Research Engagement on the Impact of Sustainable Practices in Tourism and Hospitality Industry: A bibliometric analysis

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Abstract. The integration of sustainable development practices has been widely popular in tourism and hospitality. Considering sustainability as a social commitment, it is mandatory to incorporate such practices into the system in a way to achieve sustainable development goals in a broader sphere. Scopus database was used to retrieve all existing and highly cited tourism and hospitality sustainability papers published from 2013-2023 that have been considered. The outcome of the study indicates that growth of research in sustainable tourism and hospitality has been remarkable with a total of 746 papers retrieved and after applying necessary filters 422 documents were considered. The findings reveal that proportion of research on tourism has increased tremendously over decade highlighting collaborations of authors within and outside country. The study carried out a thorough bibliometric analysis on impact of sustainable practices in tourism and hospitality which will help researchers, service users, and service providers to understand the growth in this field and the prerequisites responsible for implementing the art of sustainable practices in the experiential and digital era of tourism and hospitality industry. The need is to foster collaboration between governments, private sector entities, NGOs, and local communities. Also, the stakeholders need to work together to develop and implement sustainable tourism policies and practices, share best practices and lessons learned within the tourism industry. By analyzing this data, it identifies significant trends in sustainable practices within tourism research. Additionally the study covers uncovered areas in tourism industry.

Keywords: Hospitality, Sustainability, Tourism development, Bibliometric

1   Introduction

While Global tourism industry has faced challenges, like severe impact during peak of COVID-19, the top tourism destinations continue to be the favorite of travellers seeking

a blend of cultural, historical and natural experiences. The fluctuations in the industry have led to the emergence of concepts like spiritual tourism, culinary tourism, Ayurveda and Health tourism, Adventure tourism and event-based tourism. Various strategies have been formulated on three pillars i.e., economic, socio-cultural and nature and strengthening the impact of tourism on these pillars [1]. Various policies and strategies have been framed from time to time keeping these pillars as base. The implementation of these pillars greatly depends upon "responsibility" [2,3,4] which could radically change in tourism and hospitality industry progress. The notion of sustainable and responsible tourism (SRT) has valuable importance in tourism and hospitality industry [5]. The stakeholders i.e., visitors, industry, environment, and the local community help in increasing and promoting awareness about responsible tourism [6,7]. But sometimes this industry undergoes certain limitations that there overbalancing of pillars may fail to achieve quality of work life and other sustainability aspects [8].

Thus, the new agenda of 2030 or the development of SDG goals designed as an action plan or the document is Agenda 2030 that focuses on sustainable and effective future for all the stakeholders [9]

2   Review of Literature

There is a need to equate the commercial benefits of tourism with environmental and social responsibilities, creating a more positive and lasting impact on destinations and communities. It is a holistic approach that recognizes the interconnectedness of environmental, social, and economic factors in the tourism industry [10]. However, the attitude towards tourism in a way to mitigate the adverse impact of these activities on the environment, local cultures, and communities, while fostering economic and social assistance [11].

Sustainable tourism aims to ensure that tourism contributes to improve the quality of life for both current and future generations [12]. Hence, there is a need to Minimize the environmental impact of tourism activities, promote resource efficiency, waste reduction, and responsible consumption, protect natural habitats, biodiversity and ecosystems [13] In order to involve local communities in tourism planning and decision-making, empower local residents economically and socially through tourism, Foster cultural exchange and mutual understanding between tourists and local communities [14].

