

Dobrea, Razvan-Catalin; Marin, Aurel; Dima, Cristina; Moncea, Madalina-Ioana

## Article

# The Relationship Between the Tourism Industry and Sustainable Development Goals Word Cloud Analysis

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## THE RELATIONSHIP BETWEEN THE TOURISM INDUSTRY AND SUSTAINABLE DEVELOPMENT GOALS – WORD CLOUD ANALYSIS

Răzvan-Cătălin Dobrea<sup>1</sup>, Aurel Marin<sup>2</sup>, Cristina Dima<sup>3</sup>  
and Mădălina-Ioana Moncea<sup>4\*</sup>

<sup>1)3)4)</sup> Bucharest University of Economic Studies, Bucharest, Romania

<sup>2)</sup> National University of Physical Education and Sport, Bucharest, Romania

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### Abstract

The worldwide adoption of sustainable models has been motivated by an increasing awareness of the negative environmental impacts caused by unsustainable economic development models. The paper explores the relationship between the tourism industry and sustainable development goals during the period 2015-2021, using 245 studies from the Google Academic database. Various approaches, such as Word Cloud analysis, correlation network, and word network, were used to identify frequently occurring words and word pairs in the research domain. The R software was used for this research. Empirical results were used to identify the most relevant journals in the field and the most prolific authors. The Journal of Sustainable Tourism addresses specific themes such as “food”, “community”, “sanctions”, and “social”. Sustainability focuses on “culture”, “heritage”, “local”, and “environment”, while the Worldwide Hospitality and Tourism Themes journal represents a niche in the field, covering topics such as “community”, “health”, “well-being”, “investment”, and “growth”. Thus, the results obtained can provide significant contributions to public policies and independently applied practices within the industry, facilitating more informed decision-making in support of sustainable development. This research contributes to the specialised literature by identifying current research trends in the tourism industry and its relationship with sustainable development goals, highlighting dominant themes based on the keywords used. These interdisciplinary connections can lead to deeper understanding and more efficient solutions for sustainable development.

**Keywords:** Tourism, sustainable development goals, tourism journals, innovation, sustainability

**JEL Classification:** L83, Q01, Q56, C87, C01

\* Corresponding author, Mădălina-Ioana Moncea – e-mail: [madalina.moncea@man.ase.ro](mailto:madalina.moncea@man.ase.ro)



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## **Introduction**

The analysis of the relationship between the tourism sector and the Sustainable Development Goals (SDGs) is essential for promoting sustainable practices, mitigating negative impacts, and maximising the sector's potential to contribute to economic, environmental, and social development. It contributes to policy formation, guides investment decisions, and promotes collaboration among stakeholders to ensure alignment with the core objectives of sustainable development.

The tourism industry makes a significant contribution to global economic growth, job creation, and income generation. By examining its relationship with the SDGs, decision makers can identify opportunities to maximise the positive economic impact of tourism, such as reducing poverty, increasing social inclusion, and economic diversification. Therefore, the economic impact should not be neglected. According to the World Tourism Organisation (UNWTO) report (2019), the tourism sector plays a crucial role in ensuring financial stability and social balance in a rapidly growing global economy. To revitalise it and harness its existing potential, a sustainable growth approach is needed.

From an environmental sustainability perspective, tourism can have a significant impact, including resource consumption, waste generation, and habitat degradation. Analysing the relationship between the tourism industry and the SDGs helps identify ways to mitigate these negative environmental effects and promote sustainable practices, such as reducing carbon emissions, conserving natural resources, and protecting biodiversity. This analysis enables the development of strategies that balance the needs of tourists with those of local communities, ensuring that tourism contributes to the overall sustainable development of the destination.

By aligning policies in the tourism sector with the SDGs, decision-makers can integrate sustainable development principles into the planning, management, and regulation of the tourism industry. This alignment promotes coherence and synergy among various policy areas and encourages a holistic approach to sustainable tourism development. The SDGs represent a global agenda that involves all member states of the United Nations.

A number of 169 states began a series of actions in 2015 to implement Agenda 2030. Tourism is one of the critical areas of interest for Agenda 2030. The concept of sustainability has received significant attention in socio-economic literature because it represents a link between the expansion of society and economic activities within it, as well as being influenced by environmental, sociocultural, and economic contexts.

Tourism is explicitly included in two of the 17 SDGs, with the tourism industry closely related to SDG 8.9 and 12.7b.

Regarding relevance, the study addresses a knowledge gap and informs about the policies and practices used. The study explores the relationship between the tourism industry and the SDGs, a significant and timely subject. By exploring this relationship, the study contributes to a deeper understanding of how the tourism industry can contribute to sustainable development efforts and align with global sustainability goals.

