

SUSTAINABLE TOURISM CONSUMER BEHAVIOR: A SCIENCE MAPPING ANALYSIS OF TRENDS AND FUTURE DIRECTIONS

Reshma Sucheran

ORCID: <https://orcid.org/0000-0002-5245-3939>

E-mail: reshma@dut.ac.za

Durban University of Technology, South Africa

Abstract

This paper investigates the factors influencing consumer behaviour in sustainable tourism through a bibliometric analysis of 448 articles from the Web of Science database. The research aims to identify trends, influential authors, countries, affiliations, research themes, and gaps in the literature, providing insights for future research and sustainable tourism practices. The study is grounded in consumer behaviour and sustainability theories, focusing on the psychological, social, and economic factors that drive tourists' decisions to adopt eco-friendly practices. A bibliometric analysis was conducted utilising the R-Bibliometrix package and the Biblioshiny web application. Co-citation, co-occurrence, and collaboration network analyses were employed to examine publication trends, research themes, and collaborations. The study includes articles published between 1999 and 2023, mapping the evolution of consumer behaviour research in sustainable tourism. The analysis reveals substantial growth in research on sustainable tourism consumer behaviour, particularly from 2010 onwards. Key themes identified include the influence of convenience, cost, personal experiences, and economic trade-offs on tourists' eco-friendly choices. Social norms also play a significant role in encouraging sustainable behaviour. The findings emphasise the need for more comprehensive research on the supply side of sustainable tourism, the effectiveness of policies, and longitudinal studies to track changes in consumer behaviour over time. The insights gained from this analysis can inform future studies and aid in developing strategies for promoting environmentally responsible tourism behaviours.

Keywords: Sustainable tourism, Consumer behaviour, Eco-friendly practices, Bibliometric analysis, Environmental behavior.

INTRODUCTION

The importance of encouraging environmentally responsible behaviour amongst travellers is growing as the world grapples with significant sustainability challenges. While tourism contributes to economic development and cultural exchange, it also presents substantial environmental risks, making the promotion of sustainable tourist practices essential (Wang, Jeronen & Chen 2023; Ibnou-Laaroussi, Rjoub & Wong 2020). Understanding the factors influencing tourists' eco-friendly behaviour as tourism expands globally and locally is crucial for addressing global issues such as climate change (Bergin-Seers & Mair 2009). Scholars have examined consumer conduct in this realm, investigating the factors influencing tourists' choices and their willingness to adopt more sustainable travel alternatives (Doran & Larsen 2015; Han 2021). The decision-making process of tourists, often influenced by convenience, cost, and personal experiences, presents challenges in promoting sustainable behaviours. Research on environmental psychology and consumer behaviour theories has identified social and individual norms and the readiness to make economic sacrifices as significant determinants of tourists' choices (Doran & Larsen 2015; Han 2021). Hence, tourists' willingness to make financial compromises for more sustainable options plays a vital role in their eco-friendly consumption patterns within the tourism sector (Ibnou-Laaroussi et al. 2020). Highlighting the specific advantages of sustainable tourism, such as improved personal well-being and the value of environmental stewardship, can also encourage tourists to embrace more responsible environmental practices (Ibnou-Laaroussi et al. 2020).

The growing importance of sustainable consumer behavior in tourism research reflects its critical role in fostering environmentally conscious practices and ensuring long-term sustainability (Alonso-Muñoz, Torrejón-Ramos, Medina-Salgado & González-Sánchez 2023; Han 2021). This study systematically reviews 448 articles from the Web of Science database to analyze publication trends, leading authors, journals, research themes, gaps, and future directions. Unlike prior bibliometric analyses, which focused on specific aspects of sustainable tourism (Xu, Ao & Liu 2023) or broader sustainability studies up to 2015 (Ruhanen, Weiler, Moyle & McLennan 2015), this paper centers on sustainable tourism consumer behavior. By mapping research trends, influential studies, and emerging themes, it identifies the intellectual structure of this field, key contributors, and geographical research hubs. The findings will uncover knowledge gaps and offer a foundation for future research, advancing understanding in this interdisciplinary domain.

METHODOLOGY

The research methodology employed in this study is a multi-step process. Initially, a search was conducted on the Web of Science (WoS) database using keywords such as 'SUSTAINABLE CONSUMER BEHAVIOUR,' 'SUSTAINABLE BEHAVIOUR,' 'SUSTAINABLE PRACTICES,' 'GREEN CONSUMER,' 'ENVIRONMENTALLY FRIENDLY BEHAVIOUR,' and 'RESPONSIBLE BEHAVIOUR,' combined with terms like 'TOURIST,' 'GUEST,' 'TRAVELER,' and 'ECOTOURIST.' This search yielded 1,851 documents. Only articles published in journals were chosen for this paper, as they are regarded as "certified knowledge" and are considered credible sources that have undergone a critical review by fellow researchers (Callon, Courtial & Penan 1993). A total of 1452 articles were obtained using this refinement. A total of 169 articles from the non-organizational domain, 22 non-English studies, and 813 irrelevant articles with missing search terms were excluded. Ultimately, 448 records were selected for analysis in this paper. The reduction in the number of articles from the original dataset was significant and is a common occurrence in bibliometric analysis, as seen in various other studies (Figueroa-Rodríguez, Álvarez-Ávila, Castillo, Rindermann & Figueroa-Sandoval 2019; Galvagno & Giaccone 2019; Gümüş, Bellibas, Gümüş & Hallinger 2019).

The articles were analysed using the R-Bibliometrix package and the Biblioshiny web application. Bibliometric analysis serves as a valuable method for examining research patterns and trends. Two leading platforms, Bibliometrix-R and Biblioshiny, provide comprehensive solutions for conducting detailed bibliometric analyses. Bibliometrix-R, developed in the R programming language, offers a robust and flexible environment for bibliometric studies (Eck & Waltman 2021). It includes various analytical tools such as co-occurrence analysis, bibliographic coupling, and co-citation analysis, enabling researchers to uncover complex relationships and insights within the academic landscape. In addition, Biblioshiny serves as a user-friendly web interface for Bibliometrix-R, allowing researchers to access intuitive visualisations and efficient data processing capabilities (Prakash & Dwivedi 2022; Donthu, Kumar, Mukherjee, Pandey &

Lim 2021; Moral-Muñoz, Liu, Santisteban-Espejo & Cobo 2020). Bibliometric analysis can fulfil both descriptive and evaluative purposes. Descriptive analyses reveal publication patterns, research trends, and productivity in a specific field, while evaluative methods, like citation analysis, assess the impact and influence of individual researchers, institutions, or publications (Oliveira, Silva, Juliana, Barbosa & Nunhes 2019; Păduraru, Moroşanu, Păduraru & Cărauşu 2022; McBurney & Novák 2003; Li & Li 2022). This study explores publication trends by identifying prominent journals, authors, and institutions while examining co-citation, co-occurrence, and collaboration networks. Additionally, the research involved analysing keywords and abstracts of articles to pinpoint the main research themes.

