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Sustainable Tourism: A Systematic Literature Review and Bibliometric Analysis

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Abstract: The research aims to emphasise the significance of sustainable tourism and the topics it's being associated with. It is also intended to analyse the shift in literature during the selected time. A bibliometric analysis was conducted on highly cited documents about the Topic "sustainable tourism" from 2017 to 2022, using the Web of Science database. The analysis involved examining the number of research papers, their respective journals, co-authorship, country of origin and keywords. The keywords "sustainable tourism", "covid-19" and "tourism" were used more frequently in the 50 articles collected. The majority of the articles were published in 2020 and 2021, coinciding with the pandemic, which demonstrates the emerging focus on sustainability given by researchers in this period. By relying on a specific database and specifically selecting highly cited papers, the study was limited. However, preferring these papers aligns with the goal of this research. The literature review synthesises the themes and perspectives from different authors and the relevance given to sustainable tourism due to the COVID-19 pandemic. It identifies key trends and viewpoints in the field while recognising its limitations and provides visual information on the topic.

Keywords: COVID-19; development; tourism planning; sustainable tourism; sustainability; bibliometric analysis

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1 Introduction

The year 2017 was named the International Year of Sustainable Tourism for Development during the United Nations 70th General Assembly. This categorisation intends to raise worldwide awareness of the importance of sustainable tourism to development, creating a mobilised force to make tourism have a more meaningful impact in the process of changing the world. This is in relation to the 2030 Agenda for Sustainable Development and the Sustainable Development Goals, which focuses on five areas: inclusive and sustainable economic growth; social inclusiveness, employment, and poverty reduction; resource efficiency, environmental protection, and climate change; cultural values, diversity, and heritage; and mutual understanding, peace, and security (UNWTO, 2016).

With sustainable tourism being such a hot topic after this designation, it is relevant to identify what's being discussed in the literature after this remarkable event. Thus, the main goal of this paper is not only to highlight the importance of sustainable tourism but also to showcase the most relevant and discussed papers, authors, and themes related to sustainable tourism. Is it possible to see a shift in the literature regarding tourism sustainability?

Given the objectives, this study searched the Web of Science (WoS) database, which is commonly used by researchers. The data retrieved was then analysed through the VOSviewer software, and the papers collected were read to understand their content. This work is divided into three main points. First, the methods used are presented, and the processes are explained; then, the results obtained are shown. Finally, conclusions from this analysis are given.

2 Literature Review

"The pandemic has changed the way we work, live and socialise." (Gates, 2021, p. 249) and has impacted tourism like never before. The magnitude reached by the COVID-19

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pandemic forces, according to Gössling et al. (2020), indicates the urgent need not to return to business as usual after this crisis. But rather to seize this opportunity to consider transforming the global tourism system in line with the Sustainable Development Goals (SDGs). Gates (2021) takes the same view, saying that the pandemic is an ideal opportunity to focus on sustainability and climate change. He also emphasises: "… within a decade or two, the economic damage from climate change will be the equivalent of having a COVID-19 pandemic every ten years" (Gates, 2021, p. 41). The World Tourism Organisation (UNWTO, 2020) states that we must take advantage of the pandemic crisis to promote sustainable tourism and accelerate the SDG targets.

Gössling et al. (2020) state that global tourism has been exposed to different crises in the past, giving examples such as the terrorist attack of 11 September and the economic crisis of 2008/2009. These past crises have never affected the global development of tourism in the long term, proving, according to the authors, that the tourism system has been resilient despite external challenges. However, they agree that the evidence suggests that the impact and recovery from the COVID-19 pandemic will be unprecedented. According to the UNWTO (2021), global international tourist arrivals in 2020 fell by 73 percent compared to 2019. The biggest drops in arrivals occurred in the months of April, May and June, which fell by more than 90 percent year-on-year. The world tourism region most affected by international arrivals was Asia and the Pacific, followed by the Middle East (-85% and -74% compared to 2019, respectively). The UNWTO has established possible scenarios for international tourist arrivals for 2021 in which, in an optimistic view, the figure will grow exponentially, achieving an annual result 63% lower than that in 2019. On the other hand, if the growth in arrivals is slow, it could lead to annual results 75 percent lower than in 2019. These scenarios assume that there will be a moderate recovery following the reduction of restrictions and an improvement in consumer confidence.

