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# Sustainability Perceptions in Tourism and Hospitality: A Mixed-Method Bibliometric Approach

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**Abstract:** In the post-Covid-19 era, tourism impacts and the role played by sustainable planning on the long-term success of destinations have gained renewed importance. Understanding the image and perceptions tourists hold of a destination is vital for tourism planning, as they play a key role in tourists' decisions. Considering the importance of these two key concepts (perceptions and sustainability), the present paper contributes to the advancement of knowledge on sustainable tourism by characterizing the state of the art of Sustainability Perceptions in Tourism and Hospitality (SPTH). To this end, the scientific literature on the topic was mapped through a combination of three bibliometric analysis techniques, namely: evaluative, relational, and systematic bibliometric analysis. These were based on productivity and impact indicators, including SciVal topic prominence. The results reveal that sustainability perceptions in SPTH focus on tourists', stakeholders', and residents' perceptions. These findings highlight the need for involving local communities in the destination planning process to align the outcomes of tourism development with their expectations. Finally, this paper presents an original methodological contribution, as it is the first to apply the SciVal topic prominence analysis to SPTH.

**Keywords:** sustainability; perceptions; tourism; hospitality; mixed-method bibliometric approach

## 1. Introduction

Understanding tourists' perceptions of tourism products and destinations is vital to planning, managing, and promoting a destination, as corroborated by many destination image studies [1–4]. The importance of understanding how tourists process and evoke destination image perceptions lies in the fact that these images and perceptions play a key role in tourists' destination-decision-making processes. In other words, as tourists cannot experience the destination before deciding to visit and making reservations, these consumption decisions are largely based on what they know about (cognitive image) and which feelings and emotions they associate (affective image) with each destination [2–4]. This is particularly true when other variables within the process—e.g., costs, distance of regions, attitudes, knowledge, technology, and trust—are equivalent among the available alternatives [5,6].

Considering the importance of destination image for the dynamics of tourist consumption, the literature on destinations' competitiveness recognizes that the success of a destination lies in the ability to offer experiences that exceed tourists' expectations [7]. Expectations are, naturally, fueled by tourists' perceptions of destinations. Therefore, to exceed these expectations, destination managers must understand how tourists perceive their destinations.

Understanding tourists' perceptions is also particularly important in the current digital-oriented world, where contents are propagated in an increasingly fast pace, and most searches for information (about

the destination) and reservations take place online [8–10]. In addition traditional information searching, new technologies are increasingly opening up possibilities of catching tourists' attention and influencing their perceptions of destinations, such as virtual tours and 360° or augmented-reality videos, which studies [11,12] show to be particularly effective in terms of improving destination image and increasing visiting intentions.

When promoting destinations both online and through traditional media, destination managers must consider aspects related to sustainability. In the context of the Covid-19 pandemic and the consequent rules of social distancing, tourism and hospitality businesses should focus on new ways to offer value to consumers, which must encompass the creation and promotion of new tourism products that are not only are truly sustainable, but are also perceived as sustainable by tourists [13]. This new context has been referred to as the new post-Covid-19 tourism [14]. Thus, considering the extant literature on destination image perceptions and tourism sustainability, it can be inferred that understanding sustainability perceptions in tourism and hospitality is of utmost importance in the current context [13].

Considering this increased importance of understanding tourists' perceptions regarding sustainability in destinations, the present paper's main goal is to characterise the state of the art in Sustainability Perceptions in Tourism and Hospitality (SPTH). To this end, articles on the topic published in the Scopus database are considered as the research universe. In this context, a representation of the world's scientific production on SPTH was gathered through a search for articles containing "perceptions" + "sustainability" + "tourism + hospitality", published from 2001 to 2020 on Scopus. The final database comprised 101 papers published by 102 authors. These papers address a total of 48 prominent topic clusters within SPHT.

The retrieved articles were subjected to a combination of three bibliometric analysis techniques, namely: evaluative, relational, and systematic bibliometric analyses. The evaluative analysis assessed the productivity and impact of SPTH literature through the examination of impact metrics, such as views per document and citations per document. The relational bibliometric analysis consisted of a crossover analysis on SciVal topic prominence based on co-authorship and co-word structures. Finally, the systematic review consisted of a structured literature review conducted by identification of pre-defined variables, which provided insights about the main topics covered by the studies.

The findings reveal that the productivity and the impact of SPTH studies are relatively low, and so is the cooperation between authors. The research production is also very concentrated in a small number of papers. The most prominent topic, "tourism development; ecotourism; destination management", is highly rated on SciVal and covers several scientific areas, offering great research opportunities. Studies mostly focus on "tourist/tourists; impact", which are directly related to perceptions. The findings also show that sustainability perceptions vary among tourists, residents, and stakeholders.

