

Research paper

Mapping sustainable tourism through scientific publications: Progress towards the 2030 agenda

La cartografía del turismo sostenible a través de las publicaciones científicas: Avances en pos de la agenda 2030

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ABSTRACT

Tourism has become one of the main sectors in promoting the economic development of localities and job creation. Given the magnitude and projection of tourism activity, it represents a high risk for the geographic space where it is developed and sustainability in the sector is an increasingly perceptible global challenge. In this sense, the academic community has paid special interest in recent years to research associated with sustainability in tourism. The present study seeks to describe the state of the construct based on the analysis of bibliometric indicators of productivity, dispersion and visibility or impact, as well as a visualization of the networks of authorial and institutional collaboration and a temporal analysis of the lines of research or fundamental thematic axes. The main results show a progressive increase in the number of research studies, a high dispersion of scientific production, as well as a collaborative network dominated almost entirely by the most notable authors. The research allows us to characterize the state of the art of the construct and provides researchers with important bibliometric information to guide future studies.

Keywords: Sustainable tourism, research, bibliometric

RESUMEN

El turismo se ha convertido en uno de los principales sectores en la promoción del desarrollo económico de las localidades y la creación de empleos. Dada la magnitud y proyección de la actividad turística esta representa un alto riesgo para el espacio geográfico donde se desarrolla y la sostenibilidad en el sector constituye un reto global cada día más perceptible. En tal sentido la comunidad académica le ha prestado un especial interés en los últimos años a las investigaciones asociadas a la sostenibilidad en el turismo. El presente estudio busca describir el estado del constructo partiendo del análisis de indicadores bibliométrico de productividad, dispersión y visibilidad o impacto, así como una visualización de las redes de colaboración autorial e institucional y un análisis temporal de las líneas de investigación o ejes temáticos fundamentales. Los principales resultados evidencian un incremento progresivo en el número de investigaciones, una alta dispersión de la producción científica, así como una red de colaboración dominada prácticamente en su totalidad por los autores más notables. La investigación permite caracterizar el estado del arte del constructo y dota a los investigadores de información bibliométrica importante para encausar futuros estudios.

Palabras clave: Turismo sostenible, investigación, bibliometría.

INTRODUCTION

Awareness of sustainability in organizations, both in the business sector and in other sectors, has been increasing in recent years since most nations have assumed the need for a sustainable development agenda materialized in the Sustainable Development Goals until 2030. Many organizations have assumed sustainability as a significant factor that integrates corporate social responsibility with a relevant impact at the organizational level on employees, customers, suppliers, strategic partners, other stakeholders and the community in general. (Tovar et al., 2015).

Tourism is a sector where there is a direct interaction with both customers and the environment, so the responsibility associated with the environment, natural and anthropic resources and local communities is even greater than in other business sectors. (Millán et al., 2015). As tourism activity increases in magnitude and projection, the impacts it causes on the environment where it is developed become more alarming and can become a serious threat. It is precisely the development of sustainability in tourism that aims to minimize damage to the geographical and socio-cultural environment while promoting local economies. (Costa y Lima, 2021; Cruz-Sintes et al., 2020).

Despite the relevant role of sustainable development in today's business context, three decades ago the concept of sustainability in tourism was virtually ignored by the academic community. (Bramwell et ál., 2017). Since its emergence at the end of the 1980s, the study of this phenomenon has become a major topic in the academic, business, legal and governance spheres. (Moyle et al., 2020).

However, given its holistic approach that facilitates diverse interpretations, there is still no broad consensus regarding the conceptualization of sustainable tourism (Brankov et ál., 2015; Niavis et ál., 2019). This is mainly due to the fact that sustainability is a complex concept, made up of diverse perspectives sometimes perceived in opposing ways by the actors involved in tourism management (Niavis et al., 2019; Saarinen, 2006).

According to World Tourism Organization and United Nations Development Programme (2017), sustainable tourism is that "which takes full account of current and future economic, social and environmental impacts to meet the needs of visitors, the industry, the environment and

host communities". Thus, sustainable tourism presents a multidimensional conception from different approaches such as economic, political, cultural, environmental, social and ethical. In spite of this, many studies approach the construct from a context limited only to some approaches such as environmental or economic, without conceiving a holistic conception of this concept (Bramwell y Lane, 2005; Saarinen, 2006).

According to Moyle et al. (2020) instead of focusing narrowly on a theoretical approach from a single approach, research on sustainable tourism should address issues such as the possibilities of the tourism industry in contributing to the overall development objectives of a destination, society and, from a broader perspective, to the global objectives associated with sustainability. Consistent with this Weiler et al. (2018) raises the need to assume multidisciplinary and interdisciplinary terms as a key requirement for an integrated approach from science that allows a broader perspective of the phenomenon under investigation.

Sustainable tourism represents the complementarity between the production and exploitation of resources and respect for the environment in which tourism activity takes place (Cardoso et al., 2014). Sustainability in the sector allows not only the preservation of natural resources, but also focuses on other aspects such as the authenticity of local culture and the fair distribution of wealth. It also addresses the negative impacts of unstructured and mass tourism, which has been developing for decades and to which both business stakeholders and the academic community have paid special attention in recent years (Millán et al., 2015).