The conclusions and perspectives of the study have practical implications for decision-makers, researchers, and industry practitioners. Understanding the overlap between certain SDGs and the tourism sector can drive the development of targeted policies, strategies, and

initiatives that promote sustainable tourism practices. This knowledge can guide decision-making and action plans to foster sustainable development in the tourism industry.

Regarding novelty, the study covers the period from 2015 to the beginning of 2021, providing updated research using Word Cloud analysis to explore the relationship between tourism and the SDGs. It takes into account recent developments and trends in the field, offering fresh perspectives on the subject. Analysing 245 studies from the Google Academic database, the study consolidates and synthesises existing research in the field.

The relevance of the study lies in its focus on the relationship between the tourism industry and SDGs, informing policies and practices and offering sector-specific insights. Its potential novelty stems from the timeframe of the research, the comprehensive analysis of multiple studies, and the identification of key journals and authors.

This paper is organised into four parts. The first part summarises the most significant articles on this topic, while the second part highlights the study's purpose and the primary research questions. The third part is dedicated to the research methodology, while the empirical findings section is divided into three subsections. The main findings are presented at the end of the study.

### **1. Literature review**

SDGs, and in particular the need to understand the nature and limitations of development, have been a significant topic in the tourism sector literature over the past decade (Saarinen, 2006), evolving into an “integral component of tourism policy and strategy” (Holden, 2016).

Due to the interconnection between the pressures of the tourism sector and its sustainability (Gogonea et al., 2017), the challenges of sustainable tourism management (Hall, 2011), an in-depth study is necessary to explain the significance of tourism sustainability in the specialised literature. This is because there is a close relationship between the tourism sector, sustainable development, public concerns about it, security, morality, prosperity, waste, protection, and conservation (Buckley, 2012). As a result, considering sustainability in the tourism literature, especially its relationship with income and workforce development, has become a significant and evolving issue. Popescu (2018) recognised that tourism makes one of the most important contributions to sustainable development due to its dynamism and growth, which directly impact economic growth in regions and tourist destinations, as well as the fact that tourism is based on a direct connection between tourists, industry, the environment, and local communities.

Even though recent research reveals that the World Trade Organisation (WTO) provides one of the most commonly used definitions of the term, the research evidence has not established a widely recognised definition of sustainable tourism (Asmelash et al., 2019). According to the WTO, tourism is “the development process that responds to the needs of present tourists and host regions while protecting and enhancing future opportunities” (Fahimnia et al., 2015).

The International Union for Conservation of Nature, the World Wildlife Federation, the European Federation of National and Natural Parks defined sustainable tourism as early as 1991 as “all forms of tourism development, management, and marketing that respect the natural, social, and economic integrity of the environment, ensuring the exploitation of natural and cultural resources for future generations.

Another definition of sustainable tourism is outlined by the United Nations Environment Programme (UNEP) in collaboration with the World Tourism Organisation (UNWTO) and represents “tourist activities that fully take into account their current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities” (UNDP and WTO, 2005).

The UNWTO also provides a more extensive conceptual definition of sustainable tourism, expanding on the previously stated definition as follows: “Sustainability principles refer to environmental, economic, and socio-cultural aspects... and an appropriate balance must be established among these three dimensions... Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure broad-based participation and consensus building... Sustainable tourism should also maintain a high level of tourist satisfaction...” (Mihalic, 2020).

In the context of sustainable tourism, responsible tourism refers to the implementation of sustainability principles and their impact. The historical significance of sustainable tourism is undeniable, but the true meaning of its implementation depends on responsibility. As some writers and institutions have used the term “sustainable and responsible tourism” (SRT), others have used the term “responsible tourism” to describe both responsible and sustainable tourism. The terms “responsible tourism” and “responsible, sustainable tourism” have been proposed to avoid ambiguity.

Additionally, the sustainability concept of the Brundtland report has been accepted by many in the academic, tourism, government, and business sectors. Sustainable tourism research has considered various variables, including ecological, economic, social, and political sustainability, as well as fairness and equality across borders. In the tourism business, the “three pillars of sustainability” have been modified to represent the three elements of sustainability: economic, social (including cultural), and environmental (Pirtea et al., 2021).

The third pillar of sustainability is the economic environment generated by the tourism industry. Similar to many examples, there are inconsistencies between the environmental and economic factors and the values of tourism. Although sustainable tourism is primarily derived from the general terms of sustainability and sustainable development, it is distinct; “the notion of sustainability in tourism has emerged as a new paradigm” (Saarinen, 2006). According to estimates, there are approximately 300 distinct definitions of sustainability (Johnston et al., 2007). However, the need to preserve precious resources for future generations is emphasised.

Scheyvens (2018) has suggested using the connections between tourism and sustainable development in a wide range of contexts. With proper policy and existing planning mechanisms, local, regional, and national destinations are likely to benefit from the positive impact of tourism while working towards achieving the SDGs.