FINDINGS AND DISCUSSION

Table 1

Main Information

Description	Results
Timespan	1999:2024
Documents	448
Annual Growth Rate %	12.26
Keywords Plus (ID)	933
Author's Keywords (DE)	1602
Authors	1145
Authors of single-authored docs	27
Single-authored docs	27
Co-Authors per Doc	3.28
International co-authorships %	37.5

The dataset for this study on sustainable tourism consumer behaviour spans 1999 to 2024, with an annual growth rate of 12.26%, reflecting increasing scholarly interest in sustainability issues within the tourism sector. It includes 933 Keywords Plus (ID) and 1,602 authors' Keywords (DE), showcasing the field's diverse scope, covering topics like sustainable tourism practices, consumer behaviour theories, environmental concerns, and destination management strategies. Contributions come from 1,145 authors, with 27 single-authored papers and an average of 3.28 co-authors per paper, indicating a collaborative research approach. Moreover, 37.5% of documents involve international co-authorship, promoting cross-cultural expertise to address global sustainability challenges. All 448 records are peer-reviewed journal articles, ensuring adherence to high academic standards.

The citation report on research articles on sustainable tourism consumer behaviour, presented in Figure 1, demonstrates a clear and evolving trend from 1999 to 2023. In the early period, from 1999 to 2006, there were very few publications, with some years having no publications at all. Correspondingly, citations were minimal, with occasional spikes, such as in 2003 and 2006, which recorded 2 and 3 citations, respectively. This period reflects the emerging research stage in this field of study, with limited academic interest and output. From 2007 to 2013, the discipline underwent an initial development phase. The number of publications increased gradually, with five publications in 2008, and by 2013, the annual number of publications had grown to nine. Citations also increased substantially during this period, starting with only one citation in 2007 and reaching 131 by 2013.

The period from 2014 to 2020 reflects a rapid expansion in research on sustainable tourism consumer behaviour. The number of publications increased significantly, peaking at 45 in 2020. For instance, publications almost doubled from nine in 2013 to 16 in 2014. Correspondingly, citations increased substantially, from 241 in 2014 to 1826 in 2020. This time frame indicates a considerable expansion in research output and its impact as the academic community conducted and cited more studies.

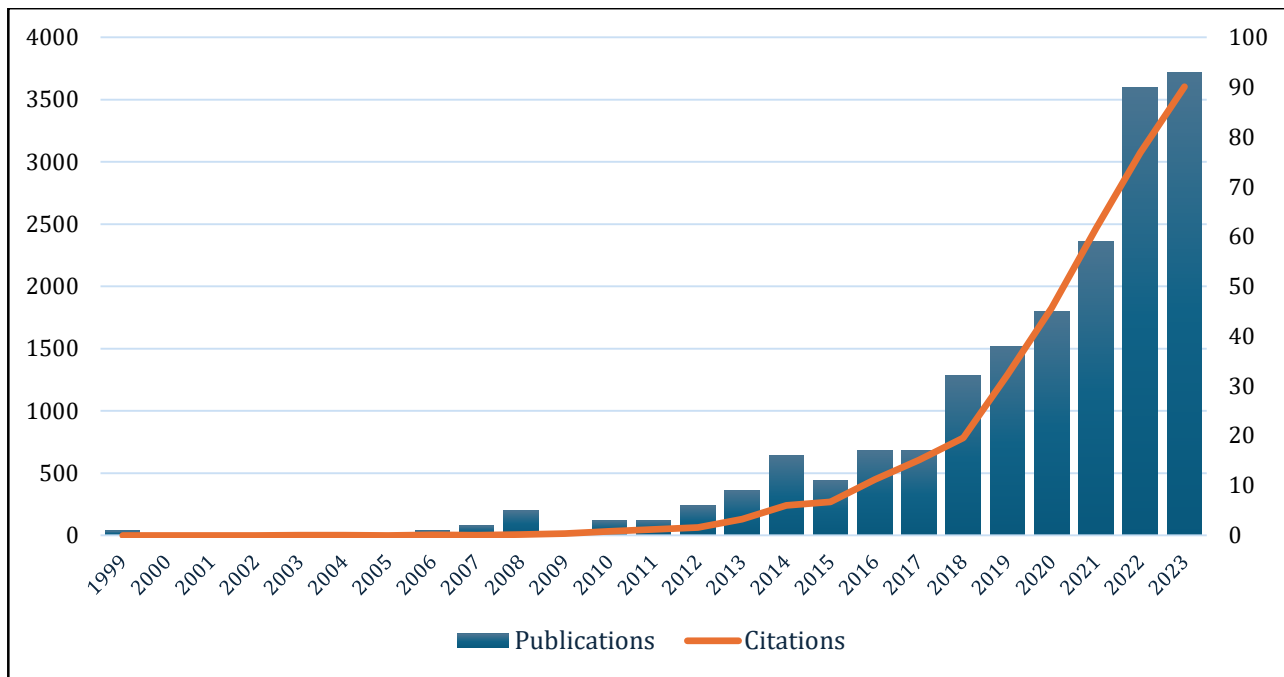


Figure 1. Citation Report

In more recent years, from 2021 to 2023, the upward trend in sustainable tourism consumer behaviour studies has persisted. The number of publications in this field reached 93 in 2023, and citations surged, with the highest recorded number in 2023 at 3603.

The findings show that research on sustainable tourism consumer behavior is becoming more important and influential. The rise in studies and citations highlights the growing need to understand how consumers think and act regarding sustainability in tourism.

