chens et al. [24] point out that Cambodia lacks the supplementary resources required to maintain its long-term competitiveness. However, considering that tourists are more concerned about environmental degradation than price increases, Esparon et al. [25] emphasize the significance of preserving the Great Barrier Reef's (GBRWHA) natural values to preserve the destination's survival.

In 2024, it was noted that the number of studies on sustainability and tourist competitiveness had significantly increased. One of the key studies was by Barcellos-Paula et al. [26], who explored how pro-environmental practices and urban sustainability affect tourist perceptions in Ljubljana, Slovenia. The authors analyzed the responses of 372 international tourists using Affinity Theory and a fuzzy logic algorithm. The study concludes that initiatives such as recycling, green public transport, and plastic reduction policies positively influence the perception of a destination as sustainable, strengthening its global competitiveness.

Along the same lines, Saragih et al. [27] focused on Onematangsiantar, Indonesia, where they evaluated 10 key tourism objects through a SWOT analysis (strengths, weaknesses, opportunities, and threats). This study highlighted that, although there are significant strengths and opportunities, weaknesses in infrastructure and promotion need to be addressed to improve sustainability and competitiveness. The research proposed strategies that combine infrastructure improvements, strengthen public–private partnerships, and empower local communities.

Knowles et al. [28] provide an analysis of the impact of climate change on Rocky Mountain ski resorts using the SkiSim 2.0 model. The results predict a 14-18% decrease in the length of ski seasons by mid-century, with a significant increase in the demand for artificial snow. Higher-altitude resorts, such as those in Alberta, are more resilient, suggesting the need for adaptive strategies to maintain competitiveness.

Zhao et al. [29] proposed a comprehensive model for urban tourism competitiveness in China by combining Porter's Diamond Model with the IMD framework. This study highlights the importance of integrating local communities and improving tourism services through urban tourism branding and regional cooperation.

Another study is that of Purwono et al. [30] who analyze the relationship between the competitiveness of destinations and their economic performance in several Asian countries. Through structural equation modeling (SEM), key factors such as connectivity, infrastructure, and sustainability are identified as pillars that positively impact job creation and tourist arrivals.

Additional, Huang [31] focuses on tea tourism in F province, analyzing how resources, markets, and products can strengthen the competitiveness of a destination. Despite its success, with an annual growth rate of 12.28%, this study identifies the need to improve service quality and infrastructure to ensure sustainable tourism development.

Another notable year is 2021, and several important studies have contributed significantly to research on sustainable competitiveness in tourism. One of the most relevant studies was by Satria and Wibowo [32] who analyzed sustainable tourism competitiveness in three key destinations in East Java: The Bromo Tengger Semeru National Park (BTSNP), Ijen Crater, and Jatim Park 2. Using 2019 TripAdvisor review data and text mining techniques, this study assessed the strengths and weaknesses of each destination. The authors stressed the importance of using big data, such as social media reviews to improve tourism competitiveness through strategies that include local business development and the creation of a common tourism brand.

Another study was by Agudo et al. [33] who investigated the impact of quality certifications on customer intentions in certified hotels. Using structural equation modeling (SEM), the study concluded that hotels certified by trusted agencies are perceived as having higher quality, which reinforces both competitiveness and long-term sustainability.

In Baja California, Escoto et al. [34] examined the impact of the pandemic on tourism and proposed sustainable strategies to improve competitiveness. The results showed that the gastrotourism cluster in the region has a competitive advantage; however, companies must adapt through strategies such as digital marketing and collaboration between tourism stakeholders.

The journal with the most published papers turned out to be the journal Sustainability with 9 papers and an average of 17.55 citations per paper. In this journal was published the study of Zhu et al. [35] which investigates the relationship between environmental competitiveness and tourism growth. Using data from 130 destinations between 2009 and 2017, the authors applied fixed-effects and threshold models to analyze how environmental competitiveness factors affect tourism demand. The results show that environmental competitiveness has a significant impact on developed destinations, where tourism growth is observed; however, in less developed destinations, this relationship is weak. This study highlights that

in destinations with higher GDP per capita, factors such as strict environmental regulations and participation in international conservation treaties have a positive influence on tourist arrivals. However, because of a lack of infrastructure investment, the influence of environmental competitiveness on tourism growth is limited in less developed locations. This suggests that specific actions are needed to boost sustainability and competitiveness in different destination categories.