In turn, awareness of environmental issues and policies has allowed consumers to increasingly value the efforts made by companies in the area of corporate social responsibility, and the efforts of institutions have made sustainable tourism a reality in certain companies associated with the sector. (Cardoso et al., 2014).

Despite this, some studies claim that sustainable tourism needs to demonstrate relevance and impact in an uncertain and complex global landscape (Bramwell et al., 2017; Bramwell y Lane, 2015; Fodness, 2017). This position is

based on the gap between theoretical contributions on the construct and the relatively limited evidence of implementation in practice, despite the relevant importance that the topic has assumed today (Moyle et al., 2020). Given this ineffectiveness for implementation in practice, many researchers propose to broaden the narrow perspective of the phenomenon from its three fundamental pillars to a broader conception that addresses other essential factors that are catalysts for the implementation of sustainability in the sector (Mihalic et al., 2021).

Likewise, some authors recognize that studies on sustainability in tourism are expanding in volume, but remain static in content (Bramwell y Lane, 2013; Moyle et al., 2020). This is primarily due to the limitations of the methods used in the research that restrict the extrapolation of the findings to a broader context that certainly favors the development of such a field of science (Moyle et al., 2020).

In such a scenario, it is essential to understand the dynamics of this construct since sustainable tourism constitutes a central element in many of the recent reflections of other fields associated with hospitality and tourism (Qian et al., 2018). From this perspective, the study of the behavior of scientific production on the construct provides researchers with a panoramic view of it, while facilitating the understanding of its current state through the visualization of trends and thematic axes. (Costa y Lima, 2021).

Bibliometrics is a relatively innovative methodology compared to the traditional method of systematic literature review (Serrano et al., 2019). It consists of the analysis of the patterns of scientific production of a given field of science or discipline with the aim of evaluating it quantitatively, through the use of statistical tools (Koseoglu, 2016).

Bibliometric analyses facilitate the understanding of various aspects associated with the theoretical structure of a given discipline such as the direction of the lines of research, the authors who constitute the vanguard and lead a specific field of science, the journals in which the largest number of research papers are published, as well as the gaps, problems and evolution of the scientific production of a field at a given time (Okumus et al., 2018; Serrano et al., 2019). In addition, they provide useful information for researchers and academics to evaluate the scientific ac-

tivity associated with a discipline (De Oliveira y Baracho, 2018), serving as a guide to deepen the actual state of a given research topic (Rey-Martí et al., 2016; Serrano et al., 2019).

The usefulness of bibliometric studies is widely recognized in various disciplines so it is not surprising that sustainable tourism has not been skeptical of the emersion of this methodology, which is expressed in the growing number of research on the subject that use bibliometric analysis as a fundamental method of study (Bramwell et al., 2017; Costa y Lima, 2021; Cruz-Sintes et al., 2020; Garrigos-Simon et al., 2018; Moyle et al., 2020; Niñerola et al., 2019; Qian et al., 2018; Ruhanen et al., 2018; Ruhanen et al., 2015; Serrano et al., 2019).

These investigations differ in their approach, objectives, databases used, time frame and key terms in the search for relevant literature, as well as the software used and the types of analysis developed. For example, some of the studies seek through a series of bibliometric indicators, both of production and of visibility or impact, to describe the state of the art of the construct (Costa y Lima, 2021; Cruz-Sintes et al., 2020; Niñerola et al., 2019; Qian et al., 2018); while others focus on the study of the theoretical, methodological and empirical approaches to sustainable tourism (Ruhanen et al., 2015) including analyzing its evolution by periods as is the case of the research conducted by Moyle et al. (2020).

Regarding databases, there are also tangible differences as some researchers use prestigious databases such as Scopus or Web of Science (Costa y Lima, 2021; Garrigos-Simon et al., 2018; Niñerola et al., 2019) while others prefer to use high impact journals such as *Journal of Sustainable Tourism*, *Annals of Tourism Research* and *Tourism Management* to conduct their studies (Moyle et al., 2020; Ruhanen et al., 2018; Ruhanen et al., 2015). On the other hand, several articles temporally frame their research from 1987 (Moyle et al., 2020; Niñerola et al., 2019; Ruhanen et al., 2015) as this was the year in which the World Commission on Environment and Development presented its report "Our Common Future" which popularized the ideology of sustainable development in both the academic community and the business sector.

Likewise, the key terms used in the literature search differ as some authors use equations where several keywords converge given the very multidisciplinary nature of the construct (Garrigos-Simon et al., 2018; Niñerola et al., 2019), although others prefer only the term "sustainable tourism" with the inclusion of its possible variations (Costa y Lima, 2021; Moyle et al., 2020; Ruhanen et al., 2015).

The present study systematizes the results of bibliometric indicators referring to the construct, extends the time frame under investigation and uses the Dimensions database in the bibliographic search, in which a large number of high impact journals are indexed, as well as others of lower visibility. The objective is to describe the state of the construct "sustainable tourism" from the analysis of scientific production using indicators of productivity and visibility or impact, as well as a brief analysis of the authorial collaboration networks, both through the institutions and the collaboration between authors, which facilitates the understanding of the structure of this field of science and allows understanding the relationships established between authors and institutions through joint publication.