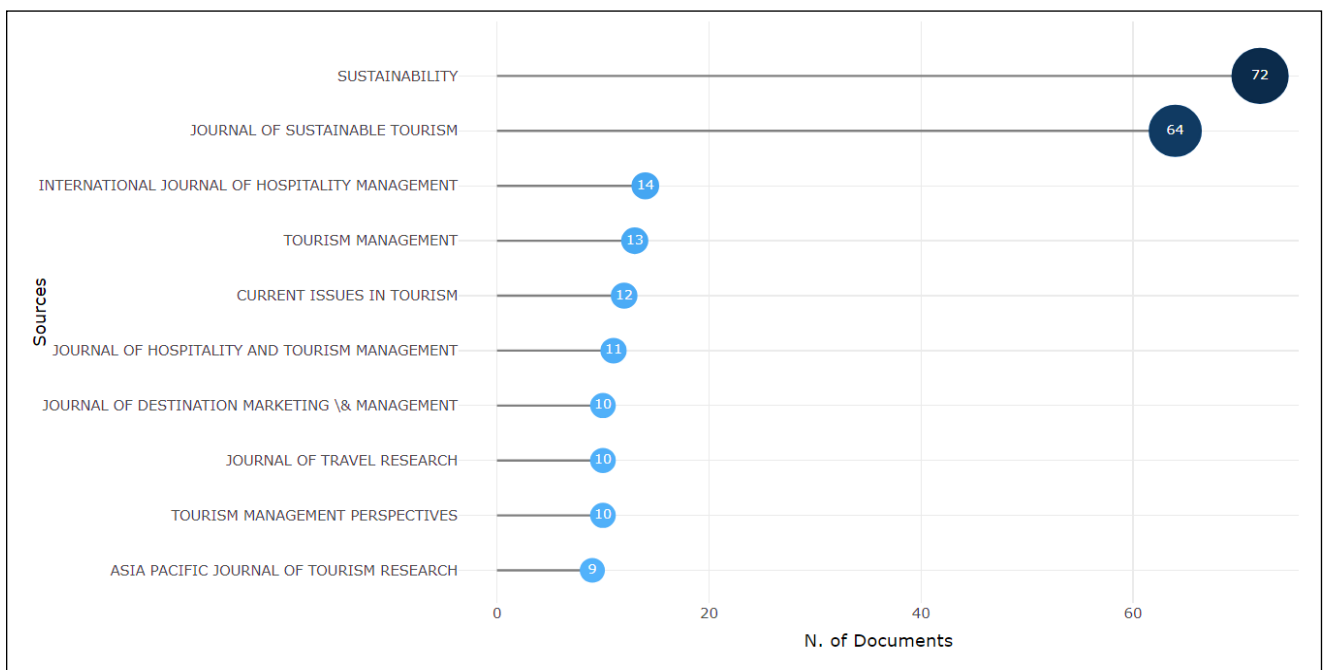


Figure 2. Most Relevant Sources

This creates opportunities for researchers to explore new trends, such as how technology and cultural differences affect sustainable behavior. For policymakers and businesses, it shows the importance of adopting sustainable practices to meet the increasing demand from consumers.

Figure 2 presents the data on the top ten sustainable consumer behaviour research sources. The journal *Sustainability* ranks highest among the sources, boasting 72 articles that make it the most productive contributor in the field. The journal's emphasis on interdisciplinary research, incorporating environmental, economic, and social aspects of sustainability, aligns well with the complex nature of sustainable tourism consumer behaviour. The *Journal of Sustainable Tourism* contains 64 articles and is a dedicated forum for research explicitly targeting sustainable tourism. This journal's large volume of articles reinforces its central role in shaping and advancing the discourse on sustainable tourism practices and consumer behaviour. The *International Journal of Hospitality Management and Tourism Management* significantly contributes to the field with 14 and 13 articles, and the focus of this journal is on management practices within the hospitality and tourism industries, suggesting a strong relationship between sustainable consumer behaviour and effective management strategies. *Current Issues in Tourism* and the *Journal of Hospitality and Tourism Management* each contribute 12 and 11 articles, respectively. These journals focus on contemporary challenges and management issues within tourism and hospitality, reflecting a sustained interest in how current trends impact sustainable consumer behaviour. Journals such as the *Journal of Destination Marketing & Management*, the *Journal of Travel Research*, and *Tourism Management Perspectives*, each featuring ten articles, highlight the crucial role of destination marketing and management in shaping sustainable consumer behaviour. They stress the importance of developing destination-specific strategies and researching travel behaviour to encourage sustainable practices among tourists. The *Asia Pacific Journal of Tourism Research*, with nine articles, emphasises the value of regional studies and the necessity of considering geographical and cultural differences to fully understand the diverse contexts and factors that influence sustainable tourism behaviour.

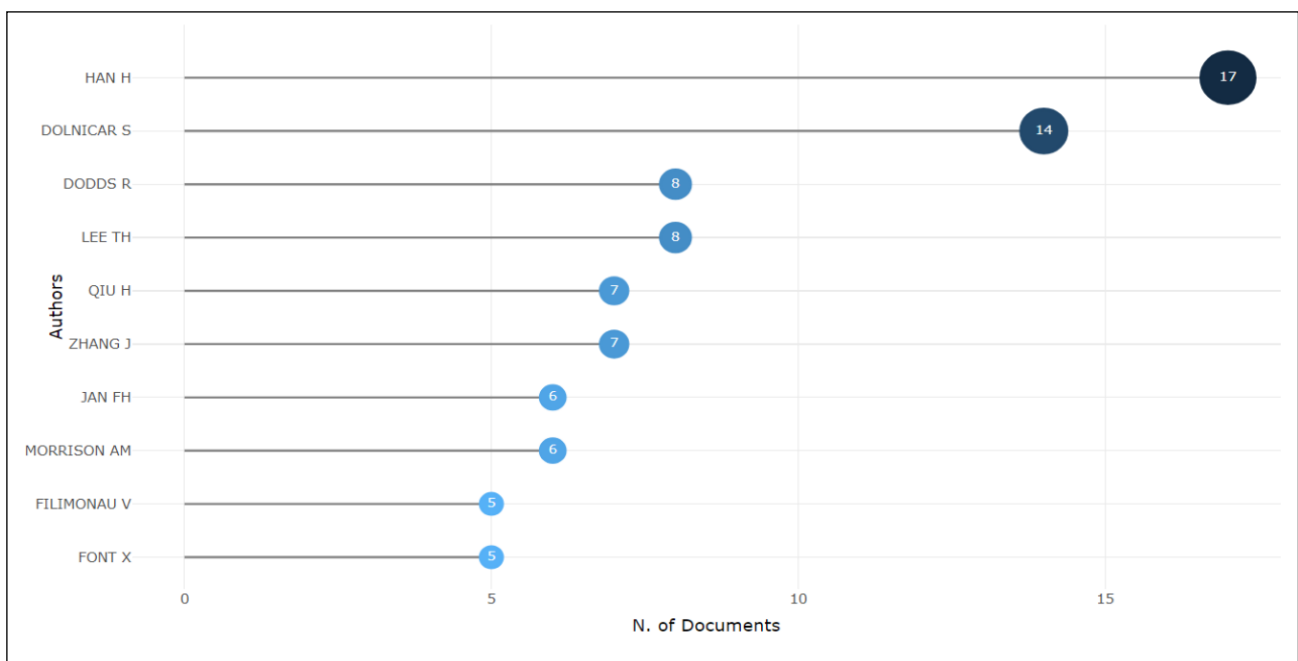


Figure 3. Most Relevant Authors

Han H is recognised as a leading researcher in sustainable tourism consumer behaviour, with 17 articles that significantly advance knowledge in this field. Following closely is Dolnicar S, who has authored 14 papers on market segmentation and sustainable tourism, illustrating how various market segments can effectively engage in sustainable practices. Additionally, Dodds and Lee have each contributed eight articles; Dodds focuses on policy and governance in sustainable tourism, while Lee investigates the psychological and social factors influencing sustainable consumer behaviour. Together, they provide a perspective on the

challenges and drivers of sustainability in tourism. Furthermore, Qiu H and Zhang J, each with seven articles, examine tourism's economic and environmental impacts, highlighting the intricate effects of tourism activities on sustainability. With six articles each, Jan FH and Morrison AM study consumer behaviour and marketing in tourism, stressing the importance of strategic marketing and management in reaching sustainability objectives. Additionally, Filimonau V and Font X, with five articles each, explore the environmental impacts and sustainability of tourism operations, with Filimonau focusing on reducing the ecological footprint of tourism businesses and Font addressing sustainable tourism certification and corporate social responsibility.