A thorough planning framework for the development of sustainable tourism on Greece's Chios Island was put up by Lopes et al. in 2020. In order to identify the strengths and limitations of the island's tourism industry, this study used an action research methodology involving important local stakeholders, in accordance with the Sustainable Development Goals (SDGs) of the UN 2030 Agenda. Lopes et al. [36] emphasized the unique difficulties Chios faces, such as the absence of clear tourist policies and territorial planning, as well as the effects of the financial crisis and the refugee crisis. Notwithstanding these challenges, the writers emphasize how the island might draw tourists by protecting its natural resources, such as making mastic, and creating genuine experiences for tourists.

Sustainable tourism was the most crucial term, as was to be expected given the intellectual framework. The sustainability of tourism in Colombian communities falling into the fourth, fifth, and sixth categories is the subject of Vásquez and Víllegas [37]. Five pillars form the basis of this analysis: employment, social inclusion, economic performance, tourism policy, and heritage sustainability. These communities need a lot of help to develop in areas including competitiveness, governance, and environmental sustainability, as evidenced by the results' low overall ranking (2.36/5). To attain a more sustainable tourism development, measures including bolstering social inclusion policies and conserving cultural and natural assets are emphasized.

Competitiveness was another key node. Using certain measures, Johnsen et al. [38] examine how Swiss Alps tourism regions might include sustainable development into their tourism management. The study suggests a set of metrics that assess the economic success of travel destinations as well as their effects on the environment, society, and culture. In order to guarantee that the indicators accurately represent the distinct requirements and features of every location, a participatory approach was used to develop them, involving local stakeholders. By using benchmarking indicators, tracking sustainability progress, and modifying management policies in response to trends, the initiative aims to develop a plan that will allow tourism regions to manage their resources sustainably. The study suggests that sustainability should be an integral part of strategic planning to improve the long-term competitiveness of destinations.

In order to compete in the market, He et al. [39] looked at how tour operators might make strategic choices to adopt green tourism. The interactions between tour operators that opt for standard versus green innovation techniques are modeled in this study using evolutionary game theory. The findings show that operators with a cost advantage are more likely to implement green technologies in a market with tourists who care about the environment. However, no tour operator will use this tactic in situations where visitors have few environmental preferences. This study also examines the ways in which green subsidies and other government initiatives can encourage operators to adopt sustainable tourist practices.

The effectiveness of subsidies is higher for more creative operators or in highly competitive destinations, highlighting the significance of governments determining which tourism industry players are most suited to carry out sustainable projects.

5. Discussion

According to a bibliometric study, there is increasing interest worldwide in creating strategies that strike a balance between tourism's social and environmental sustainability and economic growth. The increasing importance of integrating sustainability as a fundamental component in maintaining and improving the competitiveness of tourism destinations [40] is reflected in the steady growth of publications as of 2019, indicating that researchers and practitioners in the sector are becoming more aware of the need to integrate sustainable practices to ensure the long-term competitiveness of destinations [5]. Techniques including ecotourism [41], sustainable destination development [42], and service certification have emerged as major literary themes.

The findings demonstrate that putting these tactics into practice helps reduce adverse effects on the environment and nearby communities while simultaneously boosting the value of tourism experiences and assisting destinations in standing out in a market that is becoming more and more competitive [43]. In order to comprehend how these preferences affect destination management and planning, scholarly and practical efforts are being made in tandem with this behavioral shift [42].

