Evaluation of sustainable development and travel agencies within the scope of Agenda 2030: A bibliometric analysis

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Abstract: A bibliometric examination of sustainable development and travel agency research from 1997 to 2021 was used to uncover intellectual frameworks, developing trends, and future research prospects. CiteSpace was used to do a comprehensive search of 302 core articles from Web-of-Science and to analyze the results. The findings showed a normal growth in the amount of research, with major study topics. The articles with the most citations are mostly from the last 15 years. The USA has a solid leadership in publications, followed by Taiwan and Sweden. The network of authors shows a core structure on the margins where the European Commission and Bucharest University Economy Studies are ranked first. The discovery of structural flaws, the publication of critical papers, and the emergence of new emerging trends emphasize the priorities in the sustainable development and travel agency domains, pointing to new study prospects. This research is unique in that it performs a temporal and dynamic analysis of the last 24 years utilizing CiteSpace to analyze co-citation and co-occurrence networks.

1. Introduction

The United Nations General Assembly established the Sustainable Development Goals (SDGs), as part of the 2030 Agenda for Sustainable Development, it was adopted in 2015. While their predecessors, the Millennium Development Goals, were successful in addressing issues such as poverty, gender inequality, and disease, the SDGs were developed in response to the realization that more could be done "to integrate the economic, social, and environmental aspects of sustainable development" (Armitage et al., 2020; United Nations, 2021a; 2021b). As a result, the 17 SDGs encompass a wide range of topics and include interconnected aims aimed at encouraging action for people, planet, prosperity, peace, and cooperation (United Nations, 2021b).

Sustainable development techniques and goals are constantly being enhanced and developed under the guidance of the theory of sustainable development (Shi et al., 2019). Various local, national, and global stakeholders are involved in sustainable tourism development, including governments, non-governmental organizations, tourism industry sectors, host communities, tourists, academia, and the media (Swarbrooke, 1999; Ellis and Sheridan, 2014; Nguyen et al., 2019). The importance of stakeholders and their identification for tourism organizations and destination governance is emphasized by stakeholder theory (Khazaei et al., 2015). In order to manage the resilience of tourism-based socio-ecological systems, it is necessary to measure sustainability (Lacitignola et al., 2007). This is especially important in industries where tourism and travel activities are bolstered (Petrosillo et al., 2006; 2007). Since tourism has become a major economic force in many countries in recent years, the need for a long-term paradigm for this industry has evolved (Sgroi, 2020).

In fact, tourism is mentioned explicitly in three of the 17 declared sustainable development goals. SDGs 8, 9 and 13 in particular have a strong link to the tourism and travel industry. Goal 8: Encourage long-term, inclusive, and sustainable economic growth for all people, as well as full and productive employment and decent work for all. Goal 9 calls for resiliency in infrastructure, equitable and sustainable industrialization, and support for innovation. Goal 13: Take prompt action to mitigate the effects of climate change (United Nations, 2021c).

Travel agencies serve as a mediator between tourism suppliers and customers, and their purpose is to operate primarily in their clients' best interests when dealing with suppliers (Holma, 2009; Aguiar-Quintana et al., 2016). General travel agencies (GTAs) and tour operator travel agencies (TOTAs) are two types of travel businesses that can plan and sell package trips and act similarly to tour operators in larger countries. GTAs differ from TOTAs in that they can sell TOTAs package tours and have a much larger business. Travel agencies, as other experts have pointed out, play a crucial role in influencing customer travel decisions (Font and Cochrane, 2005; Sung et al., 2021). To deliver unique travel products and increase performance, travel businesses must first understand the needs of travellers (Özgener and İraz, 2006; Ben Aissa and Goaied, 2017; Al-Kwifi et al., 2019). Furthermore, travel agencies should regard the construction of low-carbon tours as a chance to strike a balance between profit and environmental conservation by leveraging their distribution channel advantages in order to improve their performance.