With the aim of promoting sustainable tourism and reinforcing tourism's role in the SDGs, Turismo de Portugal has developed a tourism plan for 2020–2023. The "Sustainable Tourism Plan 2020-2023" is a strategic document with four lines of action (Turismo de Portugal, 2021). The first axis is associated with structuring a more sustainable offer, with one of the objectives being to develop solutions to the challenges of sustainability through innovation in tourism. Axis II relates to the qualification of the sector's agents, ensuring that they recognise their role in terms of sustainability practices. The next axis certifies that Portugal is recognised as a sustainable destination. The fourth and final axis considers the monitoring of sustainability metrics in the sector. This axis monitors sustainability metrics through indicators and ensures that the results are disseminated. This axis is based on two areas of action. The first area of action is "Monitoring performance for sustainability in the tourism sector" (Turismo de Portugal, 2021). This area presupposes the creation of useful instruments for decision-making by agents and the development of responses based on sustainable development. The second area of action involves systematising information to simplify procedures.

3 Methodology

The methodology of this study comprises a literature review and bibliometric analysis. This type of method allows for creating a general understanding of the literature on a specific topic and its evolution in terms of the number of articles, authors, and content. It allows different approaches to a topic to be gathered in a single document, contributing to the development of further knowledge. This study aims to highlight the importance of sustainable tourism and the attention that the COVID-19 pandemic has brought to sustainability. This section is intended to arrange the most relevant and discussed articles, as well as their authors and other associated topics.

The articles to be analysed were obtained in September 2022 from the WoS database according to certain criteria. The selected articles correspond to the most cited and were published between 2017, the international year for sustainable development of tourism, and 2022. There was also a preference for articles published in English and with open access. It was defined that the search would be based exclusively on articles that use "sustainable tourism" as a topic. The WoS database is frequently used by researchers in the area and is an important tool for achieving the objective of this study.

After collecting the articles, they are analysed using the VOSviewer software, and their abstracts are read to understand their content. The analysis through this software allows important information about the articles to be obtained, such as an evolution in the number of papers published over time, their respective journals and magazines, authors and their origins, and which keywords the researchers used.

The following scheme summarises the methodological process of this study.

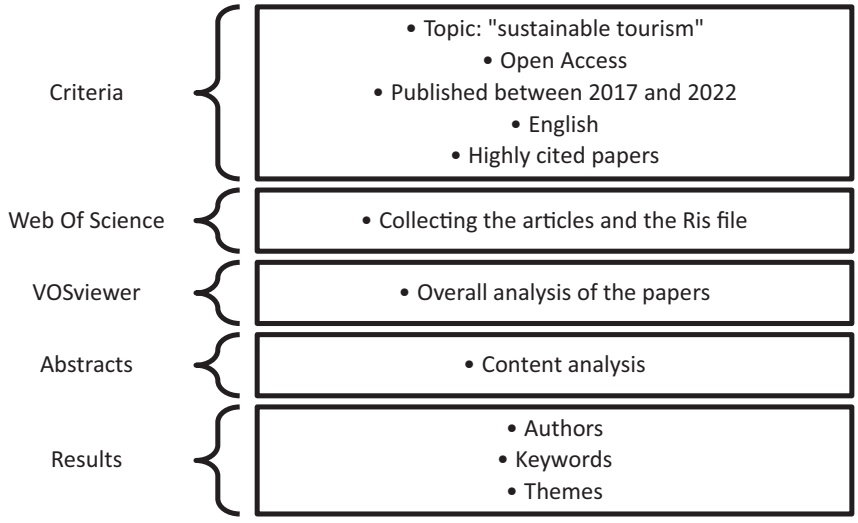

Figure 1: Methodology
Source: Own elaboration.

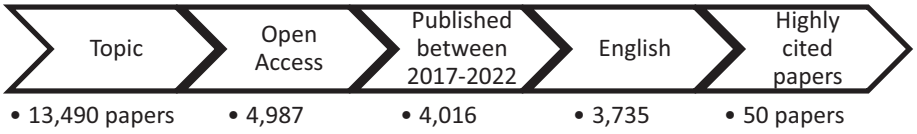

Figure 2: Number of papers obtained per criteria
Source: Own elaboration.