Tourism's quest for sustainable competitiveness has become a complex issue that calls for the harmonious coexistence of environmental protection, economic expansion, and visitor satisfaction. A more comprehensive understanding of how tourist destinations can maintain their competitiveness without sacrificing their natural and cultural resources is made possible by the literature study, which provides a variety of methods and tactics to tackle this issue.

One important example is the research by Rebollo and Baidal [21], which shows that indicator-based management is crucial to reducing environmental stresses and preserving long-term sustainability in large destinations like Torrevieja. The authors highlighted the underlying conflicts between resource conservation and tourism growth, even in the face of attempts to enact sustainable legislation. This highlights the need for stronger management strategies that combine economic growth with environmental sustainability.

In a similar vein, Chen et al. [24] emphasize the significance of sufficient support resources for long-term competitiveness in their examination of Cambodia. A nation's ability to establish itself as a destination with international competitiveness is limited by its infrastructure and complementary elements. This result is in line with that of Esparon et al. [25], who demonstrated in their research on the Great Barrier Reef that while natural values are crucial for drawing

tourists, they are also delicate, and their deterioration can have a significant impact on how visitors behave and perceive the area.

However, as Mtapuri et al. [23] highlight, community-based tourism (CBT) provides a sustainable development model that not only creates economic value but also incorporates local communities in decision-making. This strategy is significant for two reasons: it not only encourages sustainability but also improves social and economic bonds within communities, reducing economic leakage and guaranteeing more equal growth.

Similarly, Buffa [22] emphasizes how younger generations can help advance eco-friendly travel. Young people's increasing desire for genuine and responsible experiences highlights a significant trend: younger consumers now expect sustainability rather than just having it as an option. In order to appeal to this expanding market of eco-aware travelers, tourism management has been compelled to modify their approaches.

Knowles et al. [28] study of Canadian ski resorts emphasizes the need for swift adaptation in order to lessen the effects of climate change in locations that depend on delicate natural resources. For these locations to be competitive, long-term planning and adaptation techniques like artificial snowmaking will be essential.

Accordingly, Zhao et al. [29] offer a thorough method for evaluating urban tourist competitiveness and contends that maintaining competitiveness requires incorporating local populations into planning and service enhancement. In the context of urban destinations, where sustainability issues differ from those encountered by nature attractions, this is particularly pertinent.

Agudo et al. [33] study on hotel quality certification shows how sustainability certifications can have a favorable impact on consumer perception, hence enhancing the destination's competitiveness. This approach can increase long-term success and foster consumer loyalty by emphasizing corporate social responsibility.

Additionally, as a new field that has gained popularity in the past ten years, this study emphasizes the significance of technology in sustainable destination management [44]. The administration of tourist locations is changing as a result of technological advancements, including digital platforms, artificial intelligence (AI), and environmental management systems [45, 46]. According to the literature, these technologies not only increase the sustainability and effectiveness of tourism operations but also enhance the visitor experience by enabling more precise monitoring of the effects of tourism and the personalization of services.

Advanced technologies like recommender systems and predictive analytics, which employ machine learning algorithms to forecast visitor preferences and behaviors, have been made possible by the application of artificial intelligence systems in destination management [47]. With the help of these tools, destination managers may optimize tourism flows and enhance visitors' experiences by making data-driven decisions.

Significant obstacles prevent the broad adoption of sustainable practices, even in the face of advancements in their study and application. Reliance on cutting-edge technological infrastructure and data quality in places without the means to successfully deploy these technologies is one of the primary obstacles [48, 49]. Inequities in their implementation and overall impact result from the competitiveness and sustainability disadvantages faced by destinations without access to these technologies.

Furthermore, with the growing digitization and usage of AI systems that gather personal data, ethical issues and data privacy continue to be crucial considerations in tourism information management [50]. Adoption of these technologies depends on user and community acceptability and trust, and a recent study indicates that the absence of clear guidelines for data protection and ethical information management may impede advancement in this field [51].