Properly managed, tourism can promote economic and social development and accelerate the achievement of SDGs (WTO and UNDP, 2017). This industry has played a crucial role in job creation and economic growth (SDG8), responsible consumption and production (SDG12), and the management of marine resources (SDG14) (Rasoolimanesh et al., 2020; Trupp and Dolezal, 2020; WTO and UNDP, 2017). It has also contributed to achieving goals related to poverty eradication, gender equality, and environmental promotion.

Several studies have used bibliometrics to deconstruct the structural elements of long-term sustainability (Quental et al., 2011; Schoolman et al., 2012; Buter et al., 2013; Linnenluecke and Griffiths, 2013; Wichaisri and Sopadang, 2018).

In terms of the research gaps addressed in this article, it presents an area with few studies covering this connection. One of the main research gaps on this topic is the lack of comprehensive approaches to measuring and evaluating the impact of the tourism industry on the SDGs. Thus, the research results outline the interconnections between the two addressed subjects.

Brand positioning is supported by a marketing orientation that recognises the existence of an infinite number of competing destinations. Tourist destinations can elicit complex emotional responses from people, both favourable and unfavourable, as they are both physical and metaphysical, with subjective and intangible aspects. Sustainability can be a concise and relevant offering, an essential attribute of a tourist destination that sets it apart from the competition, while also ensuring that the location and business thrive and grow.

Dabija and Băbuț (2013), Popescu (2018), and Popescu et al. (2014) have analysed Romanian tourism in the context of sustainable development. Using a structural equation model, Dabija and Băbuț (2013) demonstrated that the main actions taken by tourist accommodation units could represent real stimuli to build satisfaction among Romanian tourists. On the other hand, Popescu et al. (2014) recognised the role of economic, social, and ecological factors and the dimension of tourism, demonstrating the impact of sustainable development on tourism development.

In Romania, the Master Plan for the Development of National Tourism in Romania for the period 2007-2026 has been elaborated, with a focus on the efficient use of environmental resources, respect for the socio-cultural authenticity of host communities, ensuring the sustainability of economic operations with benefits distributed equitably to all parties involved, to guide the processes carried out in the tourism industry towards achieving the SDGs. Furthermore, two other national strategies are in the implementation period, namely the National Strategy for the Development of Ecotourism and the Strategy for the Development of Balneology Tourism.

From the strategies developed at the national level, four projects were carried out in the programming period 2007-2013 that respond to the SDGs, and another four projects were carried out in the period 2014-2020.

It is a fascinating and stimulating topic, according to Ratten (2019), involving the analysis of general characteristics of entrepreneurs, such as the willingness to take risks and be open to both innovation and hard work, as well as an entrepreneurial attitude, in an intriguing context (tourism as a human interest), as well as multidisciplinary concepts, such as the impact of technology, economic geography, and cultural impact.

Entrepreneurs and, by extension, tourism service providers should pay increased attention to the image of tourist destinations, as this is a perceptual impression that tourists will have and adapt to strengthen the sense of belonging and interaction (Nugraha, Suryaningsih and Cahyanti, 2021).

According to Davidescu and Manta (2022), research themes such as entrepreneurship, social issues, and the impact of tourism on academic literature have been proposed by these concepts: the entrepreneurial ecosystem and informality.

To maximise the sound effects of tourism on the local economy, culture, and the environment, individuals, businesses, and governments work together to promote responsible tourism as a means of long-term economic growth.

## **2. Research objectives and research questions**

The aim of the paper is to analyse the field of research in the tourism industry with respect to the objectives of sustainable development, highlighting major themes using Word Cloud analysis. Over 245 publications from the Google Academic database, covering the reference period of 2015-2021, were extracted to achieve the research objective. The use of the Google Academic database, as well as its additional tools such as Google Scholar Metrics, facilitated exploration from diverse sources of articles due to the breadth and variety of content.

Out of the total extracted publications, approximately 89% are scientific articles, 2% are specialised reports, and 9% are book chapters published by various publishers (Springer, Emerald).

The selection of this time interval was based on the following considerations: alignment with the adoption of the SDGs in September 2015, covering the initial years after the establishment of the SDGs, allowing for an examination of the relationship between tourism and sustainable development objectives in the early years of their implementation. Additionally, the period from 2015 to 2021 encompasses significant developments and trends in the tourism industry and sustainable development.

This time frame includes the increasing recognition of sustainability issues, the growth in the adoption of responsible tourism practices, and the evolution of global discussions concerning the achievement of the SDGs. Analysing studies from this dynamic period allows us to understand the relationship between the evolution of tourism and sustainable development during this period.

This paper will attempt to answer the following research questions:

RQ1. Which journals have the highest number of articles?

RQ2. Who are the most prolific authors in the field?