The process of collecting the final number of papers depended on the different stages shown above. Choosing "sustainable tourism" as a Topic keyword in the WoS means that the database will track every paper that includes the words either on its title, abstract or keywords, including keywords plus. This means that there is a higher probability of having papers about the keywords being searched. If the search analysed all fields, it would include papers that might mention the chosen keywords but not necessarily be about them. By specifically searching for papers with keywords in their most relevant contexts (title, abstract and keywords), we narrow the research and save research time. Applying this first criterion resulted in 13,490 papers that included "sustainable tourism" in their title, abstract and keywords. By preferring documents that were free to access, the number of articles was reduced to 4,987. As previously mentioned, the desired articles were preferred to be published between 2017 and 2022 and in English. This reduced the number of articles to 4,016 and 3,735, respectively. It's noticeable that most of the papers were published after (and including) 2017 and in English, as the results don't vary as much. Since the focus of this research is to recognise what's being discussed in the sustainable tourism topic, the authors had a preference to analyse only "hot topic" papers, meaning articles that have been widely mentioned in the research. Thus, the criteria "highly cited papers" were applied. Thus, the final number of articles that followed the pre-established criteria is 50.

The articles were read individually to understand their context and note their relevance for the search. All 50 papers were included and marked as relevant for the search.

4 Results

The WoS database provided a few statistics that can be considered for this paper in alliance with the results provided by the analysis in VOSviewer. With that said, it's possible to ascertain that most papers were published during the pandemic years (2020 and 2021). In fact, 2020 is the year with the biggest number of papers published, with 17 articles being from that year. In second place with 12 papers, it's the year of 2019, the greatest year for tourism activity when records were broken. This could indicate a possible concern regarding the sustainability of

tourism activity in the future. In addition, the fact that in December 2019, the coronavirus spread officially started could justify the growing interest in sustainability. In the past four years, researchers have spoken more about sustainable tourism than they have before. The pandemic accelerated the interest in more sustainable tourism, and the discussion has become louder. Figure 3 shows the publication years of the highly cited papers collected in this research.

The countries of origin of these papers were various. However, England had the most published articles, with 12, followed by Australia, the People's Republic of China, and Spain, with 8 each (Figure 4).

The WoS database also indicates that the papers were affiliated with different universities. The University of Johannesburg and the University of South Australia are connected with four publications each being the two main universities of publications for this case. The Autonomous University of Barcelona (Spain), the University of Canterbury (New Zealand), Linnaeus University (Sweden) and Western Norway Research Institute (Norway) have three papers each. Elsevier is the publisher with the largest number of papers published and it's followed by Taylor & Francis with 16 and 15 papers, respectively. When analysing the different WoS Categories, it is possible to understand that a vast majority of the articles fit in the

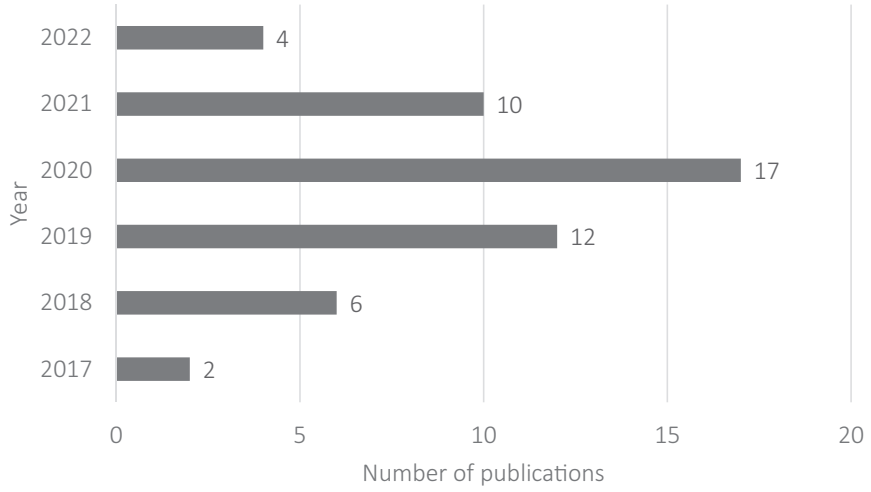

Figure 3: Number of publications per year

Source: Own elaboration.