Similarly, the most frequently addressed research topics and those with the highest rates of obsolescence or current relevance are analyzed based on the analysis of co-occurrences of key terms contained in the titles and abstracts, which allows the systematization of those topics that are trends in the field under study.

METHODOLOGY MATERIALS AND METHODS

The methodology used by Costa and Lima (2021) is adapted to achieve the proposed objectives based on the joint use of bibliometric indicators and analysis of collaborative social networks to understand the structure of the construct, as well as to determine patterns in scientific production on the subject. For the collection of bibliometric information, the articles indexed in the Dimension database were used with the inclusion criterion that they were only scientific articles. This database indexes very useful bibliometric information and includes a large number of journals associated with the hospitality and tourism sector, making it a relevant source for the development of the research.

The period of analysis chosen was from 1970, which coincides with the oldest article located in the database on the subject, to 2020, the year in which the research was carried out. Given the multidimensional nature of sustaina-

ble tourism, the union or interception of several key descriptors is used based on the following search equation: "sustainable tourism" OR ("tourism" AND "sustainability") OR ("tourism" AND "sustainable development") OR "ecotourism".

Once the articles were located, they were exported in different formats for subsequent analysis in statistical software. The bibliometric software VOSviewer version 1.6.16 was used for data processing, as well as the Microsoft Excel statistical manager for the normalization of the information obtained and its tabulation and processing.

In order to analyze the scientific production on the construct, bibliometric indicators of productivity and impact were chosen together with social network analysis or SNA (Social Networks Analysis). Bibliometric indicators allow describing, monitoring and evaluating scientific production (Costa y Lima, 2021; Koseoglu et al., 2016) while social network analysis is widely used (Costa y Lima, 2021; Garrigos-Simon et al., 2018; Koseoglu, 2016; Qian et al., 2018) to study the structure of the fields of science and the behavior and degree of relationship between authors. The interaction between the two forms of study is essential to understand to a greater degree the current state of any construct or field of science.

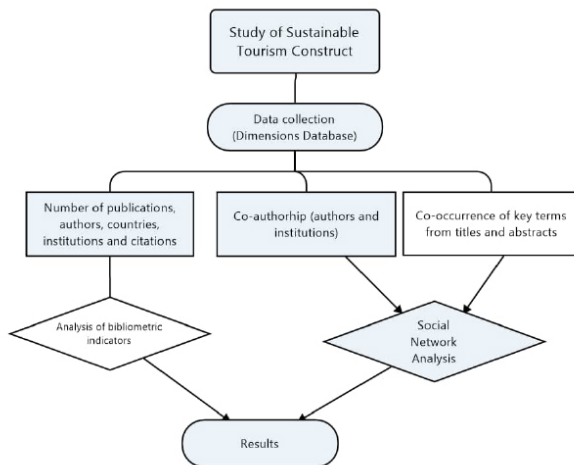
As part of the analysis, variables associated with productivity and visibility or impact are used, such as the number of articles published, the year of publication, the scientific journals, the number of authors, the country of origin, as well as the total frequency of citations both by author and by source. In addition, cooperation networks between authors and institutions are studied through the analysis of co-authorship that expresses the relationship between two authors, institutions or countries established through the number of publications they share (Perianes-Rodriguez et al., 2016). These observations are based on essential indicators in the study of social networks such as density and centrality measures and allow studying how knowledge is shared between authors and institutions that show high levels of cooperation (Koseoglu, 2016; Perianes-Rodriguez et al., 2016).

In addition to these indicators, the co-occurrence of terms contained in the titles and abstracts of the research was studied and, given their extensive number, only those that co-occurred more than 50 times were chosen. The key terms contained in titles and abstracts are important

for understanding a field of science because the authors assume a correlation when choosing these terms and this relationship becomes even more significant when observed in their interaction with the rest of the cooccurrence network (Costa y Lima, 2021). Likewise, these relationships are observed through a temporal visualization that allows a longitudinal study over time of those research topics with greater or lesser obsolescence.

Based on the procedure described above, Figure 1 illustrates and systematizes it for a better understanding of the readers.

Figure 1. Flow chart of the method used for data collection and analysis



RESULTS

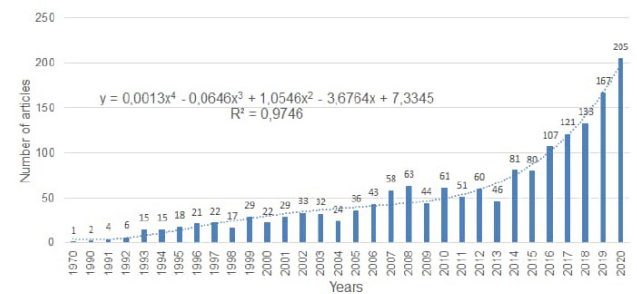
Temporal analysis of scientific production

The first studies of sustainability in the tourism sector are evident in a discrete and sporadic way in the 70s of the last century not being until 1990 that a steady growth of scientific production on the subject is manifested (Figure 2). A total of 1646 scientific articles have been published, highlighting a growing interest in the construct and an exponential growth of its scientific production in the period 2016-2020.