As a result, researchers and administrators in the tourism and hospitality industries will be interested in the current study. The essential subjects and present dynamics of "sustainable development" and "travel agency" in tourism are identified in this study. In addition, future research directions for Agenda 2030 are discussed. We'll look at publication patterns, significant journals that publish research on the topic, the most influential authors, and the nations that focus the most on research in the tourism industry on "sustainable development" and "travel agency" to round out the study. The summary will be useful to future scholars because it will aid them in locating the most relevant sources and articles. Identifying a pattern of shared knowledge (and, if applicable, a network) will also help the researchers decide where to seek more financial or research support. Using themes to create a consistent structure will aid in identifying potential study gaps in past studies. It aids in recognizing the prominent theories, traits, context, and strategies associated with the theme. Finally, researchers will be able to identify future study priorities by combining and clustering like tendencies in the literature. As a result, the following research issues will be addressed using bibliometrics:

RQ1. What is the most recent study trend in hospitality and tourism in terms of "sustainable development" and "travel agency"?

RQ2. Which sources and contributions to the existing literature are the most significant and impactful?

RQ3. What are some of the most influential articles in this field?

RQ4. What are the most prevalent categories and keywords in this field of study?

RQ5. How has the theme's research progressed over time?

RQ6. What are the prospects for additional research in this area?

2. Materials and Methods

The required material was obtained from Web of Science's core collection database in January 2022 to investigate the progression of knowledge in the disciplines of "sustainable development" and "travel agency." Only a handful of the databases accessible include Social Science Citation Index (SSCI), Art and Humanities Index (AHCI), Scientific Citation Index Expanded (SCIE), and Emerging Sources Citation Index (ESCI). Because it is a commonly used standard for analyzing the international impact of academic disciplines and publications, Web of Science's core collection database was chosen (Gonzalez et al., 2020). While using multiple databases has its advantages

(Khoo-Lattimore et al., 2019; La et al., 2021; Thakur et al., 2021), researchers can use the Web of Science database to focus on key research accomplishments in an area, investigate more complete co-citation networks, and uncover research directions that are of interest to senior academics

The terms "sustainable development" and "travel agency" were used in the search. The study period was chosen as 1997-2021 because bibliometrics usually employ data from the entire year (e.g., Prayag and Ozanne, 2018; Sánchez-Pérez et al., 2021), and the first publication that satisfied the inclusion criteria was published in 1997. After removing extraneous documents, there were 302 articles found (66 proceedings papers, 5 early access, 7 book chapters, 13 review articles, and 21 others). The review strategy is depicted in Figure 1. Knowledge mapping analysis is used to examine the obtained literature data (countries/regions, journals, authors, keywords, and categories) for the goal of the study. Because of its strength and effectiveness, as demonstrated by past studies, visual knowledge mapping is done with CiteSpace software. (Wang et al., 2020; Zhang et al., 2020; La et al., 2021).

This study intends to provide an in-depth review of "sustainable development" and "travel agency" phrases in terms of themes, authors, the influence of its published journals, and keywords, using a variety of bibliometric approaches.
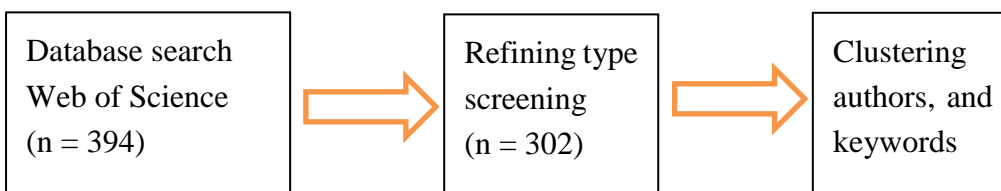

Figure 1. The review strategy

CiteSpace is a piece of scientometric software that may be used to visualize knowledge domains. When compared to previous visualization tools, it has improved the clarity and interpretability of visualizations with a variety of visual analytic capabilities. On the same screen, users can choose the time range for the literature, select nodes, and establish thresholds. CiteSpace visualization graphs are comprised of nodes and linkages. Authors, countries, phrases, keywords, categories, cited authors, cited references, cited journals, grants, and articles are examples of nodes (Chen, 2006; Fang et al., 2018).