The need in tourism sector is to educate visitors and the community about the significance of sustainable practices and responsible tourism. In addition, the need is to promote environmental and cultural awareness among travelers apart from providing training for tourism industry stakeholders on sustainable practices. In this line, the need is also to implement measures to protect and conserve local flora and fauna, support wildlife conservation efforts and sustainable wildlife tourism and to encourage responsible behavior to minimize the impact on ecosystems and so on. But the sustainable tourism practices in tourism industry have vast potential and bright

prospects, still need to be explored through bibliometric analysis using VOSviewer [15] or Biblioshiny (R-tool) [16]. This study is an attempt to find out the answer to the research questions that emerged during the study-

RQ1: What is the publication trend in sustainable tourism?
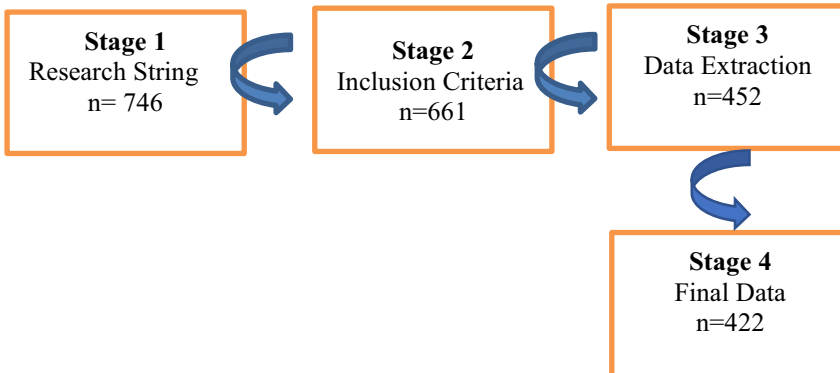RQ2: What is the citation trend in sustainable tourism practices?
RQ3: Which countries are bibliographically coupled in sustainable tourism publication?
RQ4: Which countries are co-authored in the publication journey of sustainable tourism?
RQ5: Which are the co-occurred keywords and their relevancy in the present scenario?

3   Research Methodology

Scopus database was used to retrieve all existing and highly cited tourism and hospitality sustainability papers published from 2013-2023 that have been considered. The results of the investigation shows that the research in the field of sustainable tourism and hospitality has been expanding remarkably with a total of 746 papers retrieved and after applying necessary filters 422 documents were considered. The study carried out a thorough bibliometric analysis on impact of sustainable practices in tourism and hospitality which will help researchers, service users, and service providers to understand the growth in this field.

Stage 1
Research String
n= 746

Stage 2
Inclusion Criteria
n=661

Stage 3
Data Extraction
n=452

Stage 4
Final Data
n=422

Year of Publication : 2013-2023	675	Document Type: Articles, Conference Papers & Book Chapter	574	Screening in accordance with	
Domain Area: Computer Science, Engineering, Business Management, Decision Science, Economics, Econometrics and Finance, Social Science, Psychology, Environmental Science	661	& Book Chapter **Language:** English **Source Type:** Journal & Conference Proceedings **Publication Stage:** Final	567 482 452	Title Abstract Complete text	422

Figure 1: PRISMA MODEL

4   Data Analysis

The fundamental patterns and trends in the research were thoroughly analyzed. By using co-citations or keyword co-occurrences, it is possible to determine the strength of the network connections between two articles, Zupic (2015). Further, the influence between two papers can be determined with the help of a common keyword, co-occurrences and co-citations attained [17]. Henry Small (1973) used the concept of Co-citation analysis for the very first time in his study as it enables us to understand the similarity of the chosen domain [18] The frequency of co-citation enables us to understand the level of association through co-citations between two papers, Yoon J. et.al. (2020) [19]. Furthermore, the creation of keyword co-occurrence network to have clear knowledge of the relevant areas of previously published review work.

4.1   Distribution of Publications by Year

The matrix plot of the year-by-year count of publications since 2013, the study period, is shown in Table-1& Figure 2. The matrix shows that while there were 70 research papers published and indexed with the Scopus databases in year 2023, the highest count was recorded from the sample in the year 2021. Only three items published in 2013, was registered in the category of sustainability in Tourism and Hospitality Industry.