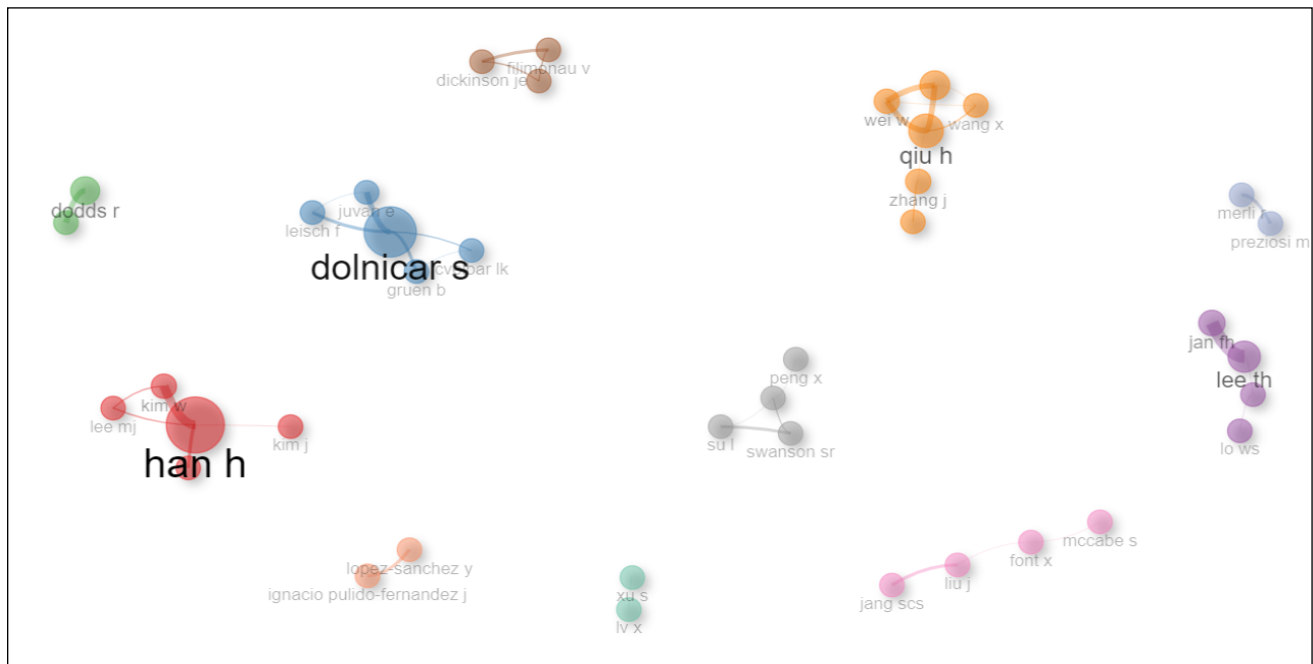


Figure 4. Collaboration Network Authors

Figure 4 presents the data on the network of authors involved in sustainable tourism consumer behaviour research. Han H and Dolnicar S emerge as key authors, each possessing high betweenness centrality (5 and 4, respectively) and high closeness centrality (0.25), indicating their roles as central connectors within the network. Their PageRank values (both near 0.052) further emphasise their substantial influence. While authors such as Kim W, Lee MJ, Juvan E, Cvelbar LK, Gruen B, and Leisch F are moderately central with closeness centralities around 0.1667 and varying PageRank values, they do not function as primary intermediaries, suggesting that they are well-connected within their respective clusters but less critical as bridges. Chi X and Kim J are more peripheral, with lower closeness centralities (0.1429) and PageRank values (0.0159 and 0.0079). The collaboration network comprises two primary clusters: Cluster 1, led by Han H, and Cluster 2, led by Dolnicar S, each exhibiting internal solid connections. This structure suggests a cohesive research community where Han H and Dolnicar S are central in linking subfields and researchers, facilitating knowledge exchange and collaboration.

The data in Figure 5 on sustainable tourism consumer behaviour reveals several affiliations with significant contributions. The University of Queensland is the most productive, with 38 articles credited to its researchers. This could be due to a robust research infrastructure, ample funding, and a strong focus on sustainable tourism within the university's academic community. Sejong University follows closely with 29 articles. Griffith University and the National Yunlin University of Science and Technology share 24 articles each. The University of Surrey and Tourism College Zhejiang have contributed 19 articles on sustainable tourism consumer behaviour. China's rapid economic growth and increasing emphasis on sustainability likely play a role in its emergence on the global research stage. Kyung Hee University, Dong-A University, Hong Kong Polytechnic University, and the City University of Macau follow with slightly lower article counts, indicating a dispersed network of research activity in sustainable tourism across Asia. Evaluating factors



The results reflect that leading universities such as the University of Queensland and S



The study analyses the collaborative network of institutions undertaking research in sustainable tourism consumer behaviour using metrics such as betweenness centrality and closeness centrality. This data is presented in Figure 6. The University of Queensland, with a betweenness centrality of 170.10 and a closeness centrality of 0.0175, is identified as a vital intermediary in the network, connecting various institutions and facilitating information exchange. Griffith University, with a betweenness centrality of 53 and a closeness centrality of 0.0125, is an essential node within the network, contributing significantly to disseminating knowledge in this academic field. In Cluster 1, institutions like the University of Putra Malaysia, National Kaohsiung University of Science and Technology, James Cook University, University of Primorska, and University of Wollongong exhibit zero betweenness centrality and closeness centrality values, suggesting they are part of the network but do not serve as primary connectors or hubs. Sejong University, in Cluster 2, has a betweenness centrality of 53 and a closeness centrality of 0.0112, indicative of collaboration and research exchange. In Cluster 2, Dong-A University and Jinan University have zero betweenness and lower closeness centrality values, indicating their peripheral roles.



Figure 7. WordCloud

Based on the frequency of terms related to sustainable tourism consumer behaviour, the word cloud in Figure 7 offers a snapshot of the key themes and concepts that drive research in this field. The term "sustainable tourism" emerges as the most frequent, appearing 66 times, reflecting the central focus of studies on ensuring tourism practices are environmentally, socially, and economically sustainable. "Sustainability" follows closely with 41 occurrences, indicating a broader emphasis on long-term viability and responsible stewardship in tourism development and consumer behaviour. This term confirms the interdisciplinary nature of sustainable tourism research, which integrates environmental, economic, and socio-cultural dimensions to foster balanced and inclusive tourism practices. The frequency of "tourism" appears 36 times, highlighting its foundational role as the subject of study, encompassing various aspects of travel, leisure, and hospitality industries. Understanding consumer behaviour within this context is crucial for devising strategies that promote sustainable practices and enhance visitor experiences. "Environmentally responsible behaviour" and its variations ("pro-environmental behaviour/behaviour") are also prominent, collectively appearing 70 times, highlighting the importance of consumer actions in minimising environmental impacts associated with tourism activities. Such studies often explore factors influencing tourists' decisions to engage in behaviours that reduce carbon footprints, conserve resources, and support local conservation efforts. "Behaviour" and related concepts such as "satisfaction" and "place attachment" bring to light the psychological and emotional dimensions of consumer behaviour in

The node "pro-environmental behaviour" shows significant roles in the network. With betweenness centralities of 16.37 and 26.99, closeness centralities around 0.0099, and PageRank of 0.0199 and 0.0248, these nodes are moderately central and influential and highlight the relevance of pro-environmental actions and behaviours within sustainable tourism, albeit not as central as sustainable tourism. The node "attitudes" shows moderate influence with a betweenness centrality of 3.83, closeness centrality of 0.0096, and PageRank of 0.0234. Despite its lower betweenness, indicating it is not a critical bridging concept, its moderate closeness and PageRank suggest that attitudes are reasonably well-connected and influential within the network. This reveals the significance of consumer attitudes in studying sustainable tourism behaviour. In contrast, the node "COVID-19" exhibits no betweenness centrality and low values in other metrics (closeness centrality of 0.0086 and PageRank of 0.0062), indicating its peripheral role. While COVID-19 might be relevant, it has not been integrated as deeply into the core discussions of sustainable tourism consumer behaviour. Similarly, nodes like "intentions," "segmentation," "sustainable consumption," and "value-belief-norm theory" also show low influence and no bridging role, as demonstrated by their zero betweenness centrality and low values in closeness and PageRank metrics. These nodes are on the peripheries of the network, suggesting they are not central themes but ancillary topics within the broader discourse.