3. Results

Figure 2 shows the trend of papers written on "sustainable development" and "travel agency" over a 24-year period from 1997 to 2021. Between 1997 and 2008, just a few publications were published, as seen in Figure 2.
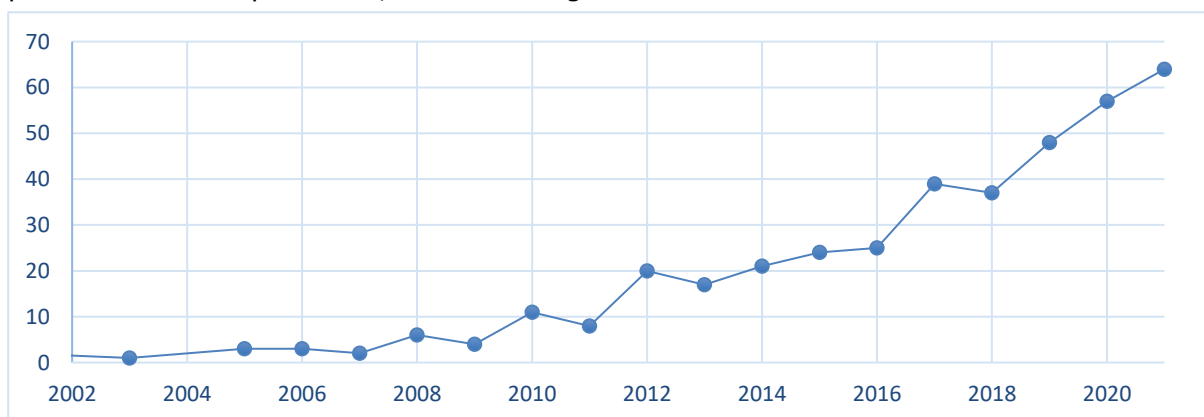
Figure 2. The number of published papers between 1997-2021

In terms of network collaboration (nation and author), analysis of co-citation (journal, author, and document), and recent trends, the following section presents bibliometric analysis of research on "sustainable development" and "travel agency" (keywords and categories).

3.1. Collaboration networks

One of the essential elements of this interdisciplinary study is collaboration (Su et al., 2019). Research collaboration, according to Katz and Martin (1997), is the process by which researchers team together to create new scientific knowledge. In order to gain a better understanding of academic communication and knowledge dissemination, cooperation analysis is required (Chen, 2006). Through the use of cooperation analysis, the exchange of scholarly information among authors and countries is monitored (Zhang et al., 2020; Sahin and Yilmaz, 2021).

3.1.1. Author collaboration networks

How thick the linkages are denoting the extent of author cooperation, while the size of the nodes represents the total number of publications by a particular author. The multidisciplinary nature of the field is obvious when an author's cooperation network includes a significant participant count and a diverse variety of cooperation (Fang et al., 2018; Liu et al., 2019; Sahin and Yilmaz, 2021).

As a result, the multidisciplinary nature of "sustainable development" and "travel agency" is demonstrated by the presence of various authors and partnerships in our research findings (Figure 3). The most prolific authors on "sustainable development" and "travel agency" are Neala Ambrosirandic, Liewi Hsu, Moira Kostic Bobanovic, and Cori Jakubiak, followed by Melba Lilia Triana Palma, L Makra, Jafar Mohammad Batiha, and Michael CG. Davidson. These authors are the most productive since they concentrate on their areas of expertise, such as tourism, travel agencies, sustainability, and travel.