Lastly, given the variations in infrastructure and technical advancements among destinations, future studies should concentrate on examining how sustainable competitiveness strategies might be tailored to particular regional contexts. By adapting these tactics, more locations regardless of their degree of development will be able to implement competitive and sustainable practices.
Furthermore, more research should be conducted on the use of AI in sustainable tourist destination design and urban planning. Opportunities to increase the sector's resilience and competitiveness in the face of global issues like climate change and economic volatility are presented by this developing field. By incorporating AI into urban management, it may be possible to maximize resource utilization, lessen the environmental impact of tourism, and guarantee sustainable and balanced growth.

Examining these activities' long-term effects on the social, economic, and environmental sustainability of tourist destinations is also essential. It is important to take into account elements such as local employment, social inclusion, and cultural heritage preservation. In this way, assessing these long-term effects will enable the improvement of laws and procedures, guaranteeing that sustainable tourism is not only competitive but also equitable and inclusive.

6. Conclusion

This study emphasizes how crucial it is to use an all-encompassing and multidisciplinary approach in order to attain sustainable tourist competitiveness. It is clear that incorporating economic, social, and environmental considerations into the design and administration of tourist attractions enhances visitor experiences and fosters sustainable economic growth in addition to helping to protect natural and cultural resources. The lack of technological infrastructure in some places and the requirement for a uniform regulatory framework are two issues that persist despite advancements in the application of these techniques. In order to exchange resources and information and enable less developed locations to successfully implement sustainable plans, it is imperative that regional and international collaborations be strengthened. In order to optimize long-term sustainability and competitiveness, future research should concentrate on tailoring these approaches to

particular situations and making the best use of cutting-edge technologies, such as artificial intelligence.

References

[1] Q. B. Baloch *et al.*, "Impact of tourism development upon environmental sustainability: a suggested framework for sustainable ecotourism," *Environmental Science and Pollution Research*, vol. 30, no. 3, pp. 5917-5930, 2023. https://doi.org/10.1007/s11356-022-22496

[2] B. D. Simo-Kengne, "Tourism growth and environmental sustainability: trade-off or convergence?," *Environment, Development and Sustainability*, vol. 24, no. 6, pp. 8115-8144, 2022. https://doi.org/10.1007/s10668-021-01775-5

[3] V. Torres-Díaz, M. D. L. C. del Río-Rama, J. Álvarez-García, and B. Simonetti, "Environmental sustainability and tourism growth: Convergence or compensation?," *Quality & Quantity*, pp. 1-24, 2024.

[4] F. F. Adedoyin, U. V. Alola, and F. V. Bekun, "On the nexus between globalization, tourism, economic growth, and biocapacity: Evidence from top tourism destinations," *Environmental Science and Pollution Research*, pp. 1-11, 2021. https://doi.org/10.1007/s11356-021-17651-8

[5] A.-N. Soh, C.-H. Puah, and M. A. Arip, "A bibliometric analysis on tourism sustainable competitiveness research," *Sustainability*, vol. 15, no. 2, p. 1035, 2023. https://doi.org/10.3390/su15021035

[6] M. I. Diéguez-Castrillón, A. Gueimonde-Canto, and N. Rodríguez-López, "Sustainability indicators for tourism destinations: bibliometric analysis and proposed research agenda," *Environment, Development and Sustainability*, vol. 24, no. 10, pp. 11548-11575, 2022. https://doi.org/10.1007/s10668-021-01951-7

[7] K. S. Bricker and S. Snyman, "Ecotourism models: Identifying contributions to conservation and community," *Frontiers in Sustainable Tourism*, vol. 2, p. 1232666, 2023. https://doi.org/10.3389/frsut.2023.1232666

[8] F. Khaledi Koure, M. Hajjarian, O. Hossein Zadeh, A. Alijanpour, and R. Mosadeghi, "Ecotourism development strategies and the importance of local community engagement," *Environment, Development and Sustainability*, vol. 25, no. 7, pp. 6849-6877, 2023. https://doi.org/10.1007/s10668-022-02338-y