Analysing the scientific output of articles on sustainable tourism consumer behaviour from different countries offers valuable insights into the global research landscape in this area. Figure 9 shows China is the leading country with 469 articles, followed by the United States with 152, indicating its significant role in the global dialogue on sustainable tourism consumer behaviour. Australia, with 117 articles, also plays a vital part in this field, likely due to its vast natural landscapes, robust tourism industry, and institutional support for sustainability initiatives. Furthermore, its geographical isolation and diverse ecosystems provide rich opportunities for studying sustainable tourism consumer behaviour in various contexts. South Korea, the UK, Spain, and Italy follow these countries, contributing to a broad yet significant interest in the topic worldwide. Moreover, Malaysia, India, and Portugal round out the top ten, reflecting the global nature of sustainable tourism research, with contributions from developed and developing nations. These findings reveal several important implications for the worldwide research landscape. First, the findings indicate a widespread international interest in sustainable tourism consumer behaviour, with diverse contributions enriching the knowledge base. This suggests sustainable tourism is a universal issue relevant across cultural and geographical contexts.

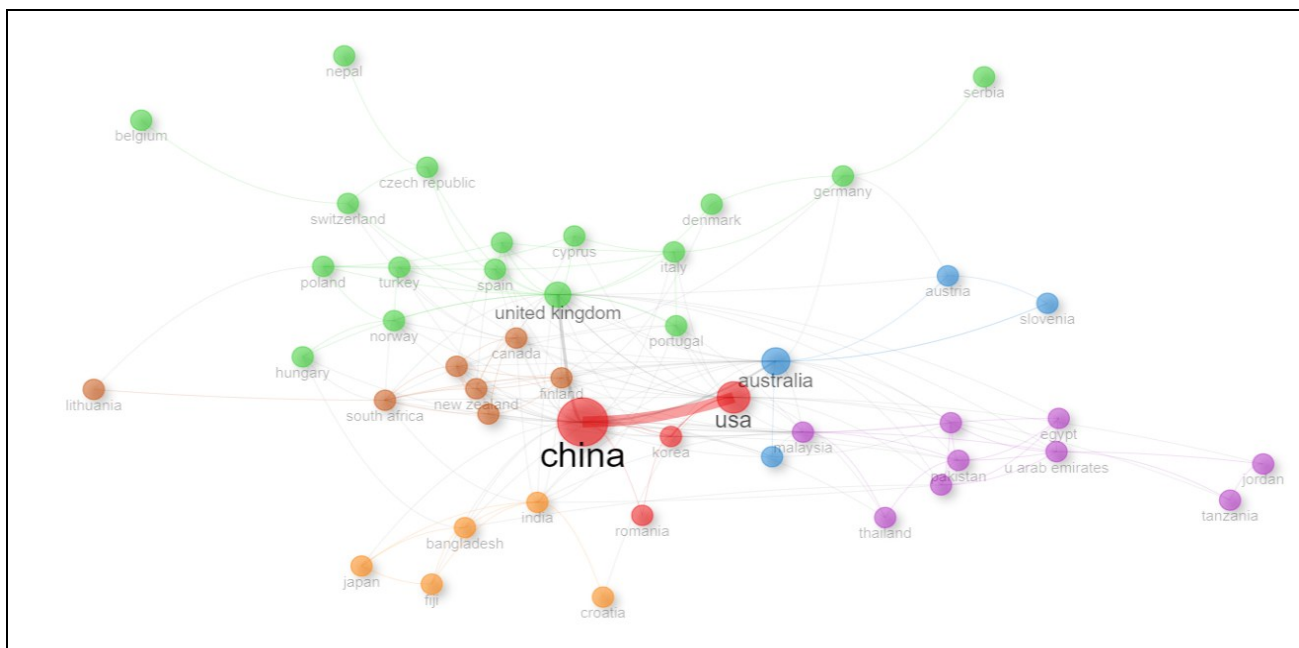


Figure 10. Collaboration Network Countries

China's substantial output confirms its influential role in shaping discussions around sustainable tourism, potentially leading to sustainability practices that differ from those in Western countries and thus affecting global standards. While the quantity of research is significant, the quality and impact of studies are equally important. Despite China's high article count, the quality of its research and global influence may vary. In contrast, countries like Portugal and Malaysia, with fewer articles, may still provide valuable insights, highlighting the need to evaluate research based on quality rather than quantity. This situation presents an opportunity for international collaborations, which can enhance research standards and drive innovation. Such partnerships can facilitate the exchange of best practices and resources, leading to more effective solutions for sustainable tourism challenges.

The data in Figure 10 depicts the collaboration network between countries. China, the USA, the United Kingdom, and Australia are the most influential countries within a unique network. With high betweenness and closeness centrality scores, China is a crucial hub, facilitating connections and information sharing. The USA has a significant influence with strong centrality scores, while Korea plays a moderate role. Romania, however, shows minimal involvement with low centrality scores. In Cluster 2, Australia stands out with significant centrality, whereas Vietnam, Austria, and Slovenia have lower scores, indicating secondary or peripheral roles. In Cluster 3, the United Kingdom emerges as the dominant hub with the highest centrality scores, with Spain playing an essential but less central role. This hierarchy highlights the importance of a few central nations in driving research and collaboration in sustainable tourism consumer behaviour, supported by numerous less central but actively engaged country participants.