Figure 2. Evolution over time of the scientific production on sustainable tourism.

Table 1: Journals with the highest productivity in relation to the Sustainable Tourism construct

Scientific Journal	number of items	%	% accumulated
Journal of Sustainable Tourism	292	17.74	17.74
Tourism Management	87	5.29	23.03
Annals of Tourism Research	63	3.83	26.85
Worldwide Hospitality and Tourism Themes	52	3.16	30.01
Current Issues in Tourism	51	3.10	33.11
Tourism Recreation Research	49	2.98	36.09
Journal of Travel Research	39	2.37	38.46
Tourism and Hospitality Research	32	1.94	40.40
Anatolia	29	1.76	42.16
International Journal Of Tourism Research	29	1.76	43.92
Tourism Management Perspectives	29	1.76	45.69
Tourism Review	28	1.70	47.39
Tourism Geographies	27	1.64	49.03
Asia Pacific Journal of Tourism Research	26	1.58	50.61



Distribution of production by journals

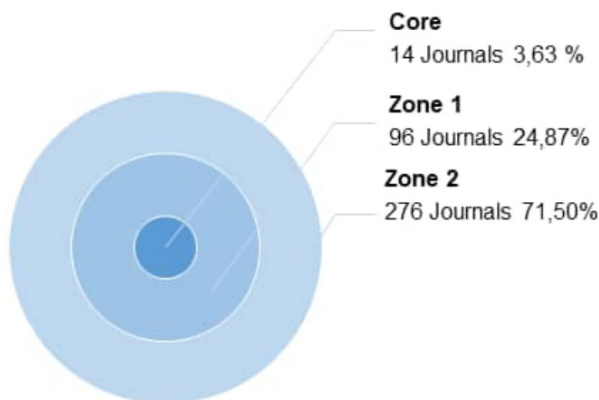
The scientific journal with the highest number of publications is the Journal of Sustainable Tourism, which represents 17.74% of the total number of publications and which, together with the 13 consecutive journals listed in Table 1, constitute the core around the field of science under study.

Figure 3. Bradford dispersion areas

constitute the core around the field of science under study.

For the analysis of the dispersion of productivity from the sources, the Bradford dispersion areas were used as shown in Figure 3. Given that the traditional way of determining the Bradford areas from the graphical representation on a similogarithmic scale and its superposition on a straight line is not always practical, the authors determined these areas by classifying the journals in decreasing order of citation frequency and calculating the core from the accumulated 50%.

As Figure 3 shows, even though the topic is widely studied by numerous journals, Bradford's core includes only 14 journals representing only 3.63% of the total number of journals addressed. This core indicates the concentration of a small group of journals with the highest production and visibility, which implies a rapid drop in performance if the search is extended beyond the core.



Analysis of scientific production by author

The study yields a total of 1001 authors who have published scientific articles on the subject, of which the most productive are listed in Table 2. The author with the highest number of articles is Bramwell, Bill with a total of 27; followed by Lane, Bernard with 24; Hall, C. Michael with 14 articles and Dolnicar, Sara with 12 manuscripts on the construct.

Table 2: Productivity by authors

Authors	number of items
Bramwell, Bill	27
Lane, Bernard	24
Hall, C. Michael	14
Dolnicar, Sara	12
Font, Xavier	11
Dwyer, Larry	10
Jayawardena, Chandana	10
Weaver, David B.	10
Boley, B. Bynum	9

Analysis of scientific production by country

As in the analysis of the sources, when studying productivity by country, a great dispersion of scientific production is evident. Of the 89 countries that ventured into the field, Table 3 shows the most productive ones, with the United Kingdom being the country with the highest number of articles on Sustainable Tourism with a total of 160, followed by the United States with 119 and Australia with 108. In the case of the Latin American region, the number of articles published represents only 2.55% of the total, with Mexico and Brazil being the two most productive countries with 9 and 8 articles respectively.

Table 3: Productivity by country

Scientific Journal	number of items	%
United Kingdom	160	9.72
United States	119	7.23
Australia	108	6.56
China	69	4.19
Spain	54	3.28
Canada	47	2.86
Indonesia	45	2.73
Italy	35	2.13
New Zealand	29	1.76
South Afric	22	1.34

Analysis of the visibility or impact of the articles

For the analysis of the visibility or impact of the references, the total number of citations received by each document was used (table 4), as well as the Platz index, which is simply the decimal logarithm of the total number of citations and allows a more appropriate comparison. The document with the greatest impact was Sustainable tourism as an adaptive paradigm (Hunter, C. 1997) published in the journal Annals of Tourism Research, which received a net total of 458 citations.