RQ3. What are the most frequent words in the abstracts of scientific publications?

RQ4. What are the most significant themes in the most relevant journals in the field?

## **3. Research methods**

To discover the main subjects of the tourism industry in relation to SDGs, a systematic search was conducted on Google Scholar using the search terms “sustainable development goals” and “tourism.” The term “SDGs” represents the 17 SDGs mentioned in the Agenda 2030, and it was chosen due to the complexity of information it encompasses.

The study period covered the years from 2015 to 2021, and the search language was English. To analyse the research field, the methodology included several approaches: Word Cloud analysis was used to highlight the most prevalent words in representative journals in the field. This was done by collecting sources of information, extracting relevant terms, and processing

them using the R software for visual representation based on frequency of appearance. Correlation network analysis helped identify articles and documents that were frequently co-cited in the specialised literature. This allowed the identification of authors who contributed significantly to the addressed theme. The word network analysis facilitated the examination of word pairs that frequently co-occurred, aiming to identify thematic clusters representing subdomains of research in the tourism and sustainable development industry.

The methodology for constructing networks involved five stages:

- Text preprocessing: Scientific document text underwent initial processing, including tokenisation, removal of special characters, and common stop words to reduce noise.
- Co-occurrence identification: After preprocessing, the co-occurrences of terms in the text were calculated. This involved recording the frequency at which two terms appeared together in the same context, considered as co-occurrence.
- Network graph construction: Using co-occurrence data, a network graph was constructed, with terms represented as nodes and edges (links) between nodes created to reflect co-occurrences. A weighted approach was used, where the thickness or intensity of edges represented the frequency of co-occurrences.
- Significance threshold setting: A filtering process was applied to focus on significant relationships by establishing specific thresholds, such as a minimum co-occurrence frequency (at least 200 times) and a minimum correlation coefficient (greater than 0.5) between terms to be included in the network. These thresholds aimed to reduce noise and highlight stronger and more significant connections between terms.
- Network visualisation: The network was visualised using R.

The correlation metrics utilised in the co-occurrence network analysis included the Spearman and Kendall correlation coefficients, as well as the Pointwise Mutual Information (PMI) and Jaccard coefficients. PMI is a measure of the association between two terms, frequently used in natural language analysis. The higher the PMI value, the stronger the association between terms. It can assess how often terms appear together in scientific documents compared to their statistical expectations. The Jaccard coefficient measures the similarity between two sets. In network analysis, it can be used to evaluate how many documents contain both term A and term B in relation to the total number of documents containing either term A or B. A higher Jaccard coefficient indicates a greater overlap in term co-occurrences.

In analysing the network of publication co-occurrences, co-occurrences with a frequency of at least 200 times and a correlation coefficient exceeding 0.5 were considered. Overall, Word Cloud analysis, correlation network analysis, and word network analysis methodologies were justified based on their ability to summarise textual data, identify relationships between variables, and uncover patterns and themes within text. The main results of word correlations with the highest degree of correlation are shown in table no. 1.

**Table no. 1. Correlation results between words (highest degree of correlation)**

Item1	Item2	Correlation
Higgins	Desbiolles	0.975
Covid	Pandemic	0.820
Oceans	Seas	0.739



<b>Item1</b>	<b>Item2</b>	<b>Correlation</b>
Gender	Equality	0.719
Greenhouse	Gas	0.713
Female	Male	0.696
Fuels	Fossil	0.677

It is worth mentioning that the raw data underwent several transformations: string operations were applied to display raw tests as tokens, and based on these tokens, a document-term matrix was constructed, representing documents as rows and terms as columns, with each cell containing the frequency of each data appearing in each record. Additionally, the analysis included the removal of “stop words”: words that were predetermined to be irrelevant and were eliminated before analysis. These were removed to reduce redundancy in the data, as they are very common and have low semantic relevance in content analysis. By eliminating these words, a more precise picture of the analysed content was obtained, and significant key terms for research were identified. Davidescu and Manta (2022a,b) provide a detailed description of the methodology.

**4. Results and discussions**

**4.1. Descriptive statistics**

In the context of the 2030 Agenda for Sustainable Development (SDGs), tourism is increasingly recognised as a key economic force in many countries. This study aimed to investigate the research field concerning SDGs, highlighting significant themes of interest based on Word Cloud analysis. To achieve the research objective, 245 publications were extracted from the Google Academic database, covering the period from 2015 to 2021. The reference period for this research may exclude recent developments and relevant research conducted after the beginning of 2021.

To ensure a comprehensive approach and increase the research’s relevance, other categories of publications were also included in a reduced dimension. Conclusions regarding these additional categories are similar to those drawn for the analysed journals.

