



Bibliometric Analysis and Systematic Literature Review on Sustainable Tourism: Trends, Gaps, and Future Directions

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ABSTRACT

Sustainable tourism has emerged as a critical aspect of contemporary life, driven by the exponential growth of the tourism industry globally. Despite its positive contribution to GDP and job creation, tourism also raises concerns about its environmental and social sustainability. The concept of sustainable tourism gained momentum in the 1990s, shifting the focus from mass tourism to sustainable development within the industry. However, challenges persist, in response to which governments and international organizations emphasized on sustainable tourism initiatives, aiming to balance economic development with environmental preservation.

This paper presents a comprehensive review of research in the field of sustainable tourism development, employing both bibliometric analysis and systematic literature review (SLR) methodologies. The study identifies influential authors, institutions, and research themes by analysing publication trends, citation patterns, and collaboration networks. By synthesizing diverse literature from various fields, the SLR offers interdisciplinary perspectives and a holistic understanding of sustainability issues in tourism. Through cross-validation with the bibliometric analysis, the study aims to provide nuanced insights into both the quantitative and qualitative aspects of scholarly contributions in sustainable tourism research.

Comprehensively, the paper contributes to a deeper understanding of sustainable tourism development, offering valuable insights for academia, industry, and policy. It aims to inform future research agendas, policy formulation, and industry practices in support of sustainable tourism initiatives by identifying research gaps, emerging trends, and best practices.

Keywords: sustainable tourism, sustainable development goals, Bibliometric analysis, systematic literature review, research trends

Introduction

Background of Sustainable Tourism

The tourism industry has developed into a vital aspect of modern life. According to UNWTO, 1.4 billion people travelled globally in 2019 (Streimikiene et. al; 2020). Tourism leads to an increase in GDP but also leads to excessive energy use. Egresi & Kara, 2018 said there should be a connection between sustainable development and tourism. UNWTO, 2020 reported 1.9 billion tourist arrivals, and 1.8 billion international tourists are expected by 2030 (UNWTO & United Nations Development Programme (UNDP), 2017). In the last 5 years, travel and tourism have been responsible for creating one in every five jobs (Santos et al; 2021). Numerous literatures highlight the positive impact of tourism (Esfandiar et al., 2020; Hall et al., 2015) while growing concerns are raised regarding the sustainability of the tourism sector (Hall; 2019). In the 1990s, the idea of sustainable tourism gained traction globally, shifting the focus from mass tourism to sustainable development within the tourism industry (Swarbrooke; 1999). Mass tourism can result in detrimental environmental impacts and disastrous consequences. Tourist attractions globally face environmental obstacles such as inappropriate and inadequate infrastructure, waste management, security, governance, and sewage treatment, resulting in sustainability issues and decreased tourist influx; proper management, preserving pristine environments, and prompt actions are crucial to tackling waste management, water

shortages, and other environmental and societal issues. India's government delayed emphasis on sustainable tourism initiatives, creating criteria mainly for hoteliers, tourism organizations, and tour operators leading to improved tourism rankings but a decline in environmental sustainability (Kisi, 2019; Yang et al; 2023)

Tourism needs to acknowledge its duty to the environment by endorsing landscape preservation and enhancing natural surroundings (Sarfaraz et al; 2015). The main motives of sustainable development are to preserve the environment from the damaging effects of development and to incorporate environmental preservation and community engagement. UN 2030 agenda focuses on sustainable development by enhancing conservation efforts, monitoring and controlling on use of natural resources, increasing employment opportunities for locals, and promoting local culture and local products. Increased traveller numbers despite a lack of sustainability results in non-sustainable travel solutions. Social tourism and green tourism are important issues of competitiveness.

Rationale for Bibliometric Analysis and SLR

Bibliometric analysis in the context of sustainable tourism can provide valuable insights into the field of sustainable tourism. Bibliometric analysis will help researchers map out the landscape of sustainable tourism research comprehensively. It will help researchers identify key themes, trends, and areas of focus within the context. It will help in better understanding of the current state of research, including gaps and areas of saturation.

Bibliometric analysis enables the identification of influential authors, institutions, and research groups within the field of sustainable tourism. Institutions By analyzing citation patterns, collaboration networks, and publication outputs, researchers can pinpoint the individuals and organizations that have made significant contributions to the advancement of knowledge in this area. This information can be valuable for collaboration, networking, and resource allocation purposes. It will also help to track the growth and impact of sustainable tourism research over time. By examining publication trends, citation counts, and other bibliometric indicators, researchers can assess the dissemination and uptake of research findings within the academic community and beyond. It also gives an insight into emerging research areas and trends within sustainable tourism. By analysing keyword co-occurrence networks and clustering techniques, researchers can identify new and evolving topics of interest, as well as potential interdisciplinary connections with other fields. This information can inform future research agendas and help researchers stay abreast of emerging issues and developments within the field. By synthesizing and summarizing existing research findings, bibliometric analyses can help stakeholders identify best practices, prioritize research agendas, and inform policy development in support of sustainable tourism initiatives.

Undertaking a systematic literature review (SLR) on sustainable tourism is crucial for several reasons. Firstly, sustainable tourism has emerged as a pressing global concern due to its significant impacts on economies, environments, and societies. As tourism continues to expand rapidly, particularly in developing regions, there is a growing need to understand and address the challenges and opportunities associated with achieving sustainability within this industry. An SLR provides a comprehensive overview of existing research and insights into the current state of knowledge, enabling researchers, policymakers, and practitioners to identify gaps, trends, and areas for further investigation. By synthesizing diverse literature from various fields, an SLR can offer interdisciplinary perspectives and a holistic understanding of sustainability issues in tourism. This interdisciplinary approach is essential for developing effective strategies and interventions that consider the complex interactions between economic development, environmental conservation, and social equity. SLR allows researchers to contribute to the academic literature by synthesizing existing knowledge, identifying research gaps, and proposing new research directions. This process of knowledge synthesis and generation is essential for building a robust evidence base and advancing the state of the art in sustainable tourism research and practice.

In summary, the rationale for conducting a bibliometric analysis in the context of sustainable tourism lies in its ability to provide a comprehensive overview of the research landscape, identify key contributors and trends, track research impact and growth, identify emerging research areas, and support evidence-based decision making within the field. SLR on sustainable tourism is essential for addressing pressing global challenges, fostering interdisciplinary collaboration, identifying best practices, and advancing theoretical and methodological approaches in the field. By systematically reviewing and synthesizing existing literature, researchers can contribute to the development of more sustainable tourism practices that promote economic prosperity, environmental stewardship, and social well-being for current and future generations.

Research Questions:

RQ: The purpose of this paper is to review research in the field of sustainable tourism development. The review addresses the following research questions:

RQ1: What has been the growth trend in sustainable tourism research publication starting from the advent of the concept?