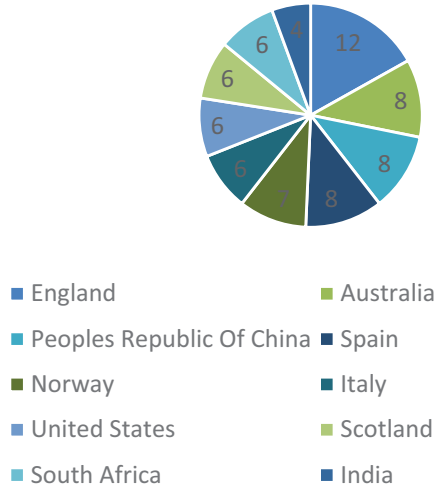

Figure 4: Countries of origin per number of publications

Source: Own elaboration.

"Hospitality Leisure Sport Tourism", "Green Sustainable Science Technology", and "Environmental Sciences".

From the 50 articles, it is possible to identify 208 different authors. The author who published more papers is Higgins-Desbiolles with four and it's followed by Hall and Gossling with three papers each. When analysing the co-authorship connection between the different authors, it is possible to identify 42 clusters. There are eight clusters that include only one author, which means that there is no connection of authorship between these authors and the remaining. Four clusters have two authors each, and thirteen have three. The other five clusters include four authors with links with each other. Connections between five authors were identified in four clusters. Similarly, this happened to three clusters, with six authors linked in each one. There are two clusters with seven authors connected and one cluster with eight. The final two clusters have the most connections of co-authorship between them; one includes thirteen, and the other has sixty authors. All these clusters are displayed in Figure 5.

Figure 6 shows the larger cluster, which includes 60 authors connected with each other when considering their co-authorship.

The software allows the identification of the average year of publication inside each cluster of co-authorship links. As can be seen below the cluster with the higher number of co-authorship links includes publications with an average year of 2021.

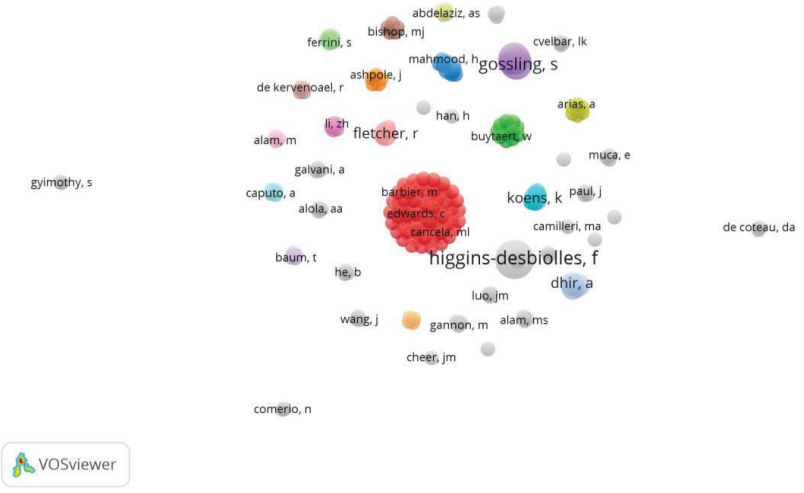

Figure 5: Clusters of different co-authorship links betwe en authors

Source: VOSviewer.