The main limitation can be noted as the use of a single platform, Google Academic. Additionally, other platforms such as Web of Science (WOS) or Scopus could be utilised. The use of the Google Academic database, along with its supplementary tools such as Google Scholar Metrics, facilitated the exploration of articles from diverse sources due to the breadth and variety of content. It was chosen for this research because it provides a rich basis for exploring articles from various sources, being the database with the most search results for the reference keywords.

The second limitation pertains to the use of predefined keywords to clearly define the scope of the study, avoiding ambiguity or vague interpretations. These keywords also contributed to improving the relevance and specificity of the research results.

Utilising keyword analysis and the word network to identify key themes and connections between concepts provides a clear picture of the major research directions and priorities in the specialised literature. The presentation of the network of co-occurrences of relevant keywords, such as “climate change”, “United Nations”, and “COVID-19 pandemic”, illustrates how complex interactions between tourism and SDGs were explored and how

topics like the impact of climate change and the pandemic on the tourism industry were addressed.

In the analysed period from 2015 to 2021, there is an upward trend in publications related to tourism hospitality and the SDGs, with nearly 100 publications in 2020, the year of the pandemic when tourism was heavily affected by COVID-19 measures (Figure no.1).

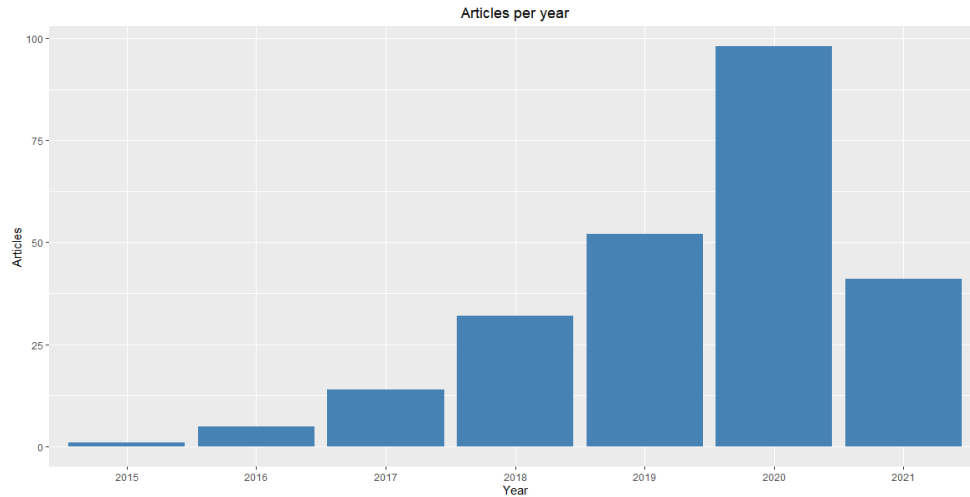


Figure no. 1. Articles by reference years

Most of these industry research articles have been published in tourism journals. The majority appear in the Journal of Sustainable Tourism, Sustainability, and Worldwide Hospitality and Tourism Themes (Table no. 2).

Table no. 2. Sources with the highest number of articles

Journals	Documents	Impact factor	Database
Journal of Sustainable Tourism	39	9.470	Taylor and Francis
Sustainability	30	3.900	MDPI AG
Worldwide Hospitality and Tourism Themes	10	0.393	Emerald Group Publishing
Austrian Journal of South-East Asian Studies	5	2.400	Society for South-East Asian Studies
Tourism Management Perspectives	5	7.608	Elsevier USA
Journal of Outdoor Recreation and Tourism	4	3.800	Elsevier BV
Journal of Cleaner Production	3	11.100	Elsevier Ltd.
Marine Policy	3	4.315	Elsevier Ltd.
Tourism Management	3	12.879	Elsevier Ltd.

The predominance of research articles regarding the relationship between tourism and the SDGs in tourism-related journals, such as the Journal of Sustainable Tourism, Sustainability, and Worldwide Hospitality and Tourism Themes, highlights the focus and specific expertise of these journals. This concentration of publications in tourism journals suggests the importance and recognition of the role of the tourism industry in sustainable development.

The Journal of Sustainable Tourism, as one of the most significant journals in the field, often features articles that explore the intersection of tourism and sustainability. It covers a wide range of topics, including community tourism, sustainable tourism planning, destination management, and the social, economic, and environmental impact of tourism.

Sustainability, a journal with relevant research in the analysed field, provides a platform for interdisciplinary research on sustainability-related themes, including sustainable tourism. It covers a broad spectrum of sustainability issues, from environmental conservation to social equity, and attracts works that examine the integration of sustainability principles into tourism practices.

Worldwide Hospitality and Tourism Themes Journal offers a specific niche in the field, focusing on hospitality and tourism-related themes, including community development, health, well-being, investments, growth, and inclusion. The inclusion of works in this journal demonstrates the diverse range of topics explored in the context of hospitality and tourism and their relationship with sustainable development.