Table 4: Visibility or impact of scientific articles

Reference Cited	citations	Platz Index
Hunter, C. (1997). Sustainable tourism as an adaptive paradigm. Annals of Tourism Research, 24(4), 850–867.	458	2.66
Butler, R. W. (1999). Sustainable tourism: A state-of-the-art review. Tourism Geographies, 1(1), 7–25.	450	2.65
Liu, Z. (2003). Sustainable Tourism Development: A Critique. Journal of Sustainable Tourism, 11(6), 459–475.	436	2.64
Choi, H. C., & Sirakaya, E. (2006). Sustainability indicators for managing community tourism. Tourism Management, 27(6), 1274–1289.	434	2.64
Buckley, R. (2012). Sustainable tourism: Research and reality. Annals of Tourism Research, 39(2), 528–546.	422	2.63
Sharpley, R. (2000). Tourism and Sustainable Development: Exploring the Theoretical Divide. Journal of Sustainable Tourism, 8(1), 1–19.	410	2.61
Saarinen, J. (2006). Traditions of sustainability in tourism studies. Annals of Tourism Research, 33(4), 1121–1140.	405	2.61

Bramwell, B., & Lane, B. (1993). Sustainable Tourism: An Evolving Global Approach. Journal of Sustainable Tourism, 1(1), 1–5.	343	2.54
Moscardo, G. (1996). Mindful visitors. Annals of Tourism Research, 23(2), 376–397.	339	2.53
Lee, T. H. (2013). Influence analysis of community resident support for sustainable tourism development. Tourism Management, 34, 37-46.	325	2.51

Analysis of the visibility or impact of the authors

The most prolix author is Bramwell, Bill who has received a total of 394 citations and who presents the highest Platz index, this coincides with the fact that he is the most productive author which increases the chances that he will be cited in a paper. Similarly, other authors with high visibility and impact show a direct and increasing relationship with productivity (table 5). Among other authors who are references in the field are Hall, C. Michael, Gössling, Stefan y Lane, Bernard.

Table 5: Visibility or impact of authors

Author	Citations	Platz Index
Bramwell, Bill	394	2.60
Hall, C. Michael	389	2.59
Gössling, Stefan	368	2.57
Lane, Bernard	261	2.42
Scott, Daniel	211	2.32
Buckley, Ralf	189	2.28
Gursoy, Dogan	186	2.27
Dolnicar, Sara	185	2.27
Becken, Susanne	173	2.23
Peeters, Paul	173	2.23

Analysis of the visibility or impact of the journals

As has occurred with the authors, the journals with the highest visibility coincide to some extent with the most productive ones, the highest impact journal being the Journal of Sustainable Tourism with a total of 3837 citations and a Platz index of 3.58. Other journals (table 6) with the highest visibility are Tourism Management and Annals of Tourism Research.

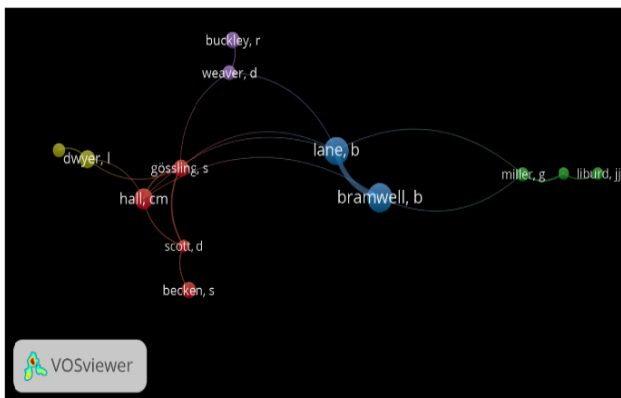
Table 6: Visibility or impact of journals

Journals	Citations	Platz Index
Journal of Sustainable Tourism	3837	3.58
Tourism Management	3526	3.55
Annals of Tourism Research	3388	3.53
Journal of Travel Research	1420	3.15
Current Issues in Tourism	586	2.77
Tourism Geographies	446	2.65
International Journal of Tourism Research	362	2.56
Tourism Recreation Research	361	2.56
International Journal Of Hospitality Management	272	2.43

Author collaboration network

The base criterion is established as those authors who have published at least five scientific articles on sustainability in tourism. The collaboration network indicates that there is a great interrelation between the most productive and prestigious authors (figure 4), as they tend to publish together, which justifies their presence in the four clusters of the network.

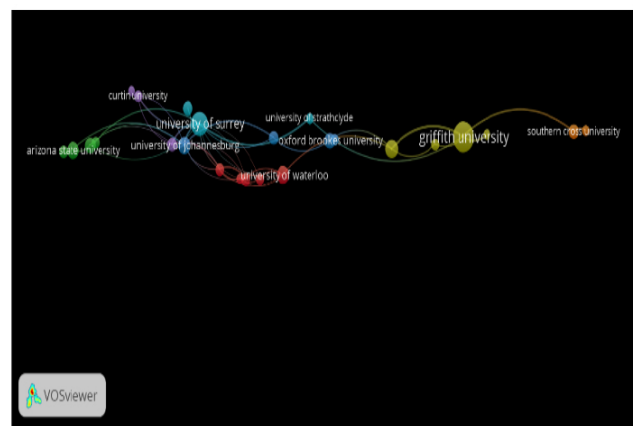
Figure 4. Author collaboration network



Institutional collaboration network

The institutional collaboration network reveals the existence of close collaboration between a group of universities in various regions of the world. The largest nodes correspond to those institutions with the highest levels of productivity, while the thickness of the lines connecting the nodes indicates the intensity of the interrelationships between the various universities (figure 5). The largest nodes correspond to universities located in Australia (Griffith University, University of Queensland, Southern Cross University), the United States (Arizona State University, Texas A&M