Here are several examples: Huang, L. (2006). Building up a B2B e-commerce strategic alliance model under an uncertain environment for Taiwan's travel agencies, Aguiar-Quintana et al. (2016). How could traditional travel agencies improve their competitiveness and survive? A qualitative study in Spain, Picazo and Moreno-Gil (2018). Tour operators' marketing strategies and their impact on prices of sun and beach package holidays, Baicu and Popescu (2014). The responsibility of organisations towards customers. case study-Romanian travel agencies, Hsu et al. (2020). Developing a Muslim tourism market: the perspective of travel agencies.
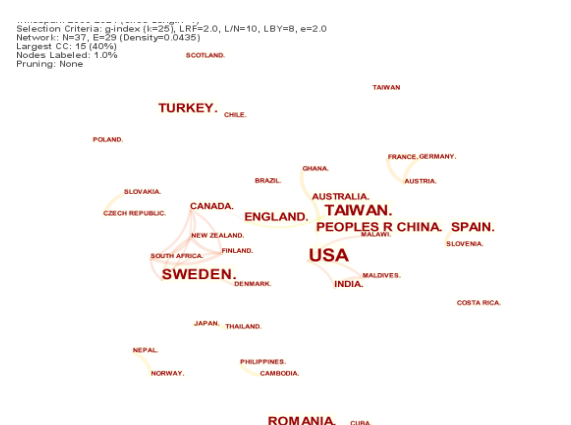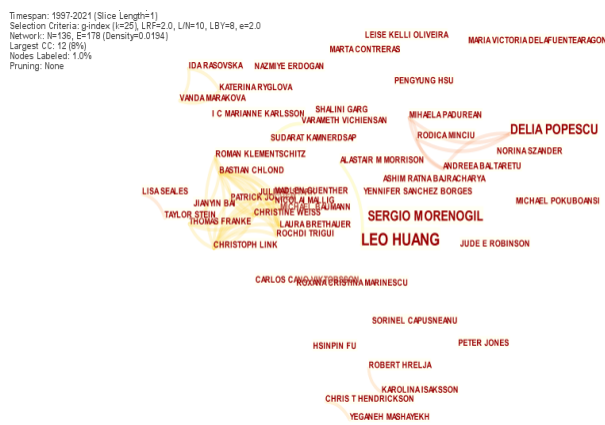

Figure 3. Author collaboration network   **Figure 4**. Country collaboration network

3.1.2. Country collaboration networks

The study of country collaboration reveals international collaboration as well as the distribution of leading nations in the industry (Liu et al., 2019; Sahin and Yilmaz, 2021).

In the current study, the evaluation of cooperating countries showed 37 nodes and 29 links (Figure 4). Table 1 also includes the number of publications and frequency of publication for the top 10 most productive countries. The United States, Taiwan, and other countries appear to have collaborated more closely based on the quantity and thickness of links connecting the nodes. With a far higher number of articles (n=8) than the other countries, the United States claimed top position. After the United States and Taiwan, Sweden and Turkey are the largest contributors.

Table 1. Countries in collaboration

| Rank	Country	Freq.	Year	Rank	Country	Freq.	Year
1	USA	8	2005	6	ROMANIA	4	2010
2	TAIWAN	6	2012	7	PEOPLES R CHINA	4	2019
3	SWEDEN	5	2013	8	ENGLAND	3	2012
4	TURKEY	4	2012	9	INDIA	2	2014
5	SPAIN	4	2016	10	CANADA	2	2013

3.2. Co-citation analysis

The frequency with two publications that are connected material (like as a journal, document, or author) are cited by other authors is known as "co-citation" (Small, 1973). Thus, co-citation analysis is a helpful technique for assessing a substantial body of literature and defining the conceptual framework of a scientific field (Ramos-Rodriguez and Ruiz-Navarro, 2004; Sahin and Yilmaz, 2021). The co-citations of papers, authors, and journals are investigated in this study.