[9] M. A. Fauzi, "Sustainable tourism and sustainable development goals (SDGs): A state-of-the-art review of past, present, and future trends," *Environment, Development and Sustainability*, pp. 1-22, 2023. https://doi.org/10.1007/s10668-023-04077-0

[10] Z. Ajuhari, A. Aziz, S. S. N. Yaakob, S. Abu Bakar, and M. Mariapan, "Systematic literature review on methods of assessing carrying capacity in recreation and tourism destinations," *Sustainability*, vol. 15, no. 4, p. 3474, 2023. https://doi.org/10.3390/su15043474

[11] N.-M. Diakomichalis and M. Diakomihalis, *Sustainable tourism within the boundaries of carrying capacity and tourism satellite account. In D. Vrontis, A. Thrassou, L. Efthymiou, Y. Weber, S. M. R. R. Shams, & C. E. Tsoukatos (Eds.), Business for Sustainability, Volume II: Contextual Evolution and Elucidation*. Cham: Springer, 2023.

[12] A. Kirby, "Exploratory bibliometrics: using VOSviewer as a preliminary research tool," *Publications*, vol. 11, no. 1, p. 10, 2023. https://doi.org/10.3390/publications11010010

[13] V. K. Singh, P. Singh, M. Karmakar, J. Leta, and P. Mayr, "The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis," *Scientometrics*, vol. 126, pp. 5113-5142, 2021. https://doi.org/10.1007/s11192-021-03948-5

[14] J. F. Burnham, "Scopus database: A review," *Biomedical Digital Libraries*, vol. 3, pp. 1-8, 2006. https://doi.org/10.1186/1742-5581-3-1

[15] M. İyibildiren, T. Eren, and M. B. Ceran, "Bibliometric analysis of publications on web of science database related to accounting information system with mapping technique," *Cogent Business & Management*, vol. 10, no. 1, p. 2160584, 2023. https://doi.org/10.1080/23311975.2022.2160584

[16] P. Wouters, "Towards the origins of scientometrics," *Acts of Research in Social Sciences*, vol. 164, no. 4, pp. 11-22, 2006.

[17] D. Meneses, C. Costa, F. A. Ferreira, and C. Eusébio, *Sustainability innovation in tourism: A systematic literature review. In A. L. Negruşa C M. M. Coroş (Eds.), Sustainable Approaches and Business Challenges in Times of Crisis*. Switzerland: Springer Nature, 2024.

[18] A. Durán-Sánchez, J. Álvarez-García, M. d. l. C. del Río-Rama, and B. Rosado-Cebrián, "Science mapping of the knowledge base on tourism innovation," *Sustainability*, vol. 11, no. 12, p. 3352, 2019. https://doi.org/10.3390/su11123352

[19] I. Zupic and T. Čater, "Bibliometric methods in management and organization," *Organizational Research Methods*, vol. 18, no. 3, pp. 429-472, 2015. https://doi.org/10.1177/1094428114562629

[20] D. Tranfield, D. Denyer, and P. Smart, "Towards a methodology for developing evidence-informed management knowledge by means of systematic review," *British Journal of Management*, vol. 14, no. 3, pp. 207-222, 2003. https://doi.org/10.1111/1467-8551.00375

[21] J. F. V. Rebollo and J. A. I. Baidal, "Measuring sustainability in a mass tourist destination: Pressures, perceptions and policy responses in Torrevieja, Spain," *Journal of Sustainable Tourism*, vol. 11, no. 2-3, pp. 181-203, 2003. https://doi.org/10.1080/09669580308667202

[22] F. Buffa, "Young tourists and sustainability. Profiles, attitudes, and implications for destination strategies," *Sustainability*, vol. 7, no. 10, pp. 14042-14062, 2015. https://doi.org/10.3390/su71014042

[23] O. Mtapuri, M. A. Camilleri, and A. Dłużewska, "Advancing community-based tourism approaches for the sustainable development of destinations," *Sustainable Development*, vol. 30, no. 3, pp. 423-432, 2022. https://doi.org/10.1002/sd.2257