Figure 5. Institutional collaboration network



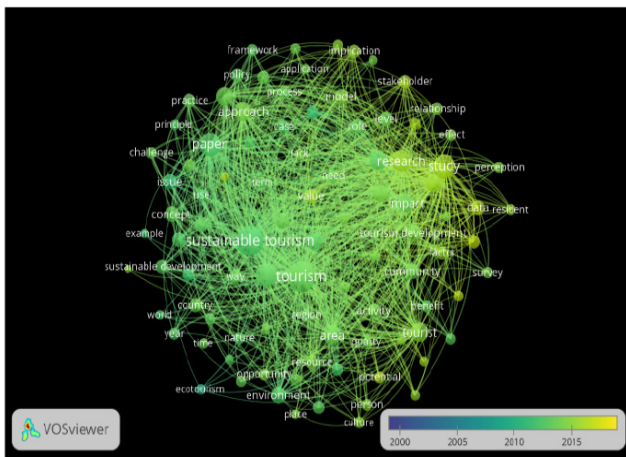
University, University of Georgia) and the United Kingdom (University of Surrey, Sheffield Hallam University, Oxford Brookes University and University of Brighton), which considerably reaffirms the high levels of scientific production in these countries.

Analysis of the main lines of research on Sustainable Tourism

To analyze the main lines of research, the authors used a map of key terms in the title and summary of the research with a temporal visualization (Figure 6) that allows a longitudinal analysis over time of which research topics have been most addressed and the relationships between them, as well as which of them are more obsolescent or current.

The map indicates the existence of three fundamental clusters: one referring to theoretical and methodological analyses of sustainable tourism, another that studies the economic, sociocultural and environmental pillars of sustainability in the sector, as well as the possibility of applying sustainable principles to tourism in a given context, and a final cluster referring to the measurement and impact of the implementation of sustainable tourism.

Figure 6. Map of key terms on Sustainable Tourism



DISCUSSION AND CONCLUSIONS

The bibliometric study on sustainable tourism of scientific articles indexed in the Dimension database reflects the existence of a growing interest of the scientific community in sustainability in the sector, which is manifested in the progressive increase of research published in the last three decades. These results correspond with those of other bibliometric studies such as the research conducted by (Costa y Lima, 2021; Cruz-Sintes et al., 2020; Moyle et al., 2020; Niñerola et al., 2019; Ruhanen et al., 2018; Ruhanen et al., 2015). Environmental threats and the possibility that these may multiply, added to an increasingly conscious perception of the need to preserve the fundamental resources for the development of tourism activities, are some of the reasons that justify the growing interest of the academic community in the study of sustainable tourism (Cruz-Sintes et al., 2020).

Researchers from various tourist destinations on the planet and especially from those with greater affluence, have devoted great efforts to include issues associated with sustainability in the sector both in the academic and business environment and the results of their studies have generated theoretical contributions and practical implications on sustainable tourism (Qian et al., 2018). According to Price's exponential growth criteria the field is precisely at the stage of exponential growth in which it becomes a research front with high possibilities of increasing its productivity in the coming years.

The study indicates that an average of 51.5 articles per year are published, with an increasing trend in the coming decades. The first articles published systematically on the construct date back to the 1990s, coinciding with the period of awareness of States and the international community on the problem of climate change and the need for sustainable development as an essential pillar of human progress since the presentation of the popularly called Brundtland Report in 1987, which expressed the need for multilateral support to call for awareness and cooperation for the sake of a more balanced approach to development (Ruhanen et al., 2015).

It should be noted that sustainable tourism is widely studied throughout the world, as there are publications in a total of 386 journals from different countries and even 75% of the scientific production is distributed in 78 journals, which continues to be a significant number. The most relevant articles are found in the most productive journals such as the Journal of Sustainable Tourism, Tourism Management and Annals of Tourism Research, which is consistent with Bradford's Law that explains that in the core of a field the most visible references are found (Sembay et al., 2020). These results are consistent with those obtained from other research that highlight these journals as those with the highest impact and productivity and that make them a reference in the field under study (Costa y Lima, 2021; Qian et al., 2018). In particular, the Journal of Sustainable Tourism stands out as the first journal created to promote critical thinking and innovation regarding the relationship between sustainability and tourism (Qian et al., 2018).

Similarly, the research has important theoretical implications, since from this point of view it is useful for researchers and academics to identify Bramwell, Bill; Hall, C. Michael; Gosling, Stefan and Lane, Bernard as the most prolific authors with publications internationally recognized for their quality. This indicator, as well as authorial and institutional collaboration can be of great use for future contributions, as well as for the choice of countries for the development of projects and academic scholarships. It is worth highlighting the role of Griffith University, which has the highest number of publications, as well as strong links with several universities, which consequently justifies its high rate of collaboration. This university was the first institution in Australia to offer courses in Hospitality and Tourism Management and has become a reference in the field (Costa y Lima, 2021).