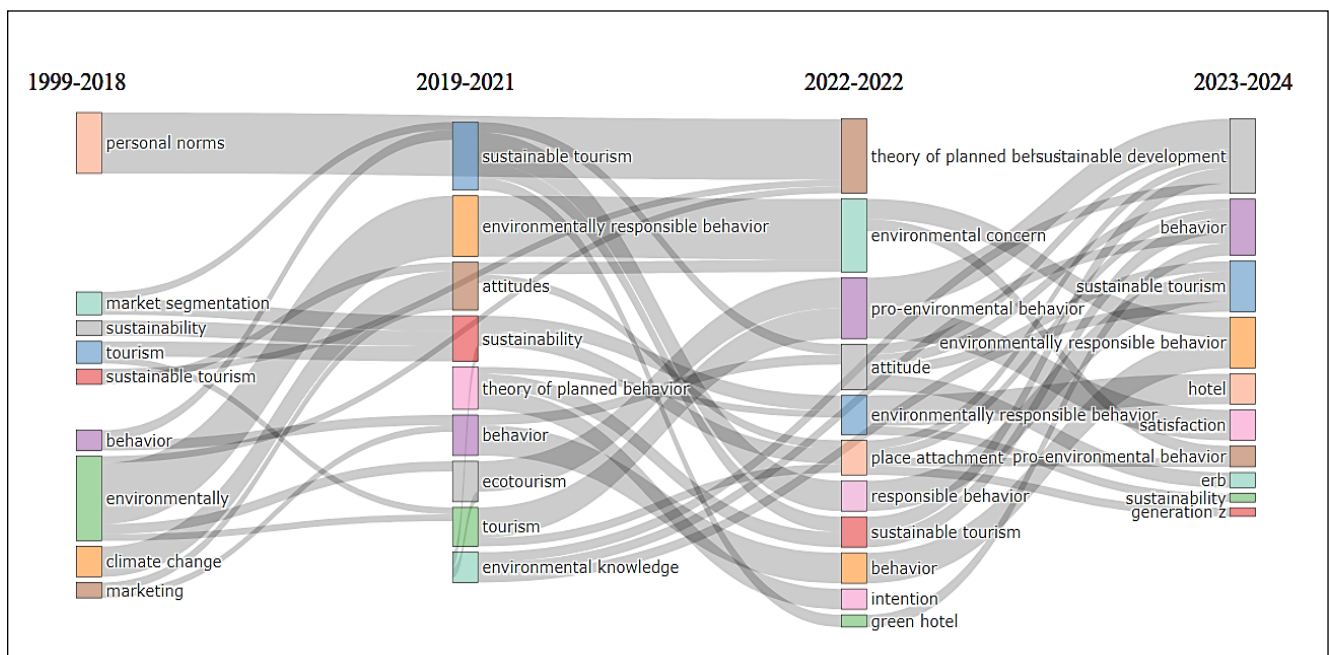


Figure 11. Thematic Evolution of Keywords

By analysing the bibliometric data for sustainable tourism consumer behaviour from 1999 to 2021, it was possible to identify significant changes in research focus and emerging trends in the field. One conspicuous change is the sturdiness of the keyword "behaviour," consistently present from 1999-2018 and 2019-2021, indicating that studying behaviour remains a fundamental aspect of sustainable tourism research. The transition from focusing on "behaviour" in the years 1999-2018 to "sustainable tourism" in 2019-2021, as indicated by keywords such as "satisfaction," "tourist," and "tourism marketing," suggests an increasing integration of consumer satisfaction and marketing strategies within the sustainable tourism discourse. This trend highlights a growing awareness of the need to balance tourist satisfaction with sustainable practices, thereby highlighting the role of marketing in promoting sustainable tourism. Another significant evolution in themes is observed in the shift from "climate change" (1999-2018) to "attitudes" (2019-2021). The keywords "climate change" and "air travel" point to a heightened interest in consumer attitudes toward climate change and the environmental impacts of air travel. Moreover, the progression

from "environmentally" (1999-2018) to "ecotourism" (2019-2021), along with terms like "environmental knowledge," "environmentally responsible behaviour," and "place attachment," illustrates a broadening focus on environmental consciousness. Furthermore, the change from "market segmentation" (1999-2018) to "sustainability" (2019-2021), marked by the keyword "hotel," indicates a rising interest in sustainable practices within the hospitality sector. This shift emphasises the importance of market segmentation in developing tailored sustainable strategies for different consumer groups, showcasing hotels' role in advancing sustainability. Additionally, the connection between "market segmentation" and "sustainable tourism" is reinforced by the keyword "pro-environmental behaviour," suggestive of a growing focus on fostering and understanding pro-environmental behaviours among diverse tourist segments.

GAPS IN THE RESEARCH

Despite much research on sustainable tourism consumer behaviour, there are gaps in understanding consumer behaviour in sustainable tourism.

Barriers to Sustainable Tourism Consumer Behaviour

One significant gap in research is the lack of exploration into the specific barriers that prevent tourists from adopting more sustainable practices. As highlighted by Budeanu (2007), having "positive attitudes towards sustainable tourism" does not always translate into corresponding actions, and the "lack of customer support" remains a substantial challenge in this area. The reasons for this barrier may stem from the complexities of tourist decision-making, which can be influenced by various social, personal, and economic factors that do not always align with environmental concerns (Budeanu 2007). Therefore, understanding these behavioural drivers is crucial for developing strategies that promote more environmentally friendly tourist behaviours (Han 2021). However, despite the expanding body of literature, researchers struggle to define and measure environmentally responsible tourist behaviour, leading to inconsistencies in findings and a limited understanding of the underlying factors that drive such behaviour. Furthermore, studies indicate that even when tourists express positive attitudes towards sustainability and environmental protection, they often fail to behave responsibly while travelling (Budeanu 2007; Bergin-Seers & Mair 2009). This gap between attitudes and behaviour is significant and warrants further investigation. Additionally, researchers suggest that tourist choices, influenced by external factors such as convenience, cost, and social norms, may play a critical role in shaping environmentally responsible behaviour (Budeanu 2007). Current efforts to promote sustainable tourism may not effectively capture customers' attention, potentially discouraging further investments from the industry and governments. Therefore, more research is needed to explore how specific initiatives or interventions can bridge the gap between attitude and behaviour, drawing insights from fields like environmental psychology.

The supply-side

Research on sustainable tourism consumer behaviour has primarily focused on the demand side, examining individual travellers' views, perceptions, and decisions. However, comparatively little attention has been given to the dynamics of the supply side, which significantly influences the overall landscape of sustainable tourism. This supply side includes tourism providers, destination managers, and policymakers essential in developing, promoting, and regulating sustainable tourism products and services. Entities such as hotels, tour operators, and transport companies can shape consumer choices by offering sustainable alternatives, adopting environmentally friendly practices, and educating their clients about the benefits of sustainable tourism. Additionally, destination managers play a crucial role by establishing sustainable infrastructure, promoting local culture and conservation initiatives, and implementing policies encouraging sustainable practices among businesses and travellers. For example, they might introduce strategies to minimise waste, conserve water, and protect natural habitats, making sustainable tourism more accessible and appealing to visitors. Moreover, policymakers are fundamental in creating a sustainable tourism regulatory framework. They can enact legislation and regulations that incentivise sustainable behaviours, such as tax breaks for eco-friendly businesses or imposing penalties on those who harm the environment. Furthermore, policymakers can support sustainable tourism through financial assistance and grants for environmentally friendly projects, as well as by promoting public awareness campaigns that emphasise the

importance of sustainable tourism. Consequently, understanding how supply-side factors influence demand-side behaviours can help develop more effective strategies to promote sustainable tourism. For instance, if studies reveal that tourists are more likely to choose sustainable alternatives when they are easily accessible and well-marketed by providers, destination managers and policymakers can focus their efforts on enhancing the visibility and attractiveness of these options.