Table 1: **Year Wise Publication Count**

Sr. No.	Year	No of Publications	Percentage of Publications
1	2013	3	0.71
2	2014	11	3
3	2015	6	1

5	2017	17	4
6	2018	22	5
7	2019	62	15
8	2020	61	14
9	2021	83	20
10	2022	74	18
11	2023	70	17

(Source: VosViewer)
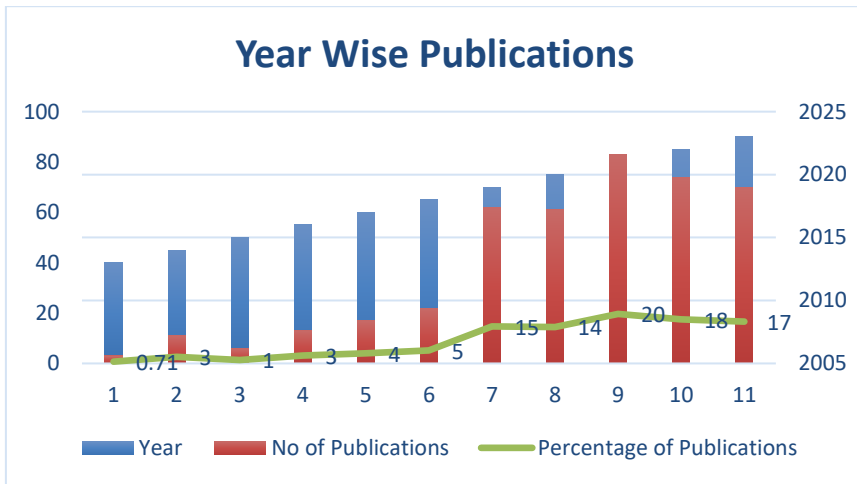
(Source: VosViewer)

Figure 2: Year Wise Publications

4.2   Word cloud

Figure 3 (a) demonstrates the word cloud of author's keywords. Keywords namely "Tourism", "Sustainable", "Hospitality", "Management", "Hotels", "Pandemic", Entrepreneurship", and "Industry". Figure 3 (b) depicts the high-frequency words such as "Tourism", "Sustainable", "Environmental", "Sustainable" and "Management" in the title of the word cloud. It essentially covers the areas like "Tourism", "Sustainable", "Hospitality", "Industry", "Tourist" "Economics "and, "Heritage".