Consequently, it is not surprising that Australia is positioned among the regions with the highest productivity in terms of scientific production related to sustainable tourism, since this country occupies first place among the economies that are benchmarks for sustainable development in the tourism sector (Costa y Lima, 2021). As for the rest of the countries, the geographical analysis indicates that the regions of Europe, North America, Australia and Oceania are those with the highest number of published manuscripts.

Likewise, from the analysis of key terms contained in the titles and abstracts, it can be concluded that the map shows a fairly high index of topicality, which implies that this is a field of science under study and that its theoretical bases are still being debated by researchers, so it is likely that in the coming years greater theoretical, methodological and empirical contributions will be made. Sustainable tourism is closely associated with the study of tourism geography and tourism management, with strong links to issues related to geographic space, context, biological and natural risks, as well as strategic management, planning, tourism industry processes, and local and sector development. The most current topics are related to the role of local communities and stakeholders of tourism companies such as customers, suppliers and competitors, as well as the implementation of sustainable tourism in tourist destinations.

This is consistent with the results obtained from other studies such as those carried out by Mauleon Mendez et al. (2018) and Qian et al. (2018) where the highest co-occurrence rates were found in terms such as sustainable tourism, management, sustainable development, sustainability, ecotourism and conservation. Thus sustainable tourism integrates aspects of various economic, social, cultural and environmental phenomena, indicating the need to investigate this construct as a multidimensional phenomenon (Qian et al., 2018).

It should also be noted that among the limitations of the study is the use of only key descriptors in English for the literature search, as well as a single database, which, together with the exclusive selection of scientific articles as units of analysis, favors the possibility that some relevant works have not been identified.

Sustainable tourism is closely related both to studies on tourism geography and environmental factors and to the strategic management of tourism entities (Cardoso et al.,

2014) and, given the importance that stakeholders attribute to sustainability, it will be a decisive factor in the development of organizations in the tourism sector (Tovar et al., 2015).

REFERENCES

- Bramwell, B., Higham, J., Lane, B., y Miller, G. (2017).** Twenty-five years of sustainable tourism and the Journal of Sustainable Tourism: looking back and moving forward. *Journal of Sustainable Tourism*, 25(1), 1-9. <https://doi.org/10.1080/09669582.2017.1251689>
- Bramwell, B., y Lane, B. (2005).** From niche to general relevance?: Sustainable tourism, research and the role of tourism journals. *Journal of Tourism Studies*, 16(2), 52-62. <https://doi.org/https://search.informit.org/doi/10.3316/ielapa.200603952>
- Bramwell, B., y Lane, B. (2013).** Getting from here to there: Systems change, behavioural change and sustainable tourism (editorial). *Journal of Sustainable Tourism*, 21(1), 1-4. <https://doi.org/https://doi.org/10.1080/09669582.2012.741602>
- Bramwell, B., y Lane, B. (2015).** What drives research on sustainable tourism?. *Journal of Sustainable Tourism*, 23(1), 1-3. <https://doi.org/https://doi.org/10.1080/09669582.2014.970407>
- Brankov, J., Jovicic, D., y Milijasevic, D. (2015).** Sustainable tourism in National Park "Đerdap", Serbia - attitudes of local population. *Journal of the Geographical Institute Jovan Cvijic, SASA*, 65, 183-199. <https://doi.org/10.2298/IJGI1502183B>
- Cardoso, C., Castillo, M., y Hernández, C. (2014).** Sosteniendo al turismo o turismo sostenible. *Estudios y Perspectivas en Turismo*, 23, 376-395. <http://www.redalyc.org/pdf/1807/180730867009.pdf>
- Costa, B. M. G., y Lima, P. V. P. S. (2021).** Analysis of scientific production in the field of sustainable tourism: Weaving networks of knowledge. *International Journal for Innovation Education and Research*, 9(3), 425-447. <https://doi.org/10.31686/ijer.vol9.iss3.3010>