Tourist Segments

Another significant gap in the literature on sustainable tourism consumer behaviour is the limited understanding of how different types of tourists, such as domestic versus international travellers or leisure versus business travellers, exhibit varying levels of environmentally responsible actions. Often, existing research treats tourists as a homogenous group, overlooking the complex and diverse nature of tourist behaviour. This oversimplification can lead to a generic approach to promoting sustainable tourism, which may prove less effective. For example, domestic travellers, who are more familiar with their local environment and culture, may have different motivations and barriers than international travellers, who prioritise convenience and unique experiences over sustainability. Similarly, leisure travellers who seek relaxation and enjoyment may be more open to sustainable options due to their flexibility in decision-making. In contrast, business travellers, often constrained by tight schedules and specific objectives, may find it challenging to prioritise environmental concerns. Therefore, further research is crucial to explore this diversity within the tourist population. By understanding the varied motivations and behaviours of different tourist segments, more effective strategies can be developed to promote sustainable tourism. Additionally, studies should examine how age, income, education, and previous travel experiences influence tourists' attitudes and actions regarding sustainability. Contextual elements also play a significant role in shaping tourist environmental behaviour. Aspects like the duration of stay, type of accommodation, and travel itinerary can impact the extent to which tourists adopt sustainable practices. For instance, tourists on short trips may prioritise convenience, while those on more extended stays may be more inclined to embrace eco-friendly practices. Understanding these context-specific behaviours can help design more relevant and practical sustainable tourism initiatives.

Policies and Regulations

Research on sustainable tourism consumer behaviour must also examine the influence of policy and governance in shaping sustainable practices among tourists. Policies and regulations are critical in establishing an environment that encourages or discourages these behaviours. Effective governance can significantly affect tourist behaviour by setting standards, providing incentives, and enforcing regulations that promote sustainability. However, existing studies primarily concentrate on individual attitudes, perceptions, and choices, often overlooking the broader policy context. This neglect limits our understanding of the various factors influencing sustainable tourism behaviour. For instance, policies such as tax incentives for eco-friendly businesses, regulations mandating sustainable practices, and public awareness campaigns can all shape tourists' decisions. Yet, without empirical research on the effects of these policies, it becomes difficult to assess their effectiveness and identify best practices. Therefore, future research should address this gap by exploring how different policy frameworks and regulatory measures impact tourists' decisions and behaviours. Key areas for investigation include the effects of financial incentives and penalties. How do incentives, such as tax benefits for choosing sustainable options or penalties for unsustainable behaviours, influence tourist choices? Understanding the effectiveness of these economic tools can help policymakers design impactful incentives. Additionally, it is essential to investigate regulatory measures. How do regulations that require specific sustainable practices, such as water usage limits or eco-friendly certifications, affect the behaviour of both tourists and service providers? Such research can reveal which regulations are most effective in promoting sustainability. Moreover, public awareness campaigns deserve careful examination. Evaluating how government-led initiatives influence tourists' attitudes and behaviours can contribute to developing effective communication strategies. A comprehensive understanding of these elements is crucial for fostering sustainable tourism practices.

Longitudinal Studies

There is a gap in research on sustainable tourism consumer behaviour, particularly regarding longitudinal studies. Most existing research captures only a snapshot of tourist behaviour at specific moments, which limits our understanding of how these sustainable practices evolve. This gap is critical because sustainable tourism initiatives often necessitate long-term behavioural changes, and comprehending these changes is essential for developing more effective strategies. Longitudinal studies, which follow the same individuals or groups over extended periods, are vital for several reasons. First, tourists' attitudes and behaviours towards sustainability can change due to increased environmental awareness, personal circumstances, or shifting social norms. These studies can capture these shifts and provide valuable insights into the dynamics of sustainable behaviour. Furthermore, policies promoting sustainable tourism are generally implemented gradually and may require time to demonstrate their effects. By monitoring tourist behaviour before and after policy changes, longitudinal studies can assess the effectiveness of these interventions and identify which policies have the most significant impact. Additionally, the tourism sector is influenced by economic fluctuations and technological advancements, and longitudinal research can shed light on how these external factors affect sustainable behaviours over time. For instance, an economic downturn might reduce spending on eco-friendly options, whereas modern technologies could enhance the accessibility of sustainable choices.

Impact Measurement

Impact measurement is a crucial area of research in sustainable tourism consumer behaviour that warrants more attention. Despite the increasing interest in encouraging sustainable practices among tourists, more empirical studies are needed to evaluate the actual effects of these behaviours on the environment and local communities. This gap limits our ability to assess sustainable tourism initiatives' effectiveness and justify investments in them. Understanding the tangible outcomes of sustainable tourism practices is essential for several reasons. First, without reliable data on these behaviours' environmental and social impacts, it becomes difficult to determine whether they meet their intended goals. For instance, while promoting eco-friendly transportation or encouraging tourists to support local businesses is expected, the effects on carbon emissions or local economies are often assumed rather than measured. Second, measuring impact can offer valuable insights into which elements of sustainable tourism are most effective. This information can help guide the development of more targeted and impactful interventions. For example, if research reveals that specific initiatives, such as waste reduction programs or conservation efforts, produce significant positive outcomes, these can be promoted. Conversely, if certain practices show minimal or adverse effects, resources can be reallocated to more effective strategies. Additionally, demonstrating the tangible benefits of sustainable tourism can justify investments in these practices. Clear evidence of positive impacts encourages policymakers, tourism providers, and other stakeholders to support and fund sustainable tourism initiatives. Empirical data can also strengthen arguments for sustainable tourism in policy discussions, facilitating the establishment of supportive regulations and incentives. Therefore, future studies should focus on conducting empirical research that assesses the actual impacts of sustainable tourism consumer behaviour on both the environment and local communities.

CONCLUSIONS

From 1999 to 2023, sustainable tourism consumer behaviour has grown significantly, transitioning from a niche interest to a prominent area of research. Although its initial development was slow, recent years have accelerated this growth, reflecting an increasing awareness of the importance of sustainability in tourism. This trend highlights considerable academic and practical efforts to understand and influence consumer behaviour in sustainable tourism, which are vital for shaping industry practices and informing policy decisions globally. Future research is well-positioned to build on this solid foundation, further enhancing sustainable tourism practices on an international scale. Specialised journals, particularly the *Journal of Sustainable Tourism*, have been instrumental in advancing knowledge in this area. At the same time, integrating sustainability into broader management practices within tourism and hospitality—illustrated by journals like *Tourism Management* and the *International Journal of Hospitality Management*—is crucial for promoting sustainable consumer behaviour worldwide. Moreover, the contributions of top

authors in sustainable tourism research have significantly influenced policies, guided industry practices, and shaped consumer behaviours towards sustainability. Continuous application of research findings is critical for addressing global challenges such as climate change, overtourism, and biodiversity conservation within the tourism sector. Institutional capacities, policy support, economic factors, and regional contexts shape global and collaborative by nature, sustainable tourism consumer research. Institutions with high centrality metrics disseminate knowledge, influence research agendas, foster interdisciplinary collaborations, and shape policymaking in sustainable tourism.