Figure 3 (a): Word Cloud of author's Keyword Figure 3 (b): Word Cloud of Titles

4.3   Co-occurrence of all keywords

The co-existence of many terms related to sustainability, tourism and hospitality illustrates the pattern of study being done in light of these individuals' contributions to sustainability. The clusters represent the well-known subcategories of the research being conducted by the scientists with related fields of study. Figure 4 highlights the information on co-occurrence of all keywords. The network diagram that was obtained after entering all keywords included three clusters, and set threshold being restricted to 5, out of 2031 keyword 92 meet the threshold. The terms that are associated with the network by a certain color are those that the researchers are researching in their area of expertise. The most frequently used keywords are sustainability, tourism, hospitality, Sustainable Development, and Tourism Development with total link strengths of 840, 586, 263, 252, and 252, respectively.
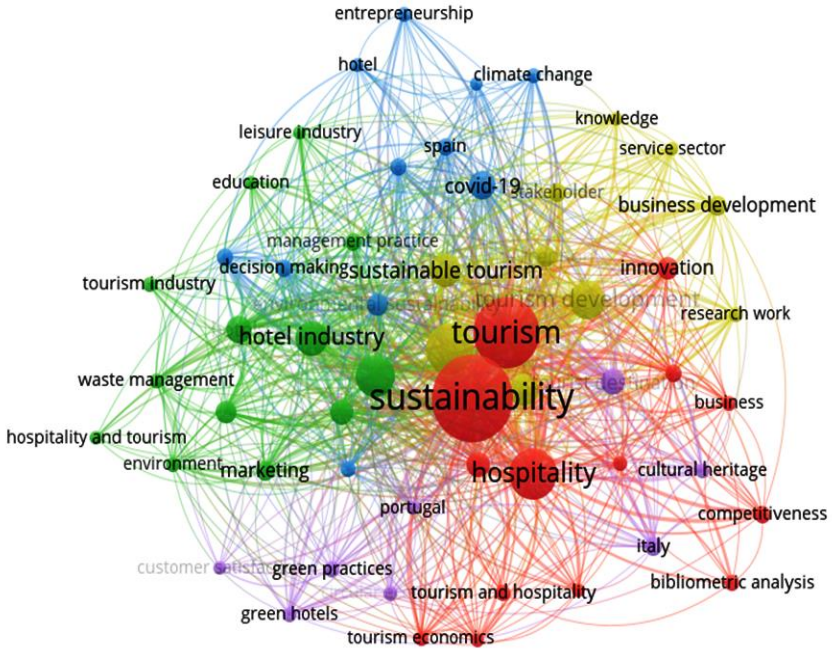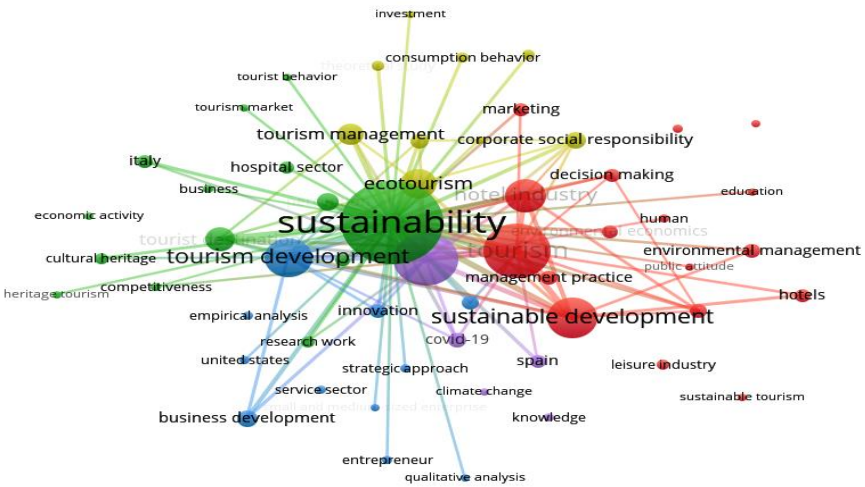
Figure 4: Co-occurrence of all Keywords

(Source: Vos Viewer)

4.4   Co-occurrence of indexed words

(Source: Vos Viewer)

Figure 5: Co-occurrence of indexed Keyword

Figure 5 depicts how frequently index keywords occur together. Each node contains a keyword mention and the lines show where the network-indexed keywords appear in the documents chosen for the study. The full count of the indexed keywords was used to retrieve the clusters that were visible in the network diagram with co-occurrence. In order to meet the requirement of 56 out of 814 keywords, it has been limited to five occurrences with 56 link strength. Tourism Development and Tourism were the next most frequently occurring indexed keywords after Sustainability.

4.5   Co-authorship with countries

Figure 6, mentions the joint work of several countries, Minimum no of documents of Country set to 10 out of 94 countries 19 meet the. Authors from China, Italy, Romania, South Korea, Turkey and United States are collaborating their research work with authors from Australia, Hong kong, India, Malaysia and Taiwan appearing in 1and 2 clusters, respectively.
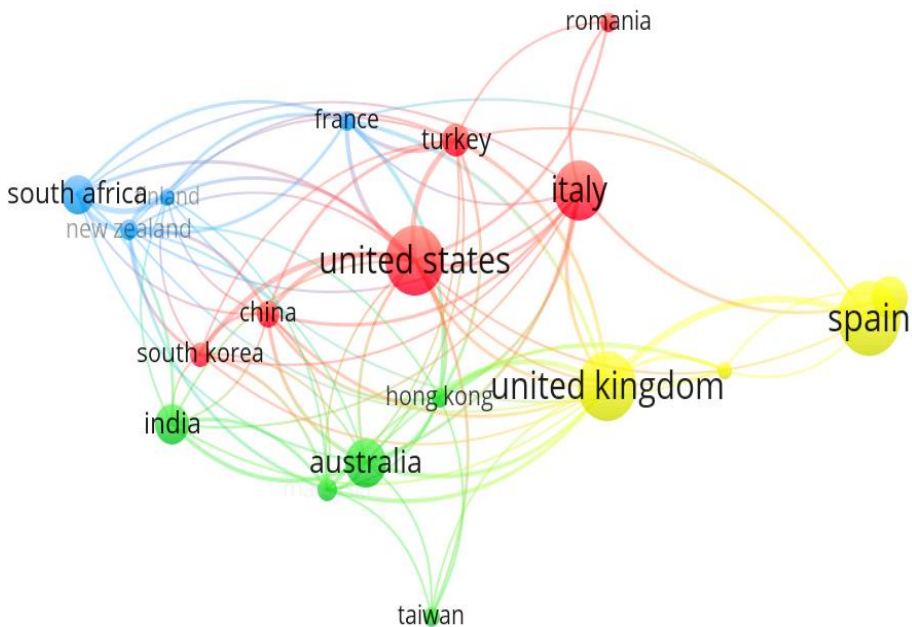
(Source: Vos Viewer)