RQ2: What is the volume and document citation by the time of the concept of sustainable tourism up till beginning of 2023 and What are the top journals that have published the 100 most-cited articles on sustainable tourism

RQ3. Which are the countries that contributed most to the knowledge base of sustainable tourism between 1992 to early 2023?

RQ4. What is the intellectual structure of knowledge in sustainable tourism?

RQ5. What are the key concepts and forms that have been explored in sustainable development and how they are related?

RQ6. What is the nature of collaboration that is evident in the publications of sustainable development literature?

Structure of the Paper:

The paper's structure for bibliometric analysis and SLR of sustainable tourism typically follows a systematic layout to comprehensively explore the research landscape. It begins with an introduction providing context on sustainable tourism and the rationale for conducting a bibliometric analysis and SLR. The methodology section outlines the data collection process, including database selection, search strategies, and inclusion criteria. Following this, the results section presents findings on publication trends, authorship patterns, citation analysis, keyword analysis, and collaboration networks and the most prominent forms through which sustainable tourism is studied. The discussion interprets these findings, highlighting key trends, identifying gaps, and discussing implications for theory and practice. The conclusion summarizes the main findings and their significance, while also suggesting directions for future research. Overall, this structured approach ensures a thorough examination of sustainable tourism research through a bibliometric lens, and a brief study through SLR offering valuable insights for academia, industry, and policy.

Methodology

This paper focuses on science mapping analysis that shows the existing relationships between disciplines, fields of research, scholars, and papers according to a spatial representation. This paper is structured following a precise protocol of some scholars 1. Data collection; 2. Data analysis and data visualization; and 3. Interpretation. We performed our analysis through the Vos viewer, which is specifically designed for quantitative research. Scopus database was used to search peer-reviewed scientific articles in English to study the literature in the specific domain of sustainable tourism. The documents were extracted based on title, abstract, and keywords, and were limited to article and review papers. The keywords "Sustainable Tourism" and the documents were limited to English. And finally, we were left with 2374 articles, which is quite large. But for a deeper knowledge of the growth of the domain, and with the ease of the VOS viewer we have taken all the articles under consideration.

The selection of studies on sustainable tourism studies for SLR involves careful consideration of several factors to ensure a comprehensive understanding of the topic. First and foremost, the chosen studies prioritize quality, with preference given to those published in Q1 journals, indicating high impact and rigorous peer review. Efforts are made to incorporate the latest research findings to ensure relevance and currency. However, older papers with significant citations or those providing foundational frameworks for understanding sustainable tourism are also included, acknowledging their enduring relevance and influence on the field.

While studies explicitly focused on sustainable tourism are prioritized, some excellent studies with keywords or titles related to sustainable tourism were not included as their primary focus lies elsewhere upon deeper examination. This ensures that the selected studies align closely with the core theme of sustainable tourism and provide meaningful insights into its various dimensions. The selected studies cover various topics within sustainable tourism, including economic benefits, environmental conservation, social equity, and governance challenges. By incorporating diverse perspectives and methodologies, these studies contribute to a holistic understanding of sustainable tourism and inform future research, policy-making, and practice in the field.

The addition of a systematic literature review (SLR) alongside the bibliometric analysis enhances the robustness and depth of the research endeavour within sustainable tourism. By incorporating an SLR focused on the latest Q1 papers, the study aims to validate and contextualize the findings derived from the bibliometric analysis. The SLR provides an opportunity to delve deeper into specific themes, methodologies, and findings of recent high-quality research publications, thus complementing the broader insights gained from the bibliometric analysis. This approach allows researchers to cross-validate trends, identify emerging topics, and assess the relevance of the bibliometric findings within the current scholarly landscape. By comparing and contrasting the results of the bibliometric analysis with those of the SLR, the study can provide a comprehensive understanding of the state of sustainable tourism research, offering nuanced insights into both the quantitative and qualitative aspects of scholarly contributions. Moreover, the synchronization between the bibliometric analysis and the SLR findings enhances the credibility and reliability of the study's conclusions, thereby strengthening its relevance for informing future research directions, policy formulation, and industry practices within the realm of sustainable tourism.

Growth Trends in Sustainable Tourism Literature

Publication Output Over Time:

The escalating publication output on sustainable tourism underscores a global shift towards prioritizing sustainability in the tourism sector, driven by increasing awareness, policy emphasis, market demand for responsible travel experiences, and urgent environmental concerns like climate change and biodiversity loss. Researchers, policymakers, and industry stakeholders are collaboratively exploring strategies to mitigate the negative impacts of tourism on the environment, local communities, and cultural heritage, while also recognizing the business imperatives of adopting sustainable practices. This trend reflects a collective effort to achieve the Sustainable Development Goals by 2030, fostering a more sustainable and resilient tourism industry that balances economic growth with environmental protection and social responsibility.

Top journals publishing in the area of sustainable tourism along with citations

The graph above describes the no. of publications related to sustainable tourism. Sustainability (Switzerland) lands on the top with the highest number of publications, followed by the Journal of Sustainable Tourism and WIT transactions on ecology and the environment. The highest citations are reported again Sustainability (Switzerland) followed by Journal of Sustainable Tourism and Tourism Management.

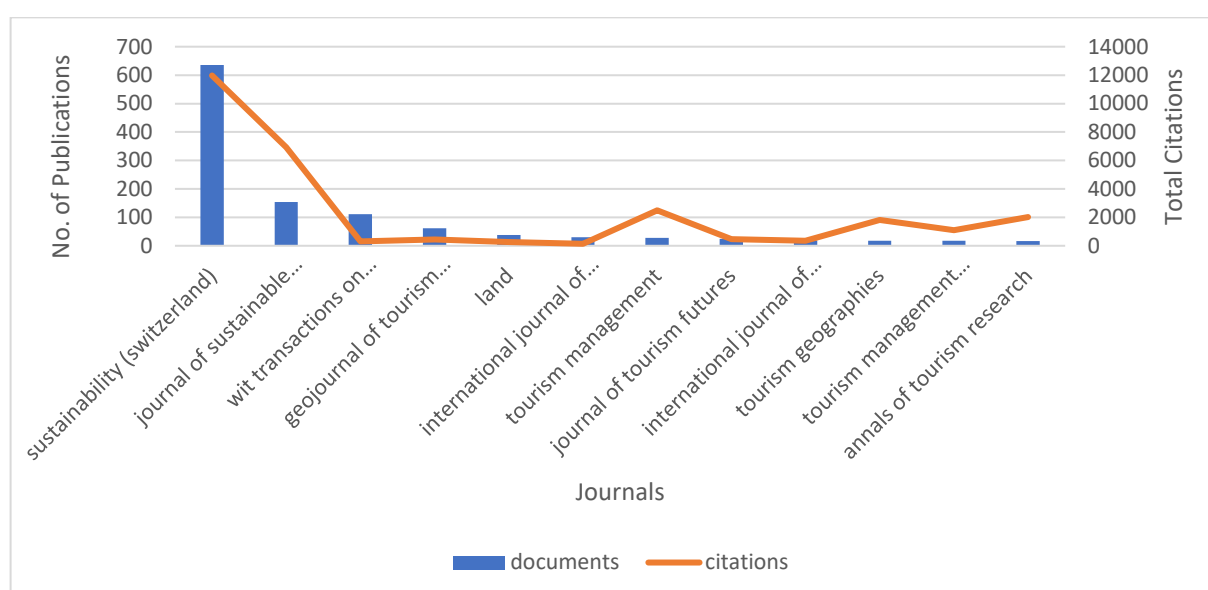


Figure. 1 Top journals publishing in the area of sustainable tourism along with citations

Productivity and Impact of Leading Countries

Geographically studying the number of publications, the highest number of publications and citations country-wise are from the United Kingdom, followed by Spain and China. From the Below graph, it can be interpreted that the United Kingdom is active in research related to Sustainable tourism.