The concentration of research articles on tourism and SDGs in these journals indicates a dedicated research community interested in advancing knowledge and understanding in this field.

The most prolific authors in the field, with approximately three published papers each, include Emma Hughes, Kaitano Dube, Regina Scheyvens, and Stefan Gossling. Scheyvens and Hughes have made the most significant contributions, underscoring their experience and influence in the research community (Table no. 3). Furthermore, in terms of citations, the scholarly discussion has received the most significant contributions from Scheyvens and Hughes, who play a vital role with 94 and 69 citations, respectively. The significant contributions of authors such as Emma Hughes, Kaitano Dube, Regina Scheyvens, and Stefan Gossling in tourism and SDGs indicate their expertise and influence on the research community.

**Table no. 3. List of authors with the most contributions in the field**

<b>Author</b>	<b>Affiliation</b>	<b>Number of publications</b>
Emma Hughes	Massey University: Palmerston North, NZ	3
Kaitano Dube	Emirates Aviation University: Dubai, AE Vaal University of Technology: Vanderbijlpark, ZA	3
Regina Scheyvens	Massey University: Palmerston North, NZ	3
Stefan Gössling	Linnaeus University, School of Business and Economics, Kalmar, Sweden	3
C. Michael Hall	Kyung Hee University: Seoul, KR	2
Daphne Comfort	University of Gloucestershire: Cheltenham, Gloucestershire, GB	2
Dimitri Ioannides	Mittuniversitetet Campus Östersund: Östersund, Jämtland, SE	2
Szilvia Gyimóthy	Aalborg University: Aalborg, DK	2
Laura James	Aalborg University: Aalborg, DK	2
Freya Higgins-Desbiolles	The University of South Australia: Adelaide, AU	2

#### 4.2. Examining major research topics in the field of sustainable tourism research using Word Cloud analysis

Identifying the most relevant journals in the field of tourism and SDGs provides insight into the specific research themes and areas that have been prominent in the specialised literature.

In the context of tourism industry development and its implications for SDGs, the Journal of Sustainable Tourism seems to cover topics such as “food”, “females”, “community”, “labour”, “sanctions”, “social”, and “local”. This suggests that the journal may explore issues related to sustainable food practices in tourism, the role of women in the industry, community involvement, local economic development, social aspects of tourism, and the impact of policies or regulations (sanctions) on sustainable tourism.

Sustainability appears to be more focused on themes such as “cultural”, “heritage”, “local”, “tourist behaviour study”, and “environment”. This implies that the journal concentrates on subjects such as cultural heritage preservation, sustainable management of natural resources, community-based tourism initiatives, understanding tourist behaviour and preferences, and the environmental impact of tourism.

Worldwide Hospitality and Tourism Themes Journal provides a niche in the field, addressing themes such as “community”, “health”, “well-being”, “investment”, “growth”, and “inclusivity”. This suggests that the journal explores community involvement and development in the hospitality and tourism industry, the intersection between tourism and health/well-being, investment strategies and opportunities, industry growth trends, and approaches to promote inclusivity (Figure no. 2).



Figure no. 2. Relevant topics addressed in the most relevant journals

The analysis of keywords and recurring themes in these journals provides valuable insights into the research priorities and interests in the field of tourism and the SDGs. Researchers and practitioners can use this information to identify relevant topics, understand the current discourse, and explore potential avenues for further research, collaboration, or intervention strategies aligned with the SDGs.

**4.3. Exploring the relationship between words in scientific publication summaries**

Investigating the research domain from the perspective of abstracts, it is evident that the most frequent words found in the abstracts were “sustainable development goals”, “industry”, “economic”, “objectives”, “growth”, “countries”, “environmental”, “social”, “political”, “agenda” (Figure no. 3). These provide valuable information about the concepts and key themes commonly discussed in the specialised literature on the relationship between tourism and SDGs.

The frequency of words such as “SDGs” indicates a strong emphasis on aligning tourism with the broader sustainable development agenda. The term “industry” suggests recognition of the importance of the tourism sector in contributing to sustainable development.

The presence of words such as “economic”, “growth”, and “countries” indicates a concern for the economic aspects of tourism and its potential to positively impact local and national economies. The words “environmental” and “social” highlight a dual focus on environmental sustainability and social well-being in the context of tourism and sustainable development. This indicates recognition of the need for environmentally friendly practices and consideration of social aspects, including community engagement and the well-being of local populations.

Mentions of “politics” and “agenda” suggest a focus on policy frameworks and integrating tourism into national and international development agendas, such as the 2030 Agenda for Sustainable Development.

The word network has highlighted key points such as “development”, “tourism”, “objectives”, “research”, “paper”, “Agenda 2030”, “environment”, “development goals”, “results”, “policies”, and “approach.” These central points signify key concepts and areas of interest in the specialised literature, indicating the interconnection and interdependence of these terms in understanding the relationship between tourism and SDGs.