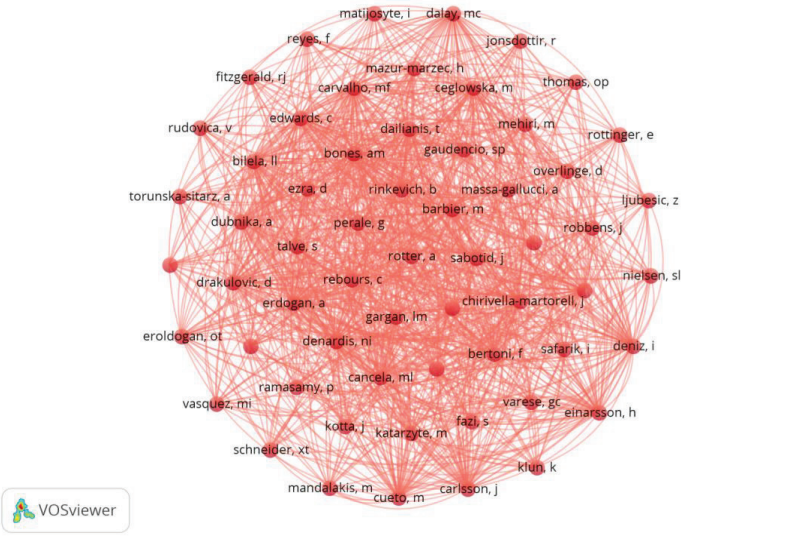

Figure 6: The cluster with the most links of co-authorship

Source: VOSviewer.

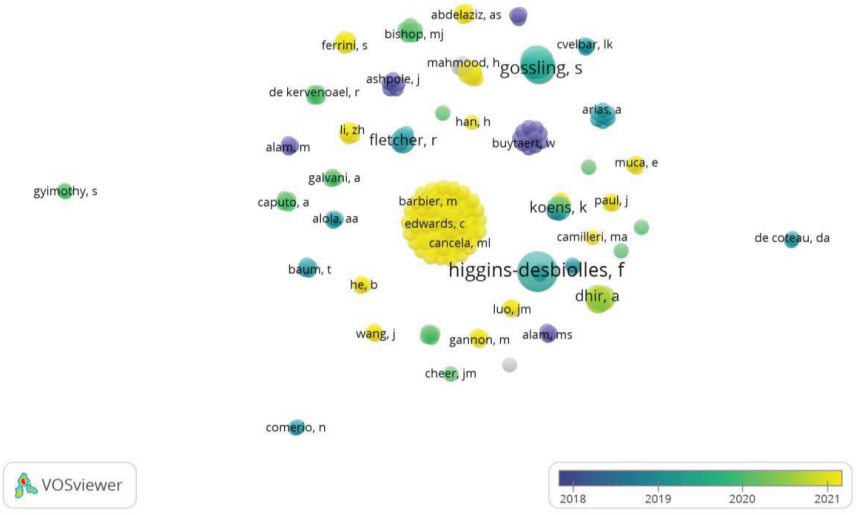

Figure 7: Average year of publication per co-authorship cluster

Source: VOSviewer.

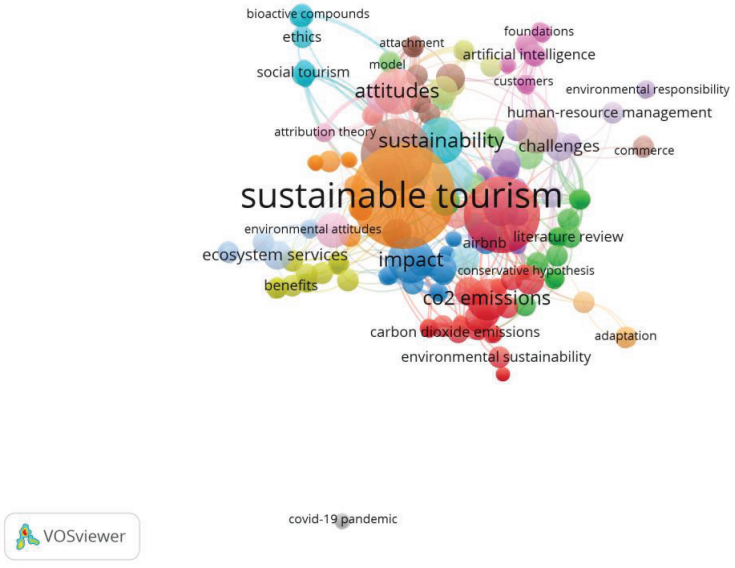

Figure 8: Clusters of Keyword Co-occurrences

Source: VOSviewer.