Table 1: Productivity and Impact of Leading Countries

Country	Documents	Citations
United Kingdom	268	10155
Spain	254	4993
China	252	4327
Italy	194	3239
Australia	162	7857
United States	152	3344
Indonesia	128	885
Poland	115	1501
Portugal	98	1209
SouthAfrica	90	2677
Malaysia	76	1168
Romania	75	1256

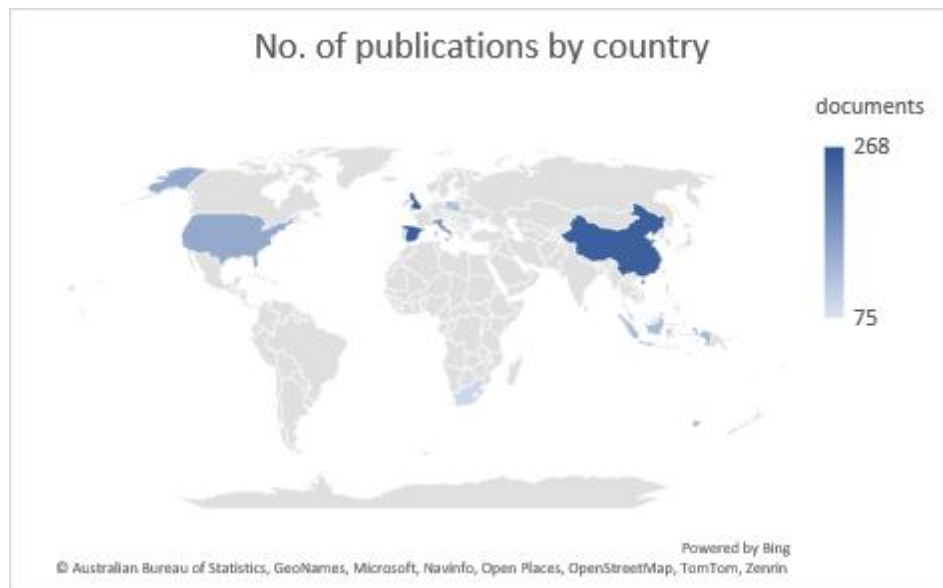


Figure 2. Geographic Distribution of Research

Collaboration Patterns by Countries:

With a minimum number of documents limited to 5, out of 130 countries, only 75 meet the threshold. The research highlights a robust network of collaboration among authors both within the same continent and across different continents. This suggests that sustainable tourism is a compelling topic, drawing significant interest from countries worldwide. Authors are eager to collaborate and share their expertise, indicating a collective effort towards advancing sustainable tourism practices. This collaboration not only enriches the body of knowledge on sustainable tourism but also signifies a concerted global commitment towards achieving sustainable development goals. Through sharing experiences, best practices, and innovative approaches, countries are actively contributing to the broader objective of sustainable development.

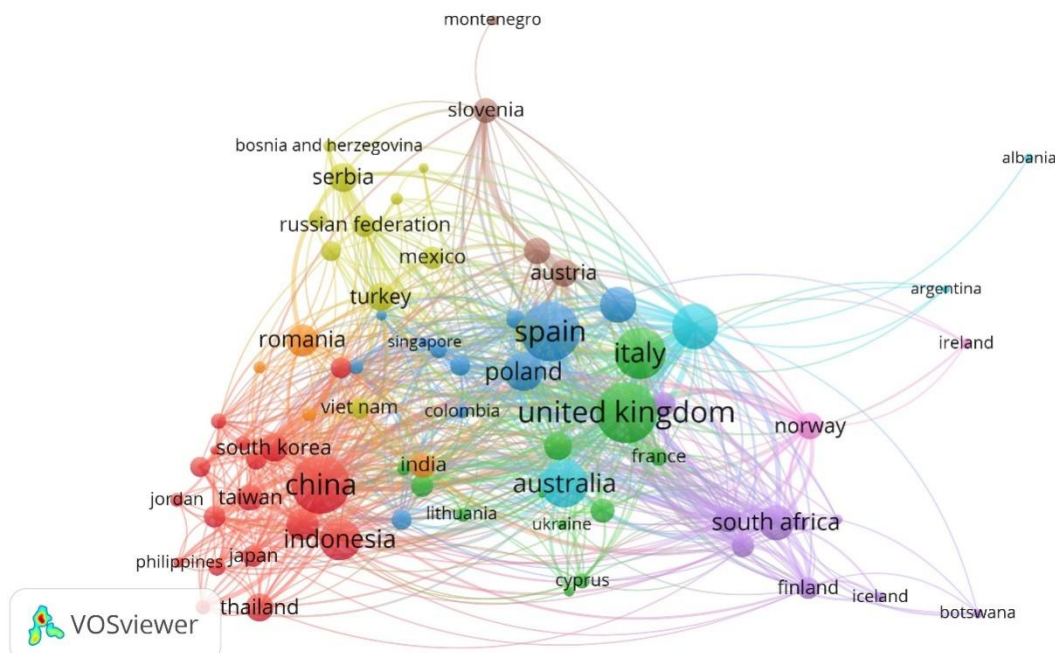


Figure 3. Analysis of Collaboration Patterns by Countries

Co-authorship Networks along with countries

The figure below illustrates a robust collaboration network involving authors and countries in the context of sustainable tourism. This network highlights the interconnectedness and mutual engagement among various nations in addressing sustainable tourism challenges and opportunities. Authors from different countries are coming together to collaborate on research and initiatives related to sustainable tourism. This collaboration not only fosters the exchange of knowledge and expertise but also promotes cross-cultural understanding and

cooperation. By pooling resources and insights, countries can work together to develop innovative solutions and strategies for promoting sustainable tourism practices.

Through joint efforts and partnerships, nations can leverage their collective strengths to address environmental, social, and economic issues associated with tourism activities. This collaborative approach underscores the importance of international cooperation in advancing sustainable tourism agendas and fostering global sustainability.