3.2.1. Article co-citation network

Article co-citation analysis can reveal the study domain's underlying intellectual structure and the authority of references mentioned in publications. Each node represents an article and is tagged with the name of the initial author and the year of publication. The co-citation relationship between the two articles is shown by each link. The node size is a representation of the node article's co-citation frequency. Larger nodes, in contrast, display documents that have received several academic citations (Yu et al., 2019; Zhang et al., 2020; Sahin and Yilmaz, 2021). Furthermore, each node represents a record and is labelled with the name of the initial author and the year of publication, while each connection symbolizes the co-citation relationship between the two articles. The frequency of node sizes was employed in this study to identify many of the most referenced publications in the disciplines of "sustainable development" and "travel agency". As shown in Figure 5, the document co-citations network between 1997 and 2021 had 50 nodes (references cited) and 10 linkages (co-citation links). More precisely, Hall et al. (2013), Huang, L. (2006), and Aguiar-Quintana et al. (2016) received 74, 44, and 28 citations, in order of, and were in the top three ranks.

Figure 5. Co-citation articles links
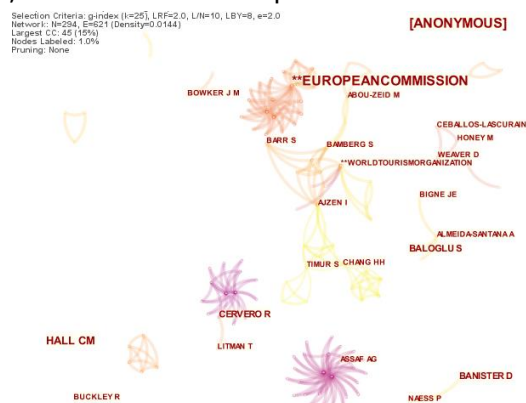
Figure 6. Co-citation authors links

3.2.2. Author co-citation network

In order to determine the evolution of a study topic, author co-citation analysis establishes and proves which publications have been cited by the same papers. This method may be used to find out not just distribution of authors who are frequently mentioned, but also the impact of researchers on a particular topic (Yu et al., 2019; Sahin and Yilmaz, 2021). Author co-citation analysis, on the other hand, gathers all of an author's publications into a single document, with just the first author taken into account (Fang et al., 2018).

Collaboration between academics from many disciplines is critical for the advancement of research subjects like "sustainable development" and "travel agency" studies (Zhang et al., 2020). Figure 6 shows the author co-citation network, which enhances to the literature on "sustainable development" and "travel agency" and contains 294 nodes and 621 co-citation relationships. The links between different authors represent indirect collaborative relationships based on co-citation frequency, and the size of each node indicates the frequency of co-citations for each author (Yu et al., 2019). The first three authors, European commission, [Anonymous] and Hall received the most citations and made significant contributions to the study of "sustainable development" and "travel agency". In this sense, there is a substantial correlation between the top ten most referred authors and their prolific production.

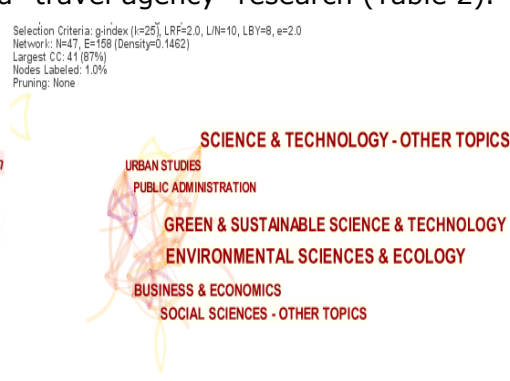### *3.3. Emerging trends analysis*

Keywords are a sure evidence that you've read the study paper, and a category analysis of document co-citations can provide information that's been identified by the researcher (Fang et al., 2018; Liu et al., 2018). As a result, evaluating keywords with co-occurrence, time zone, clustering, and documents co-citation category can reveal the evolution of hot subjects and developing trends in tourism demand forecasting study (Zhang et al., 2020). Identifying the development of present problems and emerging trends in "sustainable development" and "travel agency" research, the current study's keywords and categories were reviewed.