Strengthening institutional ties, promoting interdisciplinary approaches, and enhancing inclusive participation are essential for advancing effective research initiatives, sustainable tourism consumer behaviour, and sustainable practices worldwide. Analysing co-occurrence word networks reveals key strengths and growth areas within sustainable tourism consumer behaviour research. Emphasising central themes, understanding pro-environmental behaviours, and addressing emerging issues are crucial for advancing sustainable tourism practices globally. This analysis of scientific research on consumer behaviour in sustainable tourism demonstrates significant contributions from various countries while highlighting several gaps that must be filled to advance the field successfully. Subsequent studies in sustainable tourism consumer behaviour should concentrate on key areas to tackle existing gaps, such as identifying and overcoming barriers that hinder tourists from embracing sustainable practices. Furthermore, it is essential to explore how the supply side, including tourism providers and policymakers, impacts consumer decisions and to acknowledge the diversity among tourists to create customised sustainability initiatives. It is also imperative to assess the efficacy of policies and regulations in promoting sustainable behaviours, carry out longitudinal studies to monitor behavioural changes over time, and assess the tangible effects of sustainable tourism practices on the environment and communities. By addressing these gaps, researchers can devise more efficient strategies to encourage sustainable tourism consumer behaviour, ultimately contributing to a more sustainable future for the industry.

Research ethics statement

This article is the author's own original work, which has not been previously published elsewhere.

Author contribution statement

Reshma Sucheran wrote all sections of the article.

Funding

There was no funding for this research.

Disclosure statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The study acknowledges the National Institute for Humanities and Social Sciences (NIHSS) through the DUT BRICS Research Institute Grant Ref: BRI22/1215 for supporting this research.

References

- Alonso-Muñoz, S., Torrejón-Ramos, M., Medina-Salgado, M.-S., & González-Sánchez, R., 2023, 'Sustainability as a building block for tourism—future research: Tourism Agenda 2030', *Tourism Review*, 78(2), 461–474.
- Bergin-Seers, S., & Mair, J., 2009, 'Emerging Green Tourists in Australia: Their Behaviours and Attitudes', *SAGE Publishing*, 9(2), 109–119. <https://doi.org/10.1057/thr.2009.5>

- Budeanu, A., 2007, 'Sustainable tourist behaviour – a discussion of opportunities for change'. *Wiley-Blackwell*, 31(5), 499-508. <https://doi.org/10.1111/j.1470-6431.2007.00606.x>
- Callon, M., Courtial J.P., & Penan H., 1993, *The measurement of scientific activity: From bibliometrics to technological vigilance*. Gijón, Spain: Ediciones Trea, S.L.
- Dolničar, S., Crouch, G. I., & Long, P., 2008, 'Environment-friendly Tourists: What Do We Really Know About Them?' *Taylor & Francis*, 16(2), 197-210. <https://doi.org/10.2167/jost738.0>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M., 2021, 'How to conduct a bibliometric analysis: An overview and guidelines'. *Elsevier BV*, 133, 285-296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Doran, R., & Larsen, S., 2015, 'The Relative Importance of Social and Personal Norms in Explaining Intentions to Choose Eco-Friendly Travel Options', *Wiley-Blackwell*, 18(2), 159-166. <https://doi.org/10.1002/jtr.2042>
- Eck, N. J. V., & Waltman, L., 2021, 'VOSviewer goes online', <https://doi.org/10.59350/rar8d-zmp93>
- Figueroa-Rodríguez, K. A., Álvarez-Ávila, M. d. C., Castillo, F. H., Rindermann, R. S., & Figueroa-Sandoval, B., 2019, 'Farmers' market actors, dynamics, and attributes: A bibliometric study'. *Sustainability*, 11(3), 745.
- Galvagno, M., & Giaccone, S., 2019, 'Mapping creative tourism research: Reviewing the field and outlining future directions', *Journal of Hospitality & Tourism Research*, 43(8), 1256-1280.
- Gümüş, S., Bellibaş, M. Ş., Gümüş, E., & Hallinger, P., 2019, 'Science mapping research on educational leadership and management in Turkey: A bibliometric review of international publications', *School Leadership & Management*, 40(1), 1-22. <https://doi.org/10.1080/13632434.2019.1578737>
- Han, H., 2021, 'Consumer behaviour and environmental sustainability in tourism and hospitality: A review of theories, concepts, and latest research'. *Taylor & Francis*, 29(7), 1021-1042. <https://doi.org/10.1080/09669582.2021.1903019>
- Ibnou-Laaroussi, S., Rjoub, H., & Wong, W., 2020, 'Sustainability of Green Tourism among International Tourists and Its Influence on the Achievement of Green Environment: Evidence from North Cyprus'. *Multidisciplinary Digital Publishing Institute*, 12(14), 5698-5698. <https://doi.org/10.3390/su12145698>
- Li, N., & Li, R. Y. M., 2022, 'A bibliometric analysis of six decades of academic research on housing prices'. *Emerald Publishing Limited*, 17(2), 307-328. <https://doi.org/10.1108/ijhma-05-2022-0080>
- McBurney, M., & Novák, P., 2003, 'What is bibliometrics and why should you care?', <https://doi.org/10.1109/ipcc.2002.1049094>
- Moral-Muñoz, J. A., Liu, X., Santisteban-Espejo, A., & Cobo, M. J., 2020, 'Software tools for conducting bibliometric analysis in science: An up-to-date review'. *Ediciones Profesionales de la Informacion SL*, 29(1). <https://doi.org/10.3145/epi.2020.ene.03>
- Oliveira, O. J. D., Silva, F. F. D., Juliani, F., Barbosa, L. C. F. M., & Nunhes, T. V., 2019, 'Bibliometric Method for Mapping the State-of-the-Art and Identifying Research Gaps and Trends in Literature: An Essential Instrument to Support the Development of Scientific Projects'. *IntechOpen*. <https://doi.org/10.5772/intechopen.85856>
- Păduraru, O., Moroşanu, A., Păduraru, C. Ş., & Cărauşu, E. M., 2022, 'Healthcare Management: A Bibliometric Analysis Based on the Citations of Research Articles Published between 1967 and 2020', *Multidisciplinary Digital Publishing Institute*, 10(3), 555-555. <https://doi.org/10.3390/healthcare10030555>
- Prakash, C., & Dwivedi, S., 2022, 'Trends in Political Campaigning Research: A Bibliometric Literature Analysis', *Journal of Scientific Research*, 11(2), 262-271. <https://doi.org/10.5530/jscires.11.2.28>
- Ruhanen, L., Weiler, B., Moyle, B. D., & McLennan, C. L. J., 2015, 'Trends and patterns in sustainable tourism research: A 25-year bibliometric analysis', *Journal of Sustainable Tourism*, 23(4), 517-535.
- Wang, Z., Nie, L., Jeronen, E., Xu, L., & Chen, M., 2023, 'Understanding the Environmentally Sustainable Behaviour of Chinese University Students as Tourists: An Integrative Framework'. *Multidisciplinary Digital Publishing Institute*, 20(4), 3317-3317. <https://doi.org/10.3390/ijerph20043317>
- Xu, L., Ao, C. & Liu, B., 2023, 'Ecotourism and sustainable development: a scientometric review of global research trends'. *Environment Development and Sustainability*, 25, 2977-3003.

CBR - Consumer Behavior Review, Recife, v. 9, 1-17, 2025. Universidade Federal de Pernambuco.
ISSN 2526-7884. DOI: <https://doi.org/10.51359/2526-7884.2025.264332>

Copyright of the authors, 2025. Licensed under Creative Commons License Attribution 4.0 International (CC BY 4.0). This license allows others to distribute, remix, adapt, and build upon your work, even commercially, as long as they give you appropriate credit for the original creation. License text: <https://creativecommons.org/licenses/by/4.0/>