From a practical perspective, the findings highlight the need to ensure that destination planning should aim to minimize negative impacts. To this end, involving local communities is of utmost importance, as it is the only way to make sure that their interests and expectations are considered within the planning decisions. In this same vein, the findings evidence the need for aligning the interests of residents, tourists, and industry stakeholders, as each perceive sustainability in different manners according to their own interests and circumstances.

Finally, this paper brings about an original methodological contribution. Using several bibliometric techniques to map scientific publications is a methodological innovation that had not been previously applied to SPTH. Within this paper, it was shown to be an effective tool to map the scientific production in a certain area of knowledge and, consequently, to create a clear picture of its state of the art. Therefore, it should be useful for further bibliometric studies.

## 2. Tourists' Perceptions

The process of understanding destination image perceptions is described by cognitive psychology theories and multi-store models of memory [2,11,12,15,16]. Cognitive psychology comprises the study

of various psychological processes, including those related to memories, emotions, and perceptions. Building on contributions from this area, Cardoso et al. [2] access the specificity/structure of tourists' destination perceptions and propose a new destination imagery processing model, which describes the processing of image elements in tourists' memory. The results of Cardoso et al. [2] reveal that the perceptions (imagery) of dream (places one has not yet visited but dreams of visiting) destinations are predominantly psychological/holistic and based on future projections of travel experiences, expressed through words such as "mysterious", "tranquility", and "romantic". On the other hand, the perceptions of favorite destinations (previously visited) focus on more functional elements and specific destination attributes, which describe more tangible aspects linked to the tourist experience. Those are expressed through words such as "climate", "delicious", and "skiing".

Accordingly, the results obtained by de Araújo, Cardoso, Araújo-Vila, and Dias [17] reveal that mountain tourists' perceptions consist mostly of functional features and specific destination attributes, that is, more tangible elements, such as water, food quality, air, or prices. Moreover, when tourists evoke mountain sports, they include evaluative perceptions of the places' characteristics, which are particularly relevant to the practice of sports and the quality of the environment. These evaluative perceptions are expressed through words like "snow, mountains, cold, freshness" together with "skiing and hiking", "sports", and "green". In this context, these results corroborate those of Lin and Huang [18], according to whom tourists tend to describe destinations where they had positive experiences with attributes related to sensorial experiences.

Within the present study, tourists' perceptions are not measured directly. Rather, the literature on a specific type of such perception (i.e., sustainability perceptions) is mapped through a set of bibliometric analysis procedures. To better justify these procedures, the next section addresses previous contributions from bibliometric studies in Tourism and Hospitality.

## 3. Bibliometric Studies in Tourism and Hospitality

Mapping the scientific literature on a certain topic is an effective tool for understanding the state of the art in that area of knowledge. This process implies analysis of the productivity of countries, researchers, scientific areas, research domains, and emerging research topics [19], and is generally operationalized by bibliometric studies [20]. This type of study seeks to identify key research topics and map emerging subjects in a specific area.

Within such studies, the most common bibliometric techniques to access key topics are co-word analysis and topic prominence analysis. Co-word analysis is a type of content analysis that identifies keywords and correlates them with research topics [21]. Topic prominence analysis, in turn, identifies emerging topics in science and is primarily used in the hard sciences and technology-oriented areas [22].

To perform a topic prominence analysis, researchers need a reliable topic prominence rank. The most reliable topic prominence rank of international scientific literature is SciVal, which, consequently, is adopted in most studies applying topic prominence analysis. Within this rank, emerging topics are classified in percentiles, which are an indicator of their interest and momentum worldwide. A topic's percentile classification is based on the average of its CiteScore, citations, and topic view count. Therefore, in simple terms, the more papers addressing a certain topic are cited in other papers, the better that topic is classified within the SciVal topic prominence rank.

In this context, SciVal topic prominence analysis allows for the identification of the highest impact papers within a certain topic, the most prolific authors and institutions within a certain field, the areas with the greatest financing potential, the most appropriate journal in which to publish certain research, and, naturally, the emerging and declining topics within a certain area [22]. Topic prominence analysis is, then, a very useful tool for mapping scientific production.

Within the tourism and hospitality field, several bibliometric studies have mapped the scientific production according to topic [23,24]. However, as pointed out by Mulet-Forteza et al. [25] and Merigó et al. [26], none have addressed the literature on Sustainability Perceptions in Tourism and Hospitality (SPTH). Accordingly, no previous study has employed SciVal prominence analysis for

tourism studies either. In this context, by mapping the literature on SPTH using SciVal prominence analysis, the present study presents both a theoretical contribution and methodological novelty.

## 4. Methodology

The present study's objective was achieved through a set of methodological procedures, including a systematic search on Sustainability Perceptions in Tourism and Hospitality (SPTH) and a combination of bibliometric analysis techniques. The next sub-sections address each of these procedures in detail.

### *4.1. Data Collection and Systematization Procedures*

To get a reliable picture of the state of the art of Sustainability Perceptions in Tourism and Hospitality studies, the present study adopted SCOPUS as a data source. SCOPUS is one of the largest and highest-quality abstract and online citation databases of peer-reviewed literature [27,28]; therefore, it was deemed an adequate source for the present investigation's purposes. The data collection process took place on 26 July, 2020 and started with a general search for articles including "perceptions" + "sustainability" + "tourism + hospitality". To refine the results, the filter "exact keyword, perception/s" was employed.

The database was downloaded in Bibtex format from Scopus, then R Studio software version 1.2.5042 was used to eliminate duplicates and create a unified file. The next step was homogenizing the data. This was essential for the analysis, as the original Excel output file from Scopus presents inconsistencies in data presentation that make any type of systematized analysis impossible. These include details such as full stops, commas, spaces between words, different authors' names and affiliations, etc. Moreover, the SciVal topic prominence items were manually and individually retrieved from Scopus, as the platform does not include this information on the downloadable database.

The database was later exported to R Bibliometrix 3.0., which was used for the network analysis [29]. The file was then converted into Excel format and uploaded to the DB Gnosis software (see http://favouritedestinations.com/en/dbgnosis/), through which the content analysis was carried out. Content analysis is a set of communication analysis techniques that allow researchers to find patterns within documents and discourses, which can be used to formulate theories or verify hypotheses [30]. When applied to bibliometric studies, content analysis allows for a clear view of the evolution of the literature on a given topic [20] through the mapping of its scientific production [19]. Within the present study, following the example of previous bibliometric studies on tourism [31], quantitative and qualitative content analysis methods were combined through a mix of three bibliometric analysis techniques, which allowed for the mapping of the scientific production on SPTH. Figure 1 summarizes the data collection and systematization procedures.

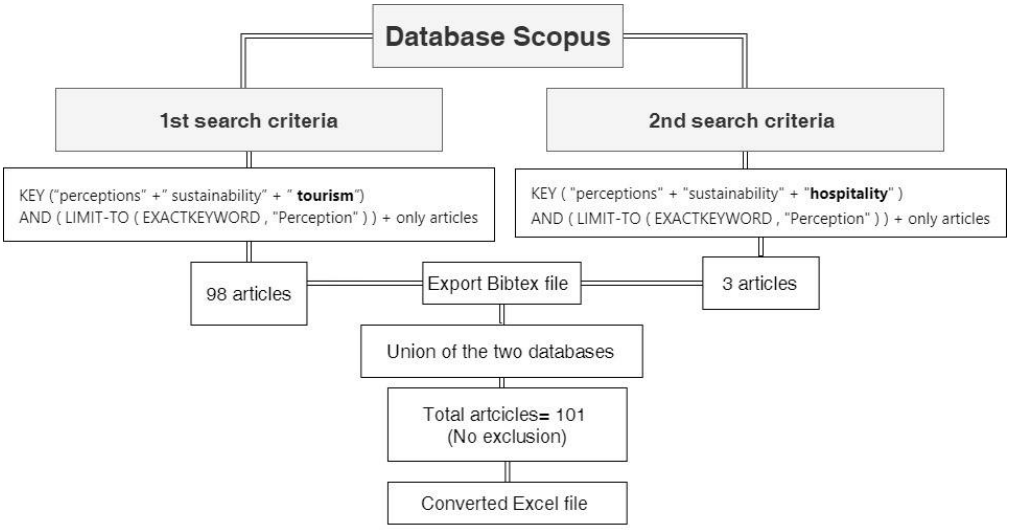


**Figure 1.** Data collection and systematization procedures.

### *4.2. Data Analysis Procedures*

The mapping of research production on SPTH was carried out through three bibliometric techniques, as summarized in Figure 2. The bibliometric evaluative technique was operationalized through six variables: average citations per document, authors' appearances, single-authored documents, journals' productivity, authors' productivity, and SciVal Topic prominence's productivity. The first three variables were analyzed through R Bibliometrix, while the three last ones were examined using DB Gnosis.