3.3.1. Keywords co-occurrence network

The use of keywords is a crucial indicator of an article's topic concentration. By using keyword co-occurrence analysis, one can locate the frontier of a study problem and spot changing trends over time. The size of the node indicates how frequently a keyword appeared in the WoS dataset (Liu et al., 2019; Yu et al., 2019; Zhang et al., 2020; Sahin and Yilmaz, 2021). There were 209 nodes and 478 linkages in the network of co-occurring phrases (Figure 8). Sustainable development, sustainable tourism, and travel were the top three high-frequency phrases. These findings imply that these keywords are linked to a variety of research subjects and have a substantial influence on the development of "sustainable development" and "travel agency" research (Table 2).
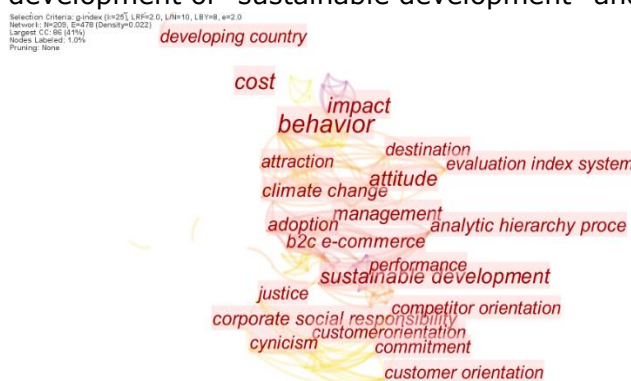
Figure 8. Keywords links network   **Figure 9.** Category co-occurrence

Table 2. Keywords top 10

Rank	Top 10 Keywords	Freq.	Year	Rank	Top 10 Keywords	Freq.	Year
1	Sustainable Development	6	2005	6	Corporate Social Responsibility	3	2012
2	Sustainable Tourism	6	2012	7	Transport	3	2020
3	Travel	5	2013	8	Management	3	2012
4	Behavior	4	2016	9	Impact	3	2006
5	Travel Agency	4	2006	10	Developing Country	2	2013

3.3.2. Category co-occurrence network

In addition to keyword analysis, category co-occurrence analysis is an important tool for locating the primary content of publications (Zhang et al., 2020; Sahin and Yilmaz, 2021). Analyzing category evolution maps might help you find developing trend research in a specific subject field. Figure 9 shows a network of category co-occurrences. This graph comprises 47 nodes and 158 connections, meaning that there were 47 keywords connected by 158 lines. Social sciences – other issues, environmental sciences and ecology, and science and technology – other topics are the top three essential domains in "sustainable development" and "travel agency". These findings indicate that social science is more involved in "sustainable development" and "travel agency" research.

4. Discussion

Comparing the results of the study with SDGs; tourism is mentioned explicitly in three of the 17 declared sustainable development goals. SDGs 8, 9 and 13 in particular have a strong link to the tourism and travel industry. Goal 8: Many developing countries have made tourism a top priority in their national development plans in order to boost tourism's contribution to poverty reduction and local socioeconomic effect. With the aid of donors and development organizations, they are working to plan and execute measures to increase tourism's contribution to poverty reduction (UNWTO, 2013: 14). As the United Nations has previously stated, long-term and sustainable economic development must be assessed in a broader context. The lack of attention on employees in the study's conclusions is considered as a noteworthy result, especially given the importance of sustainability for all people. It is vital to examine the need for better working conditions for employees, as well as the necessity for this to be long-term. However, Baum et al, (2016) emphasized that the sector cannot be viewed as providing sustainable employment. Tourism institutions, the tourism academy and tourism organizations are unwilling to commit to changing the status quo. Concerning tourism development, perhaps the outcome in terms of poverty reduction will not be determined by structural disparities inside the tourism system (Erskine and Meyer, 2012). However, the organizational structure of travel agencies will probably make an equally important contribution to the prevention of this poverty.