**Figure no. 3. Most frequently used words in the abstracts of scientific publications**

Regarding the keywords, the most correlated ones (figure no. 4), the most frequent word combinations were “climate change”, “United Nations”, “semi-structured”, “Covid-19 pandemic”, “transaction synergy”, “ocean-coastal-marine”, “purpose-limitations-implications-methodology-approach”.

The presence of keyword combinations such as “climate change” indicates the recognition of the importance of addressing climate challenges in the context of sustainable tourism development. This suggests that researchers have explored the implications of climate change for the tourism industry and its alignment with the SDGs.

The mention of the “United Nations” reflects the influence of the global organisation in setting the SDGs and guiding the sustainable development agenda. It suggests that the literature examines the role of the United Nations in promoting sustainable tourism practices and achieving the SDGs.

The keyword combination “semi-structured” may indicate the use of semi-structured research methodologies or approaches in the analysed studies. This suggests that researchers have employed qualitative research methods that allow flexibility and in-depth exploration of the subject.

The inclusion of “COVID-19 pandemic” highlights the significant impact of the pandemic on the tourism industry and its implications for sustainable development. It suggests that recent research has addressed the challenges, opportunities, and responses related to the COVID-19 pandemic in the tourism industry and the SDGs.

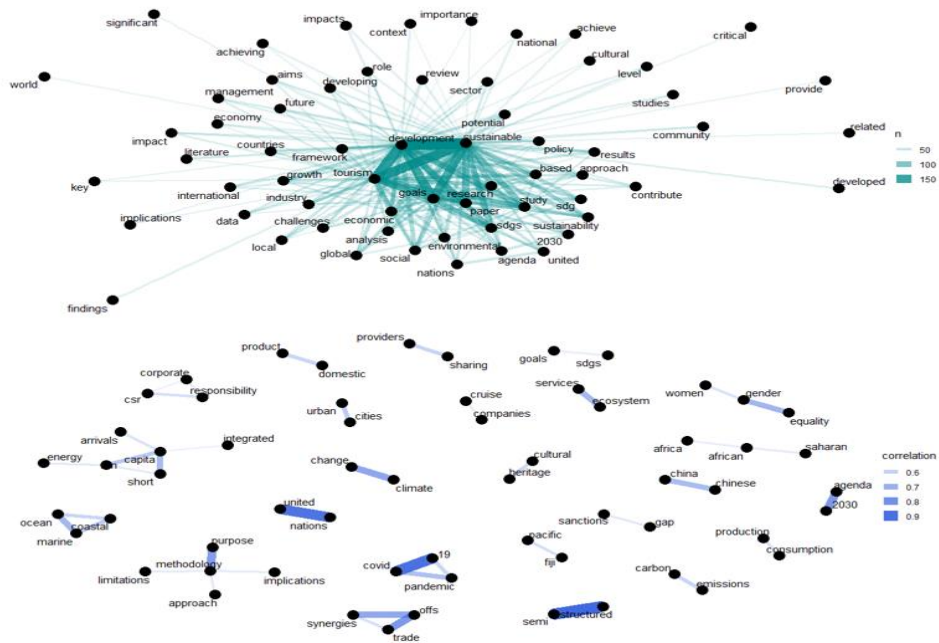
The keyword combinations “transaction synergy”, “ocean-coastal-marine”, and “purpose-limitations-implications-methodology-approach” represent specific topics or research aspects that have drawn attention in the specialised literature. These combinations indicate that researchers have explored topics such as synergies and trade-offs between different SDGs, the importance of ocean, coastal, and marine sustainability, and discussions related to the purpose, limitations, implications, methodology, and approach to research in this field.

These findings highlight the multidimensional nature of the subject and the various areas of investigation in the field of tourism and sustainable development.

Considering the multidimensional relationship between tourism and the SDGs, future research could explore more interdisciplinary approaches. Investigating the long-term impact of tourism on achieving the SDGs is crucial. Future research could focus on understanding the sustainability outcomes of tourism initiatives and policies over extended periods, including their effects on local communities, ecosystems, cultural heritage, and economic development.

Exploring the role of technology and innovation in promoting sustainable tourism is an important area for future research. This may include studying the impact of technological advancements such as digital platforms, databases, artificial intelligence, and blockchain on enhancing sustainability practices, resource efficiency, and promoting responsible tourist behaviours.

Further research is needed to develop robust measurement frameworks and indicators to assess the progress and impact of tourism on SDG attainment. This includes exploring innovative methodologies, data collection techniques, and performance measurement tools to monitor and evaluate the sustainability performance of tourist destinations, businesses, and policies.