[24] C.-Y. Chens, P. Sok, and K. Sok, "Evaluating the competitiveness of the tourism industry in Cambodia: Self-assessment from professionals," *Asia Pacific Journal of Tourism Research*, vol. 13, no. 1, pp. 41-66, 2008. https://doi.org/10.1080/10941660701883367

[25] M. Esparon, N. Stoeckl, M. Farr, and S. Larson, "The significance of environmental values for destination competitiveness and sustainable tourism strategy making: insights from Australia's Great Barrier Reef World Heritage Area," *Journal of Sustainable Tourism*, vol. 23, no. 5, pp. 706-725, 2015. https://doi.org/10.1080/09669582.2014.998678

[26] L. Barcellos-Paula, A. Castro-Rezende, and A. M. Gil-Lafuente, "Application of the Affinities Theory to the environmental sustainability of tourist destinations: The case of Ljubljana," *Cleaner and Responsible Consumption*, vol. 14, p. 100216, 2024. https://doi.org/10.1016/j.clrc.2024.100216

[27] J. R. Saragih *et al.*, "Assessing tourism object management towards sustainable tourism development strategy: A SWOT analysis," *International Journal of Sustainable Development & Planning*, vol. 19, no. 8, pp. 3235-3245, 2024. https://doi.org/10.18280/ijsdp.190835

[28] N. L. Knowles, D. Scott, and R. Steiger, "Climate change and the future of ski tourism in Canada's western mountains," *Tourism and Hospitality*, vol. 5, no. 1, pp. 187-202, 2024. https://doi.org/10.3390/tourhosp5010013

[29] Y. Zhao, W. Shang, X. Qin, and K. Li, "Developing an evaluation model for urban tourism competitiveness: Combining community construction and community service to foster sustainable development of cities," *Frontiers in Public Health*, vol. 12, p. 1435291, 2024. https://doi.org/10.3389/fpubh.2024.1435291

[30] R. Purwono, M. A. Esquivias, L. Sugiharti, and O. Rojas, "Tourism destination performance and competitiveness: The impact on revenues, jobs, the economy, and growth," *Journal of Tourism and Services*, vol. 15, no. 28, pp. 161-187, 2024. https://doi.org/10.29036/jots.v15i28.629

[31] L. Huang, "Research on regional tea tourism product development strategy combined with RMP analysis," *Applied Mathematics and Nonlinear Sciences, S*, 2024. https://doi.org/10.2478/amns-2024-0576

[32] D. Satria and J. M. Wibowo, "Big data analysis of sustainable tourism competitiveness in East Java Province," *Academica Turistica*, vol. 14, no. 2, pp. 189-203, 2021. https://doi.org/10.26493/2335-4194.14.189-203

[33] J. C. Agudo, P. M. G. De Leaniz, Á. H. Crespo, and R. C. Gómez-López, "Quality-certified hotels: The role of certification bodies on the formation of customer behavioral intentions," *Sustainability*, vol. 13, no. 22, p. 12733, 2021. https://doi.org/10.3390/su132212733

[34] B. E. Escoto, N. I. Montero Delgado, and F. A. Rivera Aguirre, "Strategic analysis of sustainable tourism in Baja California against COVID-19," *Sustainability*, vol. 13, no. 7, p. 3948, 2021. https://doi.org/10.3390/su13073948

[35] L. Zhu, L. Zhan, and S. Li, "Is sustainable development reasonable for tourism destinations? An empirical study of the relationship between environmental competitiveness and tourism growth," *Sustainable Development*, vol. 29, no. 1, pp. 66-78, 2021. https://doi.org/10.1002/sd.2131

[36] V. Lopes, S. Moreno Pires, and R. Costa, "A strategy for a sustainable tourism development of the Greek Island of Chios," *Tourism: An International Interdisciplinary Journal*, vol. 68, no. 3, pp. 243-260, 2020. https://doi.org/10.37741/T.68.3.1