Travel agencies must also collaborate with other stakeholders (academic institutions, hotel businesses, and so on) to determine what should be done regarding long-term business potential. Each actor can be formed differently in different tourismscapes using different ways of ordering. As a result, when the purpose of ordering is to promote the attainment of a certain sustainable development goal, actors can be redefined and new functions relevant to achieving sustainability goals can be assigned through translation procedures. This framework is directly focused on sustainable development goals, as it tries to network and stimulate broad stakeholder participation and the stakeholder theory. This is one of the core goals of the United Nations Sustainable Development Goals, and it refers to the importance of partnerships in achieving the goals (Nguyen et al., 2019). There are a number of obstacles that the private sector must overcome in order to contribute productively to economic progress

(Birendra et al., 2021). Furthermore, it is important to note that the concept of sustainable development encompasses not only economic theory but also ethical and philosophical theory (Kozień, 2021). Tourism intelligence can help define methods for better balancing and managing tourism flows, as well as compensating residents, reducing tourism demands on popular locations, and mitigating potential tourism damage (Pardo, 2018).

Goal 9: By 2030, upgrade infrastructure and retool industries to make them more sustainable, with improved resource efficiency and increased adoption of clean and environmentally sound technologies and industrial processes, with all countries acting in accordance with their respective capacities. Within the scope of academic studies, it is believed that the emphasis on all countries is narrower in this part, and that this situation should be enlarged. By 2030, all countries, particularly developing countries, should improve their scientific research and industrial sector technological capabilities, with a focus on encouraging innovation and significantly increasing the number of research and development workers per million people, as well as public and private research and development spending. It's also thought that there's a discrepancy in the findings of innovation studies. The importance of innovation should be emphasized more. Increased efforts are needed, in particular, to harmonize the sectoral advances of travel agencies in terms of innovation with the academia. It is important to note that current digital technology penetration has accelerated the flow processes of economic activity and human functioning, as well as created resource management risks, necessitating the development of a new development paradigm within the framework of institutional and evolutionary economics theory (Savin, 2021). Large and public enterprises around the world have a critical role to play in attaining the UN's 2030 Agenda for Sustainable Development. Using the economic power wielded by private sector digital multi-national corporations to engage in Corporate Social Responsibility activities outside of the United States and Europe, as well as in less developed countries and struggling regions, will help to achieve UN 2030 Sustainable Development Goal 9 and bridge the global digital technology divide (Denoncourt, 2020).

In this context, we must strengthen basic theoretical science and technology research, as well as thoroughly investigate the application of this technology in the sustainable development of natural resources, identify the root causes, and provide a solid research foundation and accurate practice guidance for the widespread use of related technologies (Quan et al., 2021). In general, the hotel and tourism industries are confronted with new difficulties that necessitate mastering current technology in order to transform data into knowledge and assist not only reactive but also proactive managerial decision-making. Data science provides both the quantitative and analytic methodologies that are required to address the sector's and the macro environment's ongoing difficulties. Because of the massive amounts of data generated by the internet, social media, and mobile devices, it is critical that businesses and destinations identify big data and promote mining tools to analyze it and so fully exploit its business potential (Costa et al., 2018).

Goal 13: Improve climate change mitigation, adaptation, impact reduction, and early warning education, awareness, and human and institutional capability. According to ecological theory, because of their resilience or resistance, the various layers of natural order have some degree of self-regulation (Reynolds, 2002; Dyke and Weaver, 2013; Ruggerio, 2021). This ability of natural systems does not imply independence from their surrounds, but it does allow for the delimitation of processes of interest for research or even management at territorial sizes. Analyzing sustainability at small scales becomes more important when this is taken into account (Ruggerio, 2021). There are unlikely to be any substantial advances in terms of drastically reducing tourism's energy use by 2030. Government pressure, environmental activism, and even general consumer criticism may induce a reduction in travel, but this is unlikely to be significant by 2030 in most regions of the world (Butler, 2018). Thus, it can be suggested, in particular,

studies should be developed within the scope of the notion of learning organization in travel agencies, which can help businesses as well as individuals advance faster.