The analysis of the co-occurrence of keywords by VOSviewer provided a total of 471 keywords divided by 19 clusters. These clusters are represented below. It's noticeable that the keyword with more occurrences is "sustainable tourism" with 19 occurrences, followed by "tourism" and "covid-19" with 12 and 11 occurrences, respectively.

To better understand the keyword co-occurrence analysis, keywords with 3 or more occurrences were selected to be represented by the software. Below, in figure 9, are shown the 30 keywords that had 3 or more occurrences divided by their respective 5 clusters.

Visualising the keywords used in literature provides an insight into what is being associated with the research topic. The five clusters of co-occurrences are all linked through their different connections based on the literature collected. By clicking on the interactive image using the software, it is possible to identify the links between the clusters, as shown in the example below. Cluster 5 includes

the keywords "framework", "attitudes", "support" and "quality". The keyword with the largest number of links in this cluster is "attitudes" and connects cluster 5 with the other clusters through the words "gender", "sustainability", "covid-19", "satisfaction", "planned behaviour", "management", "conservation", "tourism" and "sustainable tourism". By doing this visual, as seen in Figure 10, it is possible to get an understanding of what is being discussed by analysing these links.

With this in mind, the table that follows represents the aforementioned clusters and the analysis of the links between clusters. Table 1 also includes the reference to papers whose main themes correspond to the keyword clusters presented. This analysis is based on the full reading and analysis of each paper. Table 1 combines the clusters defined by the VOSviewer software with the context given by different literature, which helps understand the usage of these keywords and the related topics of discussion.

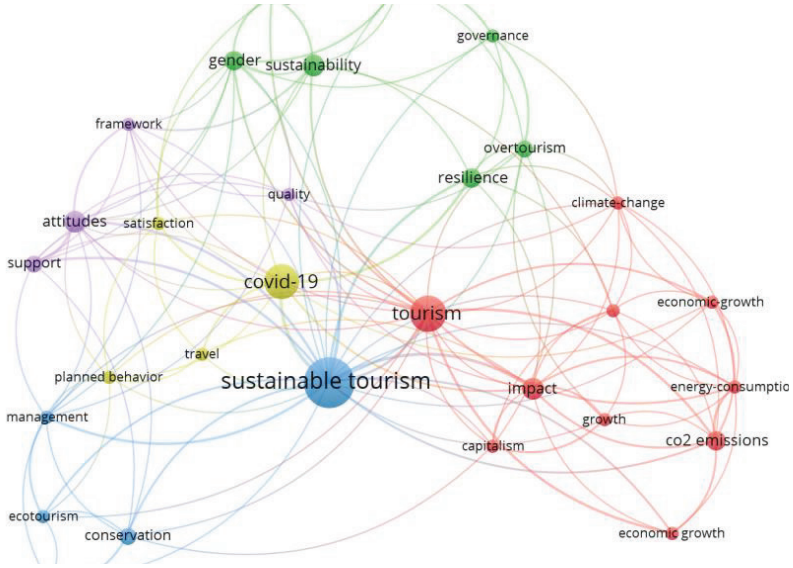

Figure 9: Clusters with keywords with 3 or more co-occurrences

Source: VOSviewer.