- Cruz-Sintes, A., Santos-Assán, A.,** Díaz-Pompa, F., Cruz-Aguilera, N., y Balseira-Sanamé, Z. (2020). Estudio bibliométrico de los artículos originales encontrados en Sciencedirect sobre turismo y sostenibilidad ambiental. *RECUS. Revista Electrónica Cooperación Universidad Sociedad*, 5(2), 31-39. <https://doi.org/https://doi.org/10.33936/recus.v5i2.2693>
- De Oliveira, R., y Baracho, R. (2018).** The development of tourism indicators through the use of social media data: the case of Minas Gerais, Brazil *Information Research*, 23(4). <http://www.informationr.net/ir/23-4/paper805.html>
- Fodness, D. (2017).** The problematic nature of sustainable tourism: Some implications for planners and managers. *Current Issues in Tourism*, 20(16), 1671–1683. <https://doi.org/https://doi.org/10.1080/13683500.2016.1209162>
- Garrigos-Simon, F. J., Botella-Carrubi, M. D., y Gonzalez-Cruz, T. F. (2018).** Social Capital, Human Capital, and Sustainability: A Bibliometric and Visualization Analysis. *Sustainability*, 10(12). <https://doi.org/10.3390/su10124751>
- Koseoglu, M. A. (2016).** Growth and structure of authorship and co-authorship network in the strategic management realm: Evidence from the Strategic Management Journal. *BRQ Business Research Quarterly*, 19(3), 153-170. <https://doi.org/https://doi.org/10.1016/j.brq.2016.02.001>
- Koseoglu, M. A., Rahimi, R., Okumus, F., y Liu, J. (2016).** Bibliometric studies in tourism. *Annals of Tourism Research*, 61, 180-198. <https://doi.org/10.1016/j.annals.2016.10.006>
- Mauleon Mendez, E., Genovart-Balaguer, J., Merigo, J. M., y Forteza, C. (2018).** Sustainable Tourism Research Towards Twenty-Five Years of the Journal of Sustainable Tourism. *Advances in Hospitality and Tourism Research (AHTR)*, 6. <https://doi.org/10.30519/ahtr.406555>
- Mihalic, T., Mohamadi, S., Abbasi, A., y Dávid, L. (2021).** Mapping a sustainable and responsible tourism paradigm: A bibliometric and citation network analysis. *Sustainability*, 2021, 853. <https://doi.org/10.3390/su13020853>
- Millán, M., Hidalgo, L., y Arjona, J. (2015).** El oleoturismo: una alternativa para preservar los paisajes del olivar y promover el desarrollo rural y regional de Andalucía - España. *Revista de Geografía Norte Grande*, 60, 195-214. <http://www.redalyc.org/pdf/300/30041118011.pdf>
- Moyle, B., Moyle, C.-I., Ruhanen, L., Weaver, D., y Hadinejad, A. (2020).** Are we really progressing sustainable tourism research? A bibliometric analysis. *Journal of Sustainable Tourism*, 29(1), 106-122. <https://doi.org/10.1080/09669582.2020.1817048>
- Niavis, S., Papatheochari, T., Psycharis, Y., Rodriguez, J., Font, X., y Martinez Codina, A. (2019).** Conceptualising Tourism Sustainability and Operationalising Its Assessment: Evidence from a Mediterranean Community of Projects. *Sustainability*, 11(15). <https://doi.org/10.3390/su11154042>
- Niñerola, A., Sánchez-Rebull, M.-V., y Hernández-Lara, A.-B. (2019).** Tourism Research on Sustainability: A Bibliometric Analysis. *Sustainability*, 11(5). <https://doi.org/10.3390/su11051377>
- Okumus, F., Köseoglu, M. A., Putra, E. D., Dogan, I. C., y Yildiz, M. (2018).** A Bibliometric Analysis of Lodging-Context Research From 1990 to 2016. *Journal of Hospitality & Tourism Research*, 43(2), 210-225. <https://doi.org/10.1177/1096348018765321>
- Perianes-Rodriguez, A., Waltman, L., y van Eck, N. J. (2016).** Constructing bibliometric networks: A comparison between full and fractional counting. *Journal of Informetrics*, 10, 1178–1195. <https://doi.org/10.1016/j.joi.2016.10.006>
- Qian, J., Shen, H., y Law, R. (2018).** Research in Sustainable Tourism: A Longitudinal Study of Articles between 2008 and 2017. *Sustainability*, 10(3). <https://doi.org/10.3390/su10030590>
- Rey-Martí, A., Ribeiro-Soriano, D., y Palacios-Marqués,**

D. (2016). A bibliometric analysis of social entrepreneurship. *Journal of Business Research*, 69(5), 1651-1655. <https://doi.org/10.1016/j.jbusres.2015.10.033>

Ruhanen, L., Moyle, C.-I., y Moyle, B. (2018). New directions in sustainable tourism research. *Tourism Review*, 74. <https://doi.org/10.1108/TR-12-2017-0196>

Ruhanen, L., Weiler, B., Moyle, B. D., y McLennan, C.-I. J. (2015). Trends and patterns in sustainable tourism research: a 25-year bibliometric analysis. *Journal of Sustainable Tourism*, 23(4), 517-535. <https://doi.org/10.1080/09669582.2014.978790>

Saarinen, J. (2006). Traditions of Sustainability in Tourism Studies. *Annals of Tourism Research*, 33, 1121-1140. <https://doi.org/10.1016/j.annals.2006.06.007>

Sembay, M., Luiz Pinto, A., de Macedo, D. D. J., y Mo-

reiro-González, J. A. (2020). Aplicación de la Ley de Bradford a la investigación sobre Open Government. *Anales de Documentación*, 23(1). <https://doi.org/10.6018/analesdoc.326771>

Serrano, L., Sianes, A., y Ariza-Montes, A. (2019). Using bibliometric methods to shed light on the concept of sustainable tourism. *Sustainability*, 11(24), 6964–6989. <https://doi.org/https://doi.org/10.3390/su11246964>

Tovar, L., Mendoza, R., y Castillo, M. (2015). La responsabilidad social en el conocimiento turístico: una reflexión filosófica. *Revista de Cultura e Turismo - Cultur*, 9(3), 1-22. <http://www.uesc.br/revistas/culturaeturismo/ano9-edicao3/1.pdf>

Weiler, B., Torland, M., Moyle, B., y Hadinejad, A. (2018). Psychology-informed doctoral research in tourism. *Tourism Recreation Research*, 43(3), 277-288. <https://doi.org/https://doi.org/10.1080/02508281.2018.1460081>