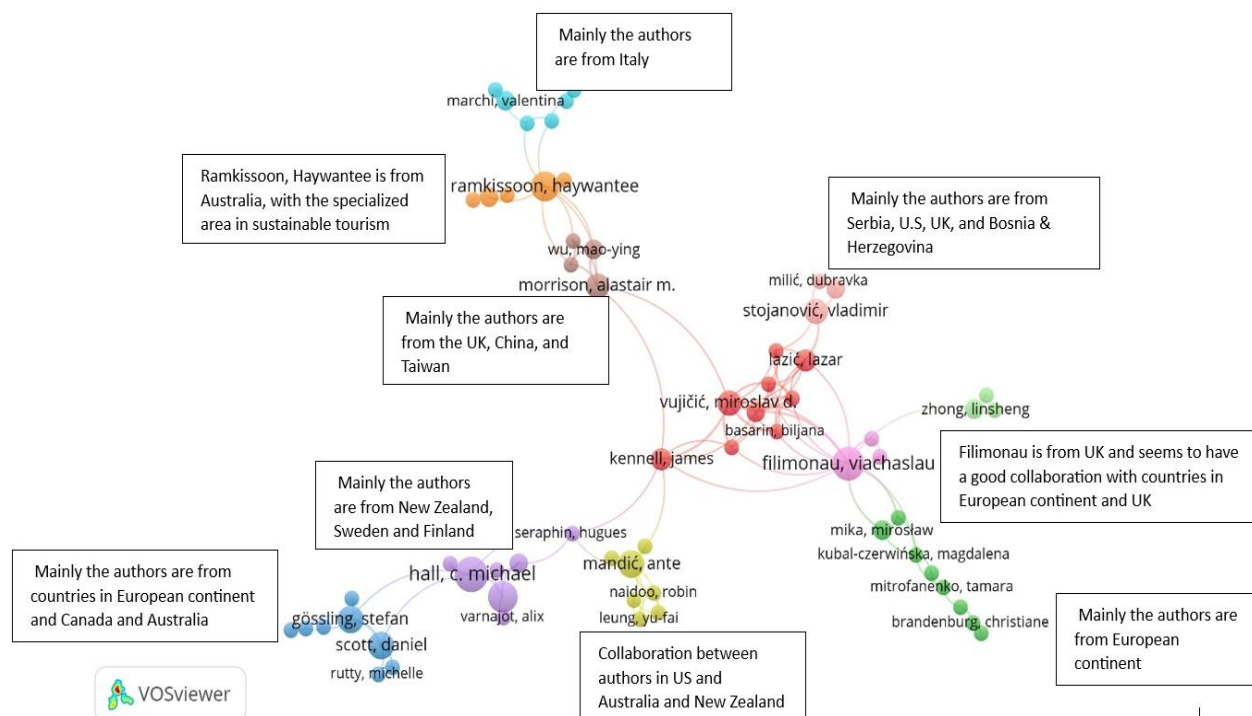


Figure 4 Co-authorship Networks along with countries

Table 2: Mapping of Research Frontier

Source	Documents	Citations	CPP	Cite score	SNIP	SJR	Journal category	H-INDEX
Sustainability (Switzerland)	636	11975	18.8286	5.8	1.198	0.664	Q1	136
Journal of Sustainable Tourism	154	6928	44.987	18.19	3.148	2.966	Q1	127
WIT transactions on ecology and the environment	111	302	2.72072	0.9	0.279	0.185		
geojournal of tourism and geosites	62	441	7.1129	3.2	0.772	0.311	Q3	20
Land	38	265	6.97368	3.7	N/A	N/A		
international journal of sustainable development and planning	30	139	4.63333	1.17	0.624	0.286	Q3	20
tourism management	28	2496	89.1429	22.9	3.643	3.561	Q1	236
journal of tourism futures	24	456	19	8.7	1.441	0.759	Q1	27
international journal of environmental	19	341	17.9474	5.4	1.28		Q2	167

Sustainability in tourism encompasses practices and policies aimed at minimizing negative environmental, social, and economic impacts while maximizing benefits for destinations and communities. This theme focuses on promoting responsible tourism development through measures such as reducing carbon footprints, conserving natural resources, supporting eco-tourism initiatives, and fostering green economies. Researchers in this area explore strategies for sustainable tourism planning, the implementation of sustainable tourism indicators, and the promotion of responsible tourism practices among tourists, businesses, and governments.

2. Technology and Tourism:

The intersection of technology and tourism involves the adoption and integration of digital tools and platforms to enhance various aspects of the tourism experience. This theme encompasses the use of artificial intelligence, big data analytics, virtual reality, social media, and mobile applications in destination management, marketing, customer engagement, and service delivery. Researchers in this area investigate the impacts of technology on tourist behaviour, destination competitiveness, and industry innovation, as well as the challenges and opportunities associated with digital transformation in tourism.

3. Community Engagement and Empowerment:

Community engagement and empowerment in tourism emphasize the active involvement of local communities in decision-making processes, tourism planning, and benefit-sharing mechanisms. This theme focuses on promoting inclusive and participatory approaches to tourism development, where communities have a voice in shaping their tourism futures and derive tangible benefits from tourism activities. Researchers explore strategies for empowering communities through community-based tourism initiatives, fostering social capital, enhancing local participation, and promoting sustainable community development.

4. Crisis Management and Resilience:

Crisis management and resilience in tourism entail preparing for and responding to unexpected events and disruptions that affect tourism destinations and businesses. This theme encompasses strategies for mitigating risks, ensuring business continuity, and building resilience against crises such as pandemics, natural disasters, political instability, and economic downturns. Researchers in this area examine the effectiveness of crisis management plans, the role of stakeholders in crisis response, the impacts of crises on destination resilience, and the communication strategies employed during crises.

5. Cultural Tourism and Heritage Conservation:

Cultural tourism and heritage conservation focus on the promotion and preservation of cultural heritage assets as tourist attractions while respecting their authenticity and significance to local communities. This theme encompasses the development of cultural tourism products, heritage conservation policies, and destination branding strategies that showcase the cultural identity and heritage of destinations. Researchers explore issues related to cultural authenticity, place attachment, sustainable heritage management, and the socio-economic impacts of cultural tourism.

6. Socioeconomic Impact and Development:

Socioeconomic impact and development in tourism examine the economic, social, and cultural effects of tourism on destination communities and economies. This theme encompasses research on the contributions of tourism to economic growth, employment generation, poverty alleviation, and community well-being. Researchers investigate the distribution of tourism benefits, the sustainability of livelihoods dependent on tourism, and the socio-cultural changes resulting from tourism development.

7. Destination Management and Governance:

Destination management and governance focus on the effective planning, coordination, and governance of tourism activities within destinations to ensure sustainable development and competitiveness. This theme encompasses research on destination management organizations, public-private partnerships, tourism policies, regulatory frameworks, and stakeholder engagement mechanisms. Researchers explore issues related to destination branding, marketing strategies, infrastructure development, and the role of governance structures in destination management.