**Figure no. 4. The word network and correlation network in the summary of scientific publications**

In investigating the connections between the tourism industry and SDGs, this research analysed 245 publications from the period 2015-2021, with a focus on identifying relevant key themes. The analysis yielded results similar to existing literature in terms of the addressed topics and interconnections between them. Recommendations include developing practices for sustainable tourism, fiscal incentives, capacity building, public-private partnerships, and promoting research and knowledge exchange.

These measures should adhere to the Global Code of Ethics for Tourism Industry issued by UNWTO to promote sustainable tourism and successfully achieve the SDGs. Keyword and word network analysis revealed major themes addressed in the literature, such as “climate change”, “COVID-19 pandemic”, “food”, “community”, “culture”, “environment”, and “social inclusion”. These themes represent key aspects of the interaction between the tourism industry and SDGs, highlighting the complexity and diversity of the subject.

**Conclusions**

This research contributes to understanding the relationship between the tourism industry and the SDGs, providing insights into the relevance of the SDGs for the tourism industry, the overlap between specific goals and the tourism sector, as well as key themes and research contributions. The following describes the main practical implications of the research.

- Policy development: Political actors in the tourism sector can use the results to inform policy and strategy development aligned with the SDGs. Identified objectives, such as SDGs

8.9 and 12.7b, can guide policy formulation related to employment in the industry, sustainable consumption, production, and responsible tourism practices.

- **Industry transformation:** The research findings can help shape the future direction of the travel and hospitality sector. Recognising the sector's impact on natural systems, decision-makers and industry stakeholders can explore innovative approaches to enhance sustainability, promote community involvement, and preserve cultural heritage.

- **Research focus:** Identifying relevant journals, prolific authors, and specific topics guides researchers interested in studying the relationship between tourism and sustainable development. It highlights key areas where research gaps and additional knowledge exist.

- **Collaboration and knowledge exchange:** The summary underscores the importance of collaboration and knowledge exchange among stakeholders in the tourism industry. Researchers, policymakers, and industry practitioners can use this information to identify potential collaboration opportunities and platforms for sharing best practices, lessons learned, and innovative solutions.

- **Mentioning research results and empirical studies** contributes to the knowledge base for monitoring and evaluating progress toward sustainable development in the tourism sector. Decision-makers can use this information to track the impact of policies and initiatives, assess intervention effectiveness, and identify areas for improvement.

Overall, the practical application of this summary lies in its potential to inform policy development, guide industry transformation, stimulate research, foster collaboration, and enhance monitoring and evaluation efforts in the tourism sector to achieve SDGs.

Therefore, to enhance the tourism industry's contribution to the achievement of the SDGs, decision-makers should promote sustainable practices and partnerships within the sector. This can be achieved through the following policy measures:

- **Developing sustainable tourism practices:** Governments and relevant authorities should collaborate with industry stakeholders to develop comprehensive guidelines for sustainable tourism practices. These guidelines should address environmental conservation, community involvement, preservation of cultural elements, and responsible business practices.

- **Incentives for sustainable tourism:** Decision-makers can introduce incentives, such as tax exemptions or grants, to encourage tourism businesses to adopt sustainable practices. These incentives can be tied to specific SDGs, such as promoting the use of renewable energy, reducing waste generation, or supporting local community development.

- **Capacity building and training:** Governments should invest in capacity-building and training programs to educate tourism professionals about sustainable practices. This may include training in environmental management, cultural sensitivity, community involvement, and responsible tourism marketing.

- **Encouraging public-private partnerships:** Policymakers should facilitate partnerships between public and private entities in the tourism industry to promote sustainable development. These partnerships can focus on joint initiatives for environmental conservation, community tourism projects, and corporate social responsibility programmes.

- **Knowledge sharing and research:** Policymakers should support research and knowledge-sharing initiatives in sustainable tourism. This may involve funding academic



research, supporting conferences and workshops, and facilitating collaboration between researchers, decision-makers, and industry practitioners. Promoting the exchange of best practices and evidence-based decision-making will continually improve sustainable tourism strategies.

The recommendations presented in the research are based on the results obtained and also take into account the Global Code of Ethics for Tourism issued by UNWTO, with a focus on Article 3 of the code on sustainable development practices in the tourism industry.

The ethical aspects of the research provide recommendations considering the four directions of the article related to the need to protect the natural environment for solid, continuous, and sustainable economic growth. It is also recommended to stagger tourist flows over time and space to reduce the pressure of tourist activity on the environment and increase its benefits. Furthermore, it is recommended to design tourism infrastructure to protect ecosystems and biodiversity by restricting tourism activity in highly sensitive areas.

By implementing these policy measures, governments can create a favourable environment for the tourism industry to adopt sustainable practices, reduce its environmental footprint, and positively contribute to local communities and the achievement of the SDGs.

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