Figure 6: Network: In co-arrangement with various countries

## 4.6   Bibliographic mode of coupling the documents
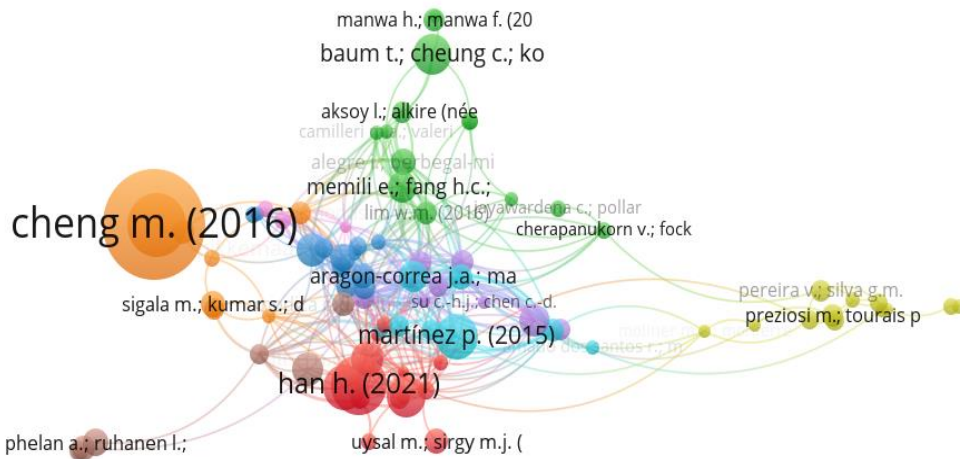
(Source: Vos Viewer)

Figure 7: Bibliographic system of coupling of various documents

The network diagram of text bibliographic linkage is shown in figure 7. When at least ten documents were cited, the threshold of 181 out of 422 was established. Cheng m.'s research papers from 2016 garnered 602 citations, Tussyadiah papers from 2018 received 249 citations, and Han h.'s papers from 2021 have so far received 229 citations.

4.7   Bibliographic coupling of countries

As per Figure 8, five documents at the most per country were allowed on the network. Spain was the top-ranking nation with 51 published documents and 1093 citations, next to this being the UK and United States having 47 docs and 1126 citations, 1264 citations respectively and authors from Italy contributed the third-most publications with 40 documents and 799 citations.
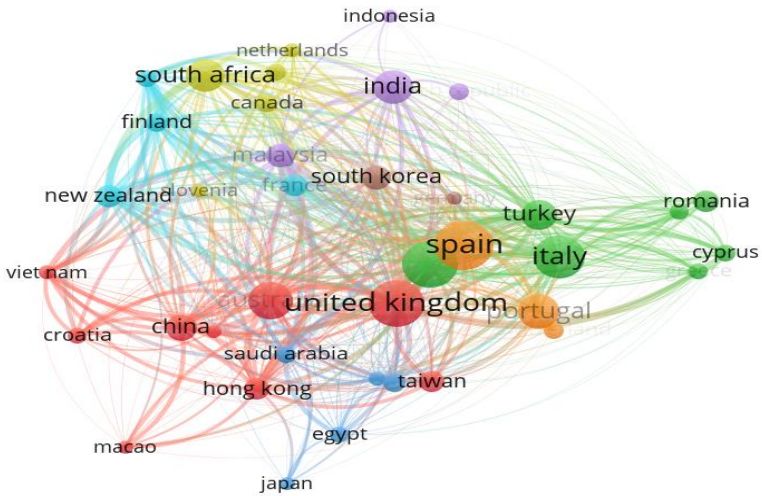
(Source: Vos Viewer)