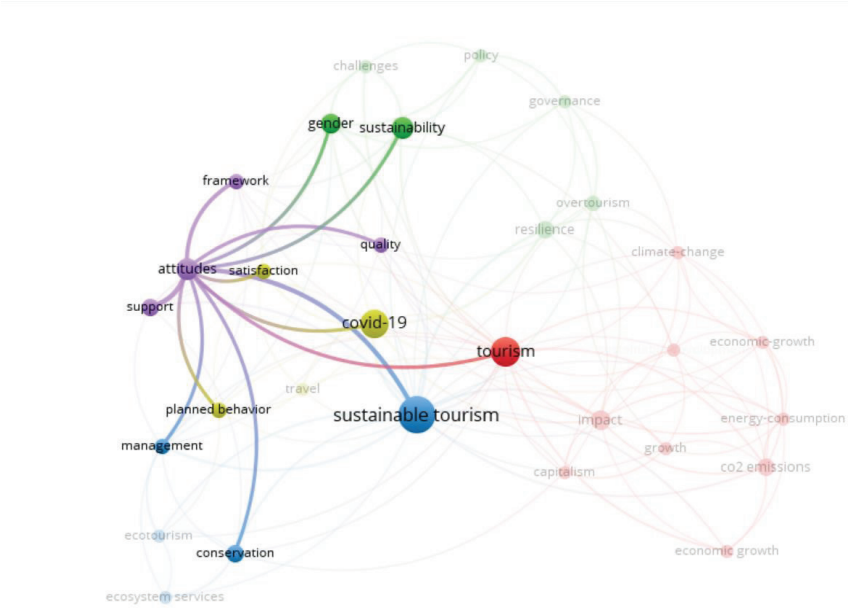

Figure 10: Links between keywords from Cluster 5 and the remaining clusters

Source: VOSviewer.

Table 1: Cluster analysis

Cluster	Keywords	Analysis	Authors
Cluster 1	Capitalism Climate Change CO2 Emissions Economic Growth Energy Consumption Growth Impact Sustainable Development **Tourism**	Tourism plays an important role in the world's economic growth and must also play a key role in climate change, by decreasing its CO2 emissions and reducing its negative impact, focusing especially on the type of energy consumption. Tourism must guarantee its growth is based on sustainable development and should consider greener forms of tourism such as ecotourism. The COVID-19 pandemic has shown the resilience of the sector and that many tourist destinations have been affected by overtourism.	(Alola et al., 2019; Azam et al., 2018; Comerio & Strozzi, 2019; Gannon et al., 2021; Geng et al., 2020; Gössling & Hall, 2019; Paramati et al., 2017; Rasoolimanesh et al., 2019; Rej et al., 2022; Rico et al., 2019; Sharpley, 2020; Talwar et al., 2020; Vuille et al., 2018; Xuefeng et al., 2022)
Cluster 2	Challenges **Gender** Governance Overtourism Policy Resilience Sustainability	Governance plays a key role in developing policies focused on sustainability. The industry has faced different challenges in the past and proved to be a resilient sector and a booster to the economy. However, bigger challenges have not been yet overcome such as gender inequality and overtourism. Future management frameworks must include attitudes supporting the current challenges tourism faces.	(Alarcón & Cole, 2019; Fletcher et al., 2019; Gonzalez et al., 2018; Hall et al., 2020; Koens et al., 2018, 2021; Li et al., 2022; Oklevik et al., 2019; Robinson et al., 2019; Sobaih et al., 2021)
Cluster 3	Conservation Ecosystem Services Ecotourism Management **Sustainable Tourism**	Sustainable tourism management must take into consideration other systems that might be secondary in relation to the tourism activity. A greener form of tourism, like ecotourism, plays an active role in guaranteeing the conservation of a destination and its resources.	(Borja et al., 2020; Büscher & Fletcher, 2019; Filimonau & De Coteau, 2019; Gentry et al., 2020; Grilli et al., 2021; Higgins-Desbiolles, 2018; Khanra et al., 2021; Kleitou et al., 2021; Niewiadomski, 2020; Rotter et al., 2021; Spalding et al., 2017)
Cluster 4	**COVID-19** Planned Behavior Satisfaction Travel	The COVID-19 pandemic affected the world of travel. Now, individuals must be even more conscious of their actions and impact.	(Cheer, 2020; de Kervenoael et al., 2020; Galvani et al., 2020; Han, 2021; Higgins-Desbiolles, 2020b, 2020a; Ioannides & Gyimothy, 2020; Romagosa, 2020; Sharma et al., 2021)
Cluster 5	**Attitudes** Framework Quality Support	Reveals the importance of establishing a management framework in recovering from COVID-19 based of real attitudes and sustainable and planned behaviour to obtain more sustainable tourism without compromising service quality and satisfaction.	(Boluk et al., 2019; Dolnicar et al., 2019; Pizzi et al., 2020; Ramkissoon, 2020.; Tussyadiah, 2020; Xiang et al., 2021)

Source: Own elaboration.

Table 2: Themes of the top 5 highly cited papers.