8. Health and Wellness Tourism:

Health and wellness tourism involves travel experiences that prioritize health, well-being, and relaxation, encompassing activities such as spa retreats, wellness resorts, and medical tourism. This theme focuses on understanding the motivations and behaviours of health-conscious travellers, the development of health tourism infrastructure, and the integration of wellness initiatives into destination offerings. Researchers investigate the impacts of health tourism on destination economies, public health considerations, and the sustainability of health-focused travel experiences.

9. Climate Change and Environmental Impact:

Climate change and environmental impact in tourism address the challenges posed by climate change and environmental degradation to tourism destinations and ecosystems. This theme encompasses research on the vulnerability of tourism assets to climate-related hazards, the development of adaptation strategies, and the mitigation of carbon emissions and environmental impacts associated with tourism activities. Researchers explore issues related to biodiversity conservation, marine protection, sustainable resource management, and the integration of environmental considerations into tourism planning and development.

10. Market Trends and Consumer Behaviour:

Market trends and consumer behaviour in tourism focus on understanding the preferences, motivations, and decision-making processes of tourists, as well as the dynamics of the tourism market. This theme encompasses research on market segmentation, consumer preferences, destination choice behaviour, brand loyalty, and tourist satisfaction. Researchers investigate emerging trends in the tourism industry, changes in consumer behaviour influenced by technology and socio-economic factors, and the implications for destination management and marketing strategies.

Overview of the included studies for SLR:

Recent Q1 publications on sustainable tourism delve into contemporary challenges and opportunities, emphasizing the critical role of governance, community engagement, sustainable practices, and destination management. Studies underscore the importance of effective government policies and regulations in promoting sustainability, while also advocating for greater collaboration among stakeholders to address complex sustainability issues. Community empowerment initiatives are highlighted as essential drivers of sustainable tourism development, fostering local ownership and equitable distribution of benefits. Additionally, the research explores innovative practices and technologies aimed at reducing environmental impacts, enhancing resource efficiency, and promoting responsible tourism behaviour. Carrying capacity assessments and destination management plans are also examined to ensure the long-term viability of tourism destinations.

In parallel, seminal works in sustainable tourism provide foundational insights into key concepts and frameworks shaping the discourse on sustainability. These studies advocate for a holistic approach to sustainable tourism, balancing economic, environmental, and social dimensions. They stress the importance of stakeholder engagement and collaboration, highlighting the need for integrated planning and monitoring mechanisms. Foundational frameworks outline principles for sustainable destination management, offering guidance for destination stakeholders seeking to enhance sustainability performance. By synthesizing insights from both recent publications and seminal works, a comprehensive understanding of sustainable tourism emerges, emphasizing the multifaceted nature of sustainability challenges and the importance of interdisciplinary collaboration in advancing sustainable tourism practices.

Understanding the positive and negative impact of tourism through SLR papers:

Tourism brings forth several positive impacts, notably economic growth and prosperity within destination communities. Through increased visitor spending, tourism generates revenue streams that stimulate local businesses, create job opportunities, and bolster infrastructure development. This economic influx enhances the overall quality of life for residents and can contribute to the preservation of cultural heritage and traditions (Streimikiene et al; 2020; R.W. Carter et al; 2015; E. Rahmadian et al; 2022; Weaver et al 2010). Moreover, when tourism initiatives prioritize sustainability, they can effectively address environmental concerns, leading to improved conservation efforts, waste management practices, and ecosystem protection. Additionally, tourism can foster a sense of pride and satisfaction among locals when they perceive their communities as attractive and well-maintained destinations.

Conversely, tourism also exerts negative impacts, particularly on the environment and local societies. Environmental degradation, such as habitat destruction, pollution, and depletion of natural resources, often accompanies tourism development. These activities can disrupt fragile ecosystems, leading to biodiversity loss and habitat fragmentation (Bramwell & Lane, 1993; Streimikiene et al; 2020; R.W. Carter et al; 2015; E. Rahmadian et al; 2022; Santos et al; 2021; Prihanti et al; 2020). Furthermore, the influx of tourists can place strain on local infrastructure, exacerbate congestion, and increase waste generation, leading to environmental stress and degradation. Socially, tourism can lead to changes in local lifestyles and cultural practices, often driven by the commodification of traditions to cater to tourist demands (Weaver et al; 2010). Additionally, the unequal distribution of tourism benefits can exacerbate socio-economic disparities within communities, leading to resentment and tension among locals. Overall, while tourism brings economic opportunities, its unchecked growth can have detrimental effects on both the environment and local societies. Lenzen et al., 2018 disclosed that 8% of carbon dioxide is resulted due to Tourism.

Thematic Analysis of Literature

Source (author, date)	Topic	Journal	Keywords	Purpose	Result/conclusion
Streimikiene et. al;2020	Sustainable tourism development and competitiveness: The systematic literature review	Wiley - Sustainable development	aging society, competitiveness, consumer needs, sustainable development, tourism, tourism destinations	Strengthening competitiveness along with sustainable tourism development by implementing social, environmental, and economic targets	Sustainable tourism developments are linked to competitiveness through enhancing and adopting innovations in business operations. Enterprises are interested in the implementation of new technologies with a positive impact on the environment and local communities but challenges exist: consumer motivation to adopt sustainable practices, how to change the environment, and future uncertainties in an environment like COVID-19. The study reveals a deficiency in the effective implementation of innovative strategies alongside the presence of key variables supporting sustainable practices.
R.W. Carter et al; (2015)	Sustainable tourism and its use as a development strategy in Cambodia: a systematic literature review	Journal of Sustainable Tourism	developing countries; South-East Asia; systematic review; sustainable tourism; cultural tourism; ecotourism	Is sustainable tourism really practical and equitable for developing societies with limited capital, and poor communities, and how it would be categorized	Sustainable tourism has a lot of potential but understanding national regional and local context is crucial to achieving the sustainability vision and expectations of tourism. Government policies should focus on its on-ground action rather than setting an idealistic vision
S. M. Rasoolimanesh et al. 2023	A systematic scoping review of sustainable tourism indicators concerning the sustainable	Journal of Sustainable Tourism	Sustainable tourism indicators (STIs); sustainable development goals (SDGs);	Connect sustainable tourism indicators with SDG—development of indicators to	The results revealed more focus on economic growth, social inclusion, and environmental protection while the dimension of