[37] D. E. G. Vásquez and J. A. T. Víllegas, "Línea base de sostenibilidad turística en municipios con menores ingresos y población de Colombia," *Tourism and Society*, vol. 29, pp. 263-291, 2021. https://doi.org/10.18601/01207555.n29.12

[38] J. Johnsen, T. Bieger, and R. Scherer, "Indicator-based strategies for sustainable tourism development," *Mountain Research and Development*, vol. 28, no. 2, pp. 116-121, 2008. https://doi.org/10.1659/mrd.0973

[39] Y. He, P. He, F. Xu, and C. Shi, "Sustainable tourism modeling: Pricing decisions and evolutionarily stable strategies for competitive tour operators," *Tourism Economics*, vol. 25, no. 5, pp. 779-799, 2019. https://doi.org/10.1177/1354816618806729

[40] C. J. Fernandez-Abila *et al.*, "Characterizing the sustainable tourism development of small islands in the Visayas, Philippines," *Land Use Policy*, vol. 137, p. 106996, 2024. https://doi.org/10.1016/j.landusepol.2023.106996

[41] R. Sisto, G. M. Cappelletti, P. Bianchi, and E. Sica, "Sustainable and accessible tourism in natural areas: A participatory approach," *Current Issues in Tourism*, vol. 25, no. 8, pp. 1307-1324, 2022. https://doi.org/10.1080/13683500.2021.1920002

[42] P. Beritelli, G. Crescini, S. Reinhold, and V. Schanderl, "How flow-based destination management blends theory and method for practical impact," *Tourist Destination Management: Instruments, Products, and Case Studies*, pp. 289-310, 2019. https://doi.org/10.1007/978-3-030-16981-7_17

[43] R. Gupta, M. Ear, M. Janardhan, H. Kumawat, and C. Shekhar, "Sustainable tourism development: Balancing economic growth and environmental conservation," 2024. https://doi.org/10.13140/RG.2.2.18018.34245

[44] C. Pasquinelli and M. Trunfio, *Sustainability-oriented innovation in smart destinations: An integrative perspective. In C. Pasquinelli C M. Trunfio (Eds.), Sustainability-oriented Innovation in Smart Tourism: Challenges and Pitfalls of Technology Deployment for Sustainable Destinations*. Springer International Publishing. https://doi.org/10.1007/978-3-031-33677-5_1, 2023.

[45] A. Ali and A. J. Frew, "Technology innovation and applications in sustainable destination development," *Information Technology & Tourism*, vol. 14, no. 4, pp. 265-290, 2014. https://doi.org/10.1007/s40558-014-0015-7

[46] Y. El Archi, B. Benbba, M. Kabil, and L. D. Dávid, "Digital technologies for sustainable tourism destinations: State of the art and research agenda," *Administrative Sciences*, vol. 13, no. 8, p. 184, 2023. https://doi.org/10.3390/admsci13080184

[47] Y. Song and Y. He, "Toward an intelligent tourism recommendation system based on artificial intelligence and IoT using Apriori algorithm," *Soft Computing*, vol. 27, no. 24, pp. 19159-19177, 2023. https://doi.org/10.1007/s00500-023-09330-2

[48] E. McLoughlin, K. Maguire, and J. Hanrahan, "Barriers to evidence-based sustainable planning for tourism: Perspectives from Ireland's local authorities," *Sustainability*, vol. 15, no. 23, p. 16274, 2023. https://doi.org/10.3390/su152316274

[49] A. Królikowska-Tomczak, *Premises and barriers to sustainable tourism indicator systems implementation. In Industry, Innovation and Infrastructure*. Cham: Springer, 2021.

[50] J. J. Zhu, Z. Liu, T. Huang, and X. S. Guo, "Roboethics of tourism and hospitality industry: A systematic review," *Plos One*, vol. 18, no. 6, p. e0287439, 2023. https://doi.org/10.1371/journal.pone.0287439

[51] A. Heidt, "Intellectual property and data privacy: the hidden risks of AI," *Nature*, 2024. https://doi.org/10.1038/d41586-024-02838-z