Title	Author	Year	Theme
Pandemics, transformations and tourism: be careful what you wish for	Hall et al.	2020	Pandemics and Crisis Management
Socialising tourism for social and ecological justice after COVID-19	Higgins-Desbiolles	2020	COVID-19 for social and ecological justice
Dynamic impact of trade policy, economic growth, fertility rate, renewable and non-renewable energy consumption on ecological footprint in Europe	Alola et al.	2019	Energy Consumption
Is Overtourism Overused? Understanding the Impact of Tourism in a City Context	Koens et al.	2018	Overtourism
The Effects of Tourism on Economic Growth and CO2 Emissions: A Comparison between Developed and Developing Economies	Paramati et al.	2017	Economic Growth

Source: Own elaboration.

It's noticeable that the clusters mentioned above are strongly focused on the economic growth post-pandemic; the excess of tourism, namely overtourism; the levels of energy consumption from the sector; the social justice inside tourism and, more importantly, the management of a crisis like the COVID-19. For each cluster, it is noticed a common topic of discussion found in the literature and the respective authors who are discussing it. These topics of discussion are in direct alliance with the themes of the top 5 highly cited papers from this sample, as shown in Table 2.

5 Discussion

It's essential to adopt a holistic approach towards tourism sustainability, considering all the sustainability pillars. The cluster analysis mentions this by connecting the topic "sustainable tourism" with the importance of reducing CO2 emissions, respecting the limits, and not reaching the point of overtourism. The analysis also refers to the importance of developing policies to follow a sustainable development of the sector by considering the positive and negative impacts of the activity and by focusing on real actions and long-term sustainable development. As for the COVID-19 pandemic, it's noticeable how the sector reinforced its resilience and how it easily adapts to different challenges.

The top 5 highly cited papers from this sample highlight the importance of considering different crises and various scenarios to prepare to respond to challenges, such as the pandemic. They also identify the tourism industry's relevance to economic growth and focus on current issues within the sector, such as energy consumption, overtourism, and the need for social and ecological justice.

The results indicate that researchers are concerned with the sustainability of the tourism sector. Even though the economic growth of tourism has always been discussed along with its impact and CO2 emissions, little progress has been made. For researchers, tourism can play an important role in recovering from the pandemic due to all the positive impact that it provides. However, it's very important to develop real actions. The time for a change is now. The COVID-19 pandemic is the perfect opportunity to shift to sustainable growth of tourism, rethink the activity and make sustainable choices. With the different literature collected it's possible to identify a shift of discussion. Sustainability is now more important than ever before, and after the pandemic, every area of tourism must consider long-term and sustainable development. However, tourism sustainability must include more than just environmental issues. It should also include forms of social and responsible tourism. This raises the question, how are we going to verify if the tourism activity is sustainable? To guarantee this process, it is crucial to monitor tourism activity and its development. Developing monitoring constructs of sustainability should be considered in tourism planning.

6 Conclusions

Sustainable tourism might be the answer to the world's current challenges. The sustainable development of tourism activity could be a solution to the present environmental, social, and economic issues, as tourism is a promoter of economic growth and development. The concept of sustainable tourism considers developing tourist activities in ways that minimise negative impacts while promoting positive outcomes.

This paper provides a general understanding of the literature on sustainable tourism, and its evolution in terms of the number of articles, authors and content being discussed. It contributes to further knowledge by gathering in a single document different approaches to a theme. As a limitation, this paper is based on the results of a specific database, which means that other platforms could give different results. The same criteria applied to different databases could result in different results. The criteria applied could also affect the obtained results, especially the preference for highly cited papers. However, the intent of focussing on the highly cited papers is relevant to the goal of the research as it is a literature review, and the emphasis is on what's being intensively discussed by researchers in the area. Using other software to analyse the data collected from WoS could also provide different results. However, the methods used are well-established among researchers and relevant to this matter.

This paper implies that the literature regarding sustainable tourism has changed because of the COVID-19 pandemic. It has become more urgent to build the sector in a sustainable form. It shows the need for sustainable tourism planning and its constant monitoring. Tourism sustainability monitoring appears to be a critical need for the sector's future.

Conflicts of Interest

The authors of the article "Sustainable Tourism: A Systematic Literature Review and Bibliometric Analysis" declare no conflict of interest.

Bionotes

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