	development goals		governance; stakeholders; objective and subjective indicators	assess the progress towards SDG and gauging sustainability in tourism.	governance is being overlooked. It also underlines that more focus is given to objective indicators rather than subjective indicators. Among stakeholders, residents are most engaged while tourists are least engaged. Governance is indispensable to implement SDG
E. Rahmadian et al; 2022	A systematic literature review on the use of big data for sustainable tourism	Current Issues in Tourism	Sustainable tourism; big data; systematic literature review; Internet of Things; artificial intelligence	Big data can support decision-making in tourism. Big data application in sustainable tourism to measure sustainability	Tourism has responsibilities not only to itself as an industry but also to clients, stakeholders, staff, governance, people, other nations, and future generations (Libburd& Edwards, 2018) . A strong personal sense of responsibility for the environment can play a crucial role in advancing sustainable tourism (Han et al., 2018) .
Santos et al; 2021	Tourism Towards Sustainability and Innovation: A Systematic Literature Review	Sustainability	tourism sustainability; tourism innovation; systematic literature review	analyze the progress of tourism towards sustainability and innovation. better understanding and linkages between sustainability and innovation process as applied to tourism. new insights and challenges for the strengthening of sustainable and innovative tourism	The result highlights that the indicators of sustainability and innovation need further examination within the realm of tourism. Nonetheless, more specific process indicators are required for continuous development of the front-end of innovation and sustainable tourism practices.
Prihanti et al; 2020	The Social Dimensions' Aspects of Sustainable Tourism	Digital Press Social Sciences and Humanities	social dimensions, social sustainability, sustainable	sustainability issues (economic, environmental, and social)	The various elements tied to fundamental needs, quality of life, effective governance,

	Development Analysis: A Systematic Literature Review		heritage tourism, sustainable tourism	should be taken into consideration while developing heritage tourism while exploring key aspects of sustainable tourism development social dimensions as it's the least focused.	and community involvement are crucial for attaining an ideal social state in sustainable tourism development, encompassing factors like destination conditions, tourism types, host community culture, and regulatory frameworks.
Sarfaraz et al; 2015	Sustainable tourism: a comprehensive literature review on frameworks and applications	Economic Research	sustainable development; tourism; sustainable tourism; literature review	to synthesize sustainable tourism research through objectives and conclusion	Sorting of research papers related to sustainable tourism for future use of researchers on the basis of fields of study like sustainable tourism, market research, policy making, infrastructure, planning, rural tourism, environment management, climate change etc.
Yang et al; 2023	Progress in Sustainable Tourism Research: An Analysis of the Comprehensive Literature and Future Research Directions	Sustainability – MDPI	sustainable tourism; literature review; critical analysis and gaps; tourism research; tourism management	To undergo a comprehensive literature review to evaluate the current research level and to provide guidelines for future research on sustainable tourism	Effective decision-making in tourism should prioritize preserving the environment and culture, ensuring long-term economic benefits, and integrating holistic sustainable tourism plans that harmonize different dimensions, foster brand loyalty, encourage return visits, and consider environmental, economic, sociocultural, and institutional aspects (Hussain et. al; 2015).
Cottrell et. al; 2007	Resident Perceptions of Sustainable Tourism in Chongdugou, China	Society and Natural Resources, 20:511–525, Taylor & Francis Group	Chongdugou, prism of sustainability, sustainable tourism indicators, tourist resident satisfaction	To study how the level of employment in the tourism industry would influence residents' beliefs about	Resident perceptions of tourism development were primarily influenced by the distance of the sub-village from the village entrance, although

				the sustainability of agritourism from an institutional, the economic, environmental, and sociocultural perspective	employment in the tourism industry contributed to the interaction effect
S.P. Cottrell et al (2013)	Resident satisfaction with sustainable tourism: the case of Frankenwald Nature Park, Germany	Tourism Management Perspectives	Dimensions of sustainability Frankenwald Nature Park Indicators Prism of sustainability Resident satisfaction Sustainable tourism	To study resident satisfaction concerning 4 sustainability dimensions (i.e., environmental, economic, socio-cultural, and institutional)	all four sustainability dimensions have a significant impact on sustainability. Strongest economic followed by institutional, social, and environmental. Therefore all 4 dimensions should be considered for planning and monitoring of sustainable tourism development.
Scheyvens, R (2011)	The challenge of sustainable tourism development in the Maldives: Understanding the social and political dimensions of sustainability	Asia Pacific Viewpoint	Maldives, politics, social sustainability, sustainable development, tourism	To focus on socio-political issues in achieving sustainable tourism in Maldives. This paper has argued that social and political issues deserve greater attention in discussions over the prospects for achieving sustainable development of tourism.	Although strong industry-government relationships are crucial for ongoing tourism sector growth, it is essential to prevent the dominance of the interests of a few powerful entities over the majority of the country's population, who could also be impacted, either directly or indirectly, by tourism development not just to provide low-level jobs to a disempowered labour force. Sustainable tourism research must acknowledge that true sustainability goes beyond carbon reduction and isolated resort development, emphasizing the importance of inclusive decision-making and equitable distribution of

					tourism benefits.
Janusz, G. K (2013)	Towards Sustainable Tourism Framework, Activities and Dimensions	Procedia economics and finance. Elsevier	tourism; sustainable development; sustainable tourism; eco-tourism.	To describe sustainable tourism	Sustainable tourism does not only mean an environmental protection but also includes the living conditions of the closest environment together with the social and economic dimensions of the tourist area.
Clarke, J (1997)	A Framework of Approaches to Sustainable Tourism	Journal of Sustainable Tourism	sustainable tourism approaches,	to give insights regarding the development of sustainable tourism	The framework is composed of four positions: 1. ST as small scale, limited tourism 2. Sustainable tourism has the potential to develop into mass tourism if not properly managed as it utilizes the infrastructure, transport, and reservations system of mass tourism. 3.need to change mass tourism to sustainable forms to address global issues.4. understanding of sustainable tourism as a goal that all tourism, regardless of scale, must strive to achieve.

Understanding sustainable tourism from SLR papers

The UNWTO declared 2017 as the Year of Sustainable Tourism, recognizing its potential to reduce waste and pollution, promote renewable energy, and mitigate climate change. Sustainable tourism aims to balance economic, environmental, and social needs while benefiting local communities and preserving cultural heritage (Streimikiene et. al;2020; Liu et al; 2013; Sarfaraz et al; 2015; (World Commission on Environment and Development, 1987). It encompasses job creation, innovation, and improving the well-being of host communities. The core objective is fair benefit allocation, emphasizing environmental protection, social cohesion, and economic prosperity. Sustainable tourism seeks to manage resources for current and future needs, safeguarding cultural integrity and biodiversity (UNWTO, 1998, p. 21). Challenges include equitable benefit sharing and overcoming elite dominance in the tourism sector, requiring broad participation in decision-making (Scheyvens, R; 2011). Ultimately, sustainable tourism strives to avoid environmental harm, enhance destination quality of life, and generate positive economic returns through the management of economic, social-cultural, and environmental aspects(Loaiza et al., 2019; Santos et. al., 2021). Sustainability is not a static destination; instead, it is an ongoing process of negotiation within and between societies (Knox-Hayes et. al; 2020).