Despite a surge in publications related to "sustainable development" and "tourism agency" there are still significant gaps in this subject. The scientific and technology sector has received minimal attention in studies on "sustainable development" and "tourism agency". If the 2030 targets are to be met, more extensive cooperation is anticipated to be necessary. Large travel agencies, for example, are powerful players in the sector with the ability to encourage more sustainability and more inclusive types of tourism. However, if additional coercive institutional forces, such as laws, rules, and incentives, are not established to hasten this process, the mass tourism industry risks sustaining a limited adoption of inclusive practices (Campos et al., 2018). Tourism's future must be shaped by issues and governance processes that are democratic, inclusive, just, ecologically friendly, and hence sustainable. As a result, our analysis demonstrates how this critical framework aids in examining and influencing how the UN SDG agenda is implemented in the travel sector. Despite the fact that the theory of sustainable development has been widely pushed, many theoretical and methodological challenges related to sustainable development remain unsolved in practice. Although individual travel agencies should acknowledge the notion of strong sustainability, the practice of weak sustainability persists (Shi et al., 2019). Travel agencies have greater obligations and guidelines to apply the context and activities as a result of integrations and improvements. It is up to us to have a deliberate, mindful approach in order to fully appreciate travels while also preserving the natural and constructed heritage for future generations, based on the ideals of equality, sustainability, and mutual respect.

This study, like all others, has its own set of limitations. To begin, the sample for the paper was limited to papers that were indexed in the WOS database. Other databases, such as Scopus, should be used in future research because fresh studies on "sustainable development" and "travel agency" are expected to be published in other databases. Second, the sample for this study consisted solely of academic articles. Future studies could include books, book reviews, conference proceedings, theses, and a variety of other bibliometric units because any bibliometric unit can be subjected to bibliometric analysis. As a result, future research can expand on the current study's breadth by merging other databases and articles to create a more comprehensive knowledge map for the disciplines of "sustainable development" and "travel agency". Finally, researchers can cluster, analyze, and display data using a variety of analytic and visualization software, such as VOSviewer.

5. Conclusions

In the study, a bibliometric analysis of sustainable development and travel agency research from 1997 to 2021 used to uncover intellectual frameworks, developing trends, and future research prospects. This study uses a scientific visualization analysis methodology to visualize the 302 articles. Scientometric analysis (i.e., CiteSpace) was combined with co-citation analysis, collaboration network analysis, and emerging trends analysis to generate an integrated knowledge map of the tourism demand forecasting industry and to uncover hot themes with developing trends (Zhang et al., 2020).

Three basic conclusions are derived based on the analysis method. First, research on "sustainable development" and "travel agency" has increased greatly since 2008, according to statistical data from 1997 to 2021. As a result, investigations demonstrate that publications published before 2008 created the theoretical groundwork for "sustainable development" and "travel agency" study. It might be argued that the increase in research after 2008 is due to a global increase in the importance of sustainability at the same time. Second, the United States, Taiwan, Sweden, Turkey, and Spain lead studies on "sustainable development" and "travel agency," with each country having the most productive writers. It is anticipated that investigating why these countries are at the forefront of "sustainable development" and "travel agency"

businesses will be critical. It will also be an essential research issue to see if these countries' interest in tourism indicates that they are more concerned about long-term development. Third, the European Commission (6 citations), [Anonymous] (6 citations), and Hall, C.M. are the most cited writers (4 citations). The causes for the limited number of specific authors can be investigated, and it is advised that more specific authors, rather than institutional and multiple writers like the European Commission and Anonymous, should be investigated. In terms of growing trend analysis, the most generally used keywords in the sectors of "sustainable development" and "travel agency" are sustainable development, sustainable tourism, and travel. Furthermore, it is clear that themes such as Green and Sustainable Science and Technology, as well as Business and Economics, have gotten a lot of attention in this field over the last five years. The most prevalent research on "sustainable development" and "travel agency" are found in the categories of Social Sciences – Other Topics, Environmental Sciences and Ecology, and Science and Technology – Other Topics, according to category co-occurrence.

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