Figure 8: Bibliographic system of coupling various countries

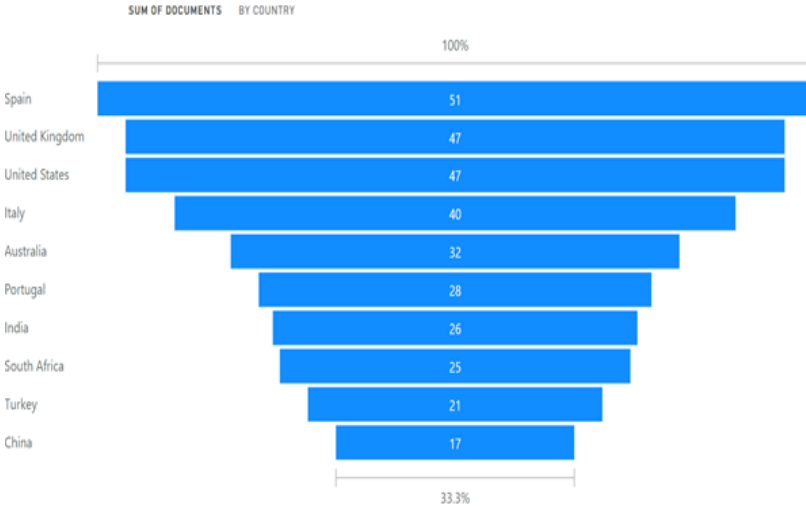## 4.8   Bibliographic system of coupling various countries

Overlay visualization of co-authorship presented in figure 9 depicts the fact that country wise number of documents and citations. It was found that Australia being highest citations i.e., 1349, second being USA with 1264 and United Kingdom with 1126 citations respectively, whereas India is also relatively young in this field and has least number of citations 365 concerning sustainable practices in tourism and hospitality industry, the tireless effort of Indian authors being rewarded.

Table 2: - No. of Documents and Citation by Country

Serial Number	Country	Documents	Citations
1	Spain	51	1093
2	United Kingdom	47	1126
3	United States	47	1264
4	Italy	40	799
5	Australia	32	1349
6	Portugal	28	377
7	India	26	365
8	South Africa	25	467
9	Turkey	21	570

| 10 | China | 17 | 479 |

(Source: Vos Viewer)

SUM OF DOCUMENTS   BY COUNTRY

Country	Documents
Spain	51
United Kingdom	47
United States	47
Italy	40
Australia	32
Portugal	28
India	26
South Africa	25
Turkey	21
China	17

(Source: Vos Viewer)

Figure 9 - No. of Documents by Country

4.9   Country Wise Publication

Table 4.9 highlights country wise number of collaborated articles which reveals that Spain has total 40 articles on tourism and hospitability and out of it 27 articles belong to Spain solely and 13 articles with other multiple countries. UK ranked second with total 26 articles and out of it 10 are publications within UK and 16 are outside UK which clearly shows that researcher do collaborate for research in the field of hospitality and tourism.