Systematic Literature Review of Sustainable Tourism forms from the papers

Sustainable tourism forms discussed in various papers	
Green Tourism	To address environmental issues due to tourism, green tourism services account for attracting tourists who are environmentally responsible (Lu et al., (2009).
Social Tourism	social tourism contributes to sustainable development by fostering social cohesion, social sensitivity, and employment, reducing inequalities, and promoting cultural exchange and understanding among diverse communities (Kakoudakis et al., 2017).Social sensitivity along with economic welfare is the core of sustainable development.
Eco-Tourism	Eco-tourism focuses on responsible travel to natural areas that conserve the environment, sustain the well-being of local communities, and provide educational experiences for visitors. It emphasizes principles such as minimizing environmental impact, supporting conservation efforts, and empowering local communities through sustainable tourism initiatives (Walter & Reimer; 2012; Sarfaraz et al; 2015.
Cultural Tourism	Cultural tourism involves experiencing and appreciating the cultural heritage, traditions, and customs of a destination. It encompasses activities such as visiting historical sites, attending cultural events, and participating in local rituals and traditions(R.W. Carter et al; 2015; Yang et al; 2023).
Rural Tourism	Rural tourism contributes to sustainable development by diversifying rural economies, generating income for local communities, and preserving traditional lifestyles and cultural heritage (Sarfaraz et al; 2015;Yang et al; 2023).
Infrastructure/institutional role in sustainable tourism	Infrastructure development and institutional support play a crucial role in promoting sustainable tourism. Investments in sustainable infrastructure, such as renewable energy systems, waste management facilities, and eco-friendly transportation networks, can reduce environmental impact and enhance visitor experiences (Yang et al; 2023; Cottrell et. al; 2023).
Agri-tourism	Agri-tourism involves visiting agricultural areas and participating in farm-related activities such as harvesting, animal husbandry, and culinary experiences (Cottrell et. al; 2023).
Economic sustainability	Economic sustainability in tourism involves balancing economic growth with social equity and environmental conservation. It focuses on maximizing economic benefits for local communities while minimizing negative impacts on the environment and culture(Cottrell et. al; 2023; Yang et al; 2023).
Political tourism	Political tourism involves traveling to destinations to experience political history, institutions, and events.Political tourism can contribute to sustainable tourism by promoting civic engagement, democratic values, and human rights awareness(Scheyvens, R; 2011).
Alternative tourism	Alternative tourism encompasses a wide range of niche travel experiences that deviate from traditional mass tourism practices. Alternative tourism contributes to sustainable tourism by offering low-impact travel options, supporting local communities, and promoting authentic cultural experiences(Clarke, J;1997).

These diverse concepts, including Green Tourism, Social Tourism, Eco-Tourism, Cultural Tourism, Rural Tourism, Infrastructure/Institutional Role in Sustainable Tourism, Agri-Tourism, Economic Sustainability, Political Tourism, and Alternative Tourism, are all integral components of sustainable tourism. They collectively contribute to the overarching goal of promoting environmentally responsible, socially inclusive, culturally enriching, and economically viable tourism practices. From minimizing environmental impact and preserving cultural heritage to fostering community empowerment and supporting rural economies, each concept plays a unique role in advancing sustainable tourism objectives. Through these initiatives, tourism can thrive in a manner that balances economic growth with social equity and environmental conservation, ensuring that destinations remain vibrant and resilient for both present and future generations.

How To Measure Sustainability from SLR Papers

The UNWTO (2014) identified seven indicators to measure sustainability in tourism: quality of life and water, waste sorting, job creation, business vitality, energy saving, and community spirit (Streimikiene et. al;2020). Effective governance, including suitable institutions and decision-making processes, is crucial for sustainable tourism (Stafford-Smith et al., 2017; Niavis et al., 2019). Local community involvement in planning and decision-making fosters ownership of sustainable development strategies. Sustainability indicators encompass both subjective factors like attitudes and perceptions, as well as objective measures of economic, social, and environmental conditions. Key concepts to understand sustainability include problems and solutions, individual behaviour, environmental ecosystems, technologies, social fairness, food and nutrition,

mobility, education, mindfulness, and sustainable development(Santos et al; 2021). Core indicators of sustainable tourism include employment generation, financial viability, living standards improvement, water quality preservation, waste management, energy conservation, and community cohesion(Agyeiwaah, 2017).

Challenges in the implementation of sustainability:

Challenges in implementing sustainability in tourism include inadequate government policies offering limited practical guidance, insufficient consideration of socio-economic and cultural contexts, and limited awareness and involvement of local communities (Carter et al; 2015). The dominance of intermediaries and wealthy elites in tourism businesses leads to economic leakage, while skepticism among local communities about the benefits of tourism persists(Chheang, 2010b). Traditional occupations are preferred over tourism due to low awareness and opportunities, and there's a risk of displacement and marginalization of locals for tourism development(Keating, 2012). Lack of adequate training and technical expertise, foreign investment prioritizing rapid development at the expense of the environment and society, and poor infrastructure hinder sustainable tourism efforts. Additionally, defining clear objective and subjective indicators for measuring sustainability, insufficient focus on governance dimensions, and lack of research on subjective indicators pose challenges(Meuleman, 2019). Issues like carrying capacity, environmental insurgencies, and deficiencies in green logistics and public utilities also impede sustainable tourism(Perkumiene et. al, 2020). Political influences, as seen in the case of the Maldives, further complicate matters, with governments prioritizing tourism growth over sustainability, often at the expense of equitable development. Addressing unsustainable practices of tour operators and achieving more sustainable and equitable development requires comprehensive government initiatives, regulations, training, and investments in sustainable practices while balancing revenue interests with community needs remains a significant challenge (Dahiya, 2018; Yang et al; 2023).

Solutions For Sustainable Tourism Development

To cultivate sustainable tourism, a comprehensive strategy encompassing diverse initiatives is imperative. Innovation, technological development, addressing local people's needs by communicating it to the tourists through travel companies, and commitment to strengthening sustainable tourism application in needed (Streimikiene et. al;2020; Garay et al; 2017). Community engagement and understanding stakeholders' values are crucial for sustainable tourism implementation, especially in supporting locally-based products to empower economically disadvantaged communities. The implementation of sustainable tourism certification fosters crucial dialogues, shapes policy-making, and increases business awareness of local community needs, inspiring attitude shifts across sectors and generations (Bowman, 2011;Sarfraz et al; 2015). Emerging destinations must prioritize clear guidance and comprehensive sustainable strategies to safeguard local assets and values, with international aid focusing on small-scale investments for local economic empowerment through tourism.

Prioritizing energy conservation through the adoption of efficient technologies like LED lighting and motion sensors, alongside measures to minimize water usage through the installation of low-flow faucets and toilets. Waste reduction strategies, such as implementing segregation systems and reducing single-use plastics, are crucial for effective waste management. Collaborating with local authorities to establish sustainable carrying capacities for tourist destinations and promoting off-peak travel periods helps alleviate the strain of over-tourism, safeguarding environmental and cultural assets (Cottrell & Raadik, 2008).Eco-innovations reducing carbon emissions are pivotal for sustainable tourism (Buijendijk et al., 2018). Smart innovation is fundamental in this regard (Foronda-Robles et al., 2020), and blending traditional and contemporary elements enhances small-scale tourism sustainability. Prioritizing greener solutions and fostering public-private partnerships are essential for sustainable tourism growth (Herrero et al., 2019; Santos et al; 2021).

Active engagement with local communities and institutions is pivotal, involving them in decision-making processes and supporting initiatives that enhance community well-being and cultural preservation(Carter et al; 2015; Cristofaro, 2020; Yang et al; 2023). Additionally, empowering staff through comprehensive training on sustainable practices enables them to advocate for environmental initiatives within their establishments. Continuous monitoring and improvement efforts, which involve regular assessment of key performance indicators and solicitation of feedback from guests, staff, and stakeholders ensure that sustainability goals are consistently pursued and refined over time (Timothy & Tosun, 2003;Rasoolimanesh et.al;2023;Koch et. al, 2020).

Timmermans (2019) emphasized that the SDGs are interlinked, highlighting the need for coordinated, integrated policies and institutional frameworks for effective implementation. By embracing these multifaceted solutions, we can not only contribute to environmental conservation but also bolster local economies and uphold cultural heritage. Such initiatives align with the overarching objectives of sustainable tourism, which seek to balance economic prosperity with environmental integrity and social equity. Through collaborative efforts and a commitment to continuous improvement, the tourism industry can move closer to achieving a harmonious balance between visitor experiences and the preservation of natural and cultural resources for future generations.

Implications for Sustainable Tourism Research

Research in sustainable tourism can have several implications, both for academia and for industry practitioners, policymakers, and communities. Sustainable tourism research plays a crucial role in advancing the understanding of sustainability issues within the tourism sector and driving positive change toward a more responsible and inclusive tourism industry.

1. Informing Policy and Planning: Sustainable tourism research provides evidence-based insights that can inform the development of policies, regulations, and planning frameworks at local, national, and international levels. Policymakers can use research findings to establish guidelines for sustainable tourism development, promote responsible tourism practices, and mitigate negative environmental and social impacts.

2. Guiding Industry Practices: Research findings in sustainable tourism can guide industry stakeholders, including tour operators, accommodation providers, and attractions, in adopting sustainable business practices. By understanding the environmental, social, and economic implications of their operations, businesses can implement strategies to minimize their ecological footprint, enhance community engagement, and improve destination stewardship.

3. Enhancing Destination Management: Sustainable tourism research contributes to effective destination management by identifying best practices, benchmarks, and indicators for measuring sustainability performance. Destination managers can use research insights to develop destination management plans, prioritize investment in sustainable infrastructure, and foster collaboration among stakeholders to achieve long-term sustainability goals.

4. Empowering Communities: Sustainable tourism research empowers local communities by highlighting their role in tourism development, promoting community-based tourism initiatives, and advocating for equitable distribution of tourism benefits. Communities can use research findings to advocate for their rights, negotiate fair partnerships with tourism businesses, and participate in decision-making processes that affect their livelihoods and well-being.

5. Raising Awareness and Education: Sustainable tourism research contributes to raising awareness among tourists, residents, and other stakeholders about the importance of sustainable tourism practices. Through education and outreach initiatives, research findings can inspire behaviour change, promote responsible travel behaviour, and foster a culture of sustainability within destination communities and among visitors.

6. Supporting Conservation and Biodiversity: Research in sustainable tourism can support conservation efforts and biodiversity protection by identifying areas of ecological importance, assessing the impacts of tourism activities on natural habitats, and developing strategies for sustainable wildlife viewing and habitat preservation. Conservation organizations and protected area managers can use research insights to guide their conservation initiatives and engage with the tourism sector to promote responsible nature-based tourism.

7. Contributing to Sustainable Development Goals: Sustainable tourism research aligns with the United Nations Sustainable Development Goals (SDGs) by addressing key challenges related to poverty alleviation, environmental conservation, and inclusive economic growth. Research findings can contribute to achieving SDGs such as Goal 8 (Decent Work and Economic Growth), Goal 12 (Responsible Consumption and Production), Goal 13 (Climate Action), Goal 14 (Life Below Water), and Goal 15 (Life on Land).

Conclusion

After conducting a systematic literature review (SLR) and bibliometric analysis on sustainable tourism, several key conclusions emerge. Firstly, there is a growing recognition of the importance of sustainability in the tourism industry, with a significant body of research dedicated to understanding its various dimensions and implications. Scholars have explored diverse topics such as governance and policy frameworks, community engagement, sustainable practices and innovations, destination management, and the socio-economic and environmental impacts of tourism.

The studies reviewed highlight the multifaceted nature of sustainability challenges and the need for interdisciplinary collaboration to address them effectively. Sustainable tourism requires a holistic approach that considers economic, environmental, and social dimensions, as well as the involvement of diverse stakeholders including governments, businesses, communities, and NGOs.

The themes identified in the systematic literature review (SLR) were corroborated and further explored through bibliometric analysis, leveraging keywords and other bibliographic data. Firstly, the SLR has identified overarching themes such as governance frameworks, community engagement, sustainable practices, eco-tourism, rural tourism, stakeholders, and the socio-economic and environmental impacts of tourism. These themes have been validated and expanded upon using bibliometric analysis by examining the keywordsco-occurrence analysis and concepts across the literature.

For example, keywords related to governance may include terms such as "policy," "regulation," "stakeholders," and "governance mechanisms." By analyzing the occurrence and co-occurrence of these keywords in the bibliographic data, researchers can gain insights into the prevalence and evolution of

governance frameworks in sustainable tourism research. Similarly, keywords related to community engagement may include terms such as "participation," "empowerment," "local communities," and "stakeholder involvement." Analyzing the frequency and distribution of these keywords can shed light on the extent to which community engagement is emphasized in the literature and how it has evolved.

Furthermore, while there have been significant advancements in understanding and promoting sustainable tourism, several gaps and challenges remain. These include the need for clearer definitions and objective indicators for measuring sustainability, a greater focus on governance dimensions, and more research on subjective indicators and community perspectives. Additionally, issues such as carrying capacity, environmental impacts, and socio-economic disparities continue to pose challenges to achieving sustainable tourism development.

In conclusion, the findings from the SLR and bibliometric analysis underscore the importance of ongoing research and collaboration in advancing sustainable tourism practices. By addressing the identified gaps and challenges and building upon existing knowledge, stakeholders can work towards ensuring that tourism contributes positively to economic development, environmental conservation, and social well-being, both now and in the future.

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81. Appendices:
82. TITLE-ABS-KEY ("sustainable tourism") AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (EXACTKEYWORD , "sustainable tourism")) AND (LIMIT-TO (LANGUAGE , "english"))