Table 3: Country wise Publications

**SCP-Single Country Publication   MCP-Multiple Country Publication**

S.No.	Country	Articles	SCP	MCP	Freq
1.	Spain	40	27	13	0.095
2.	UNITED KINGDOM	26	10	16	0.062
3.	USA	26	15	11	0.062
4.	ITALY	25	20	5	0.059

5.	PORTUGAL	19	15	4	0.045
6.	CHINA	18	9	9	0.043
7.	AUSTRALIA	16	12	4	0.038
8.	INDIA	15	11	4	0.036
9.	TURKEY	11	4	7	0.026

(Source: Vos Viewer)

4.10   Three-plot Diagram

Sankey diagram represents three parameters to be related (journal, author, and keyword) are specified by the software in this "Three-Field Plot" layout, Figure 10 shows the most important ones for each parameter. The box sizes in Figure 10 show the strength of the relationship between the components. The size of the boxes in this graphic corresponds to the literature's influential characteristics. The leading journal is "worldwide hospitality and tourism themes", the leading author is "berjozkina.g" and the leading keyword is "sustainability"
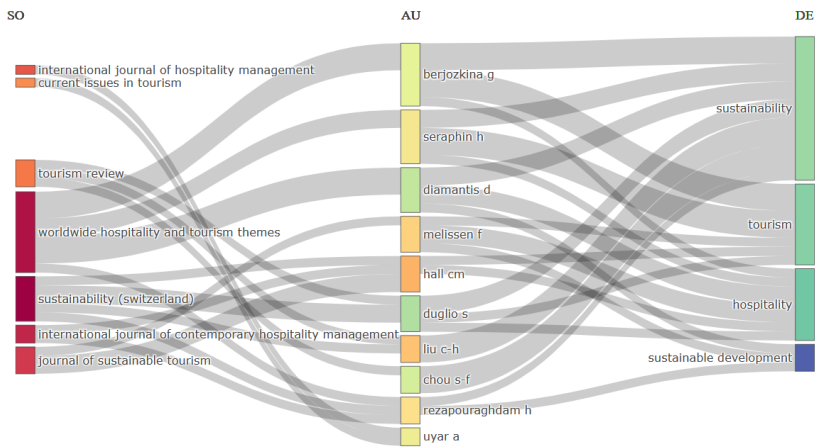
(Source: Vos Viewer)

Figure 10- Three Plot Diagram

5   Conclusion and Discussion

While the paper has shed light on the difficulties that travel and tourism sector faces, it also highlights the potential for positive transformation. Through education, awareness,

and collaboration, stakeholders—ranging from governments and businesses to local communities—can work together to shape a more sustainable and resilient tourism sector.

The prominent research scholars and authors from China, Italy, Romania, South Korea, Turkey and United States are collaborating their research work with authors from Australia, Hong kong, India, Malaysia and Taiwan to explore the aspects of sustainable practices in tourism and hospitality. Research work of authors namely Cheng (2016) followed by Tussyadiah (2020) and Han h. (2021) will be helpful for service providers of hotel and tourism industry to incorporate sustainable practices and thus widening new horizons to strengthen their strategic practices and thus contributing towards sustainable development goals.

This study adds to the continuing dialogue on sustainable tourism, providing insights that can inform future policies, practices, and endeavors within the dynamic and evolving world of travel. In moving forward, it is imperative for policymakers, industry players, and tourists alike to embrace a shared responsibility for the well-being of our planet and its diverse cultures. As destinations evolve to meet the demands of an ever-growing tourism sector, the principles of sustainability must remain at the forefront of decision-making processes. By doing so, we can foster a tourism industry that not only satisfies the desires of travelers but also preserves the integrity of destinations for generations to come.

In conclusion, this research paper has delved into various dimensions of tourism, examining its multifaceted impacts on the environment, local communities, and economies. Through an exploration of sustainable tourism practices, it becomes evident to find a balance between the tourism industry's economic benefits and protections of natural resources and cultural heritage.

6   Future Study

The study aims to help researchers, service providers for a broader understanding and selection of use of sustainable methods that can potentially improve decision making in tourism industry. The results offer practical enlightenment for government tourism destinations and hospitality organizations. Further, for analyzing the meta data documents from web of sciences can also be considered for future studies and more keywords like "responsible tourism" etc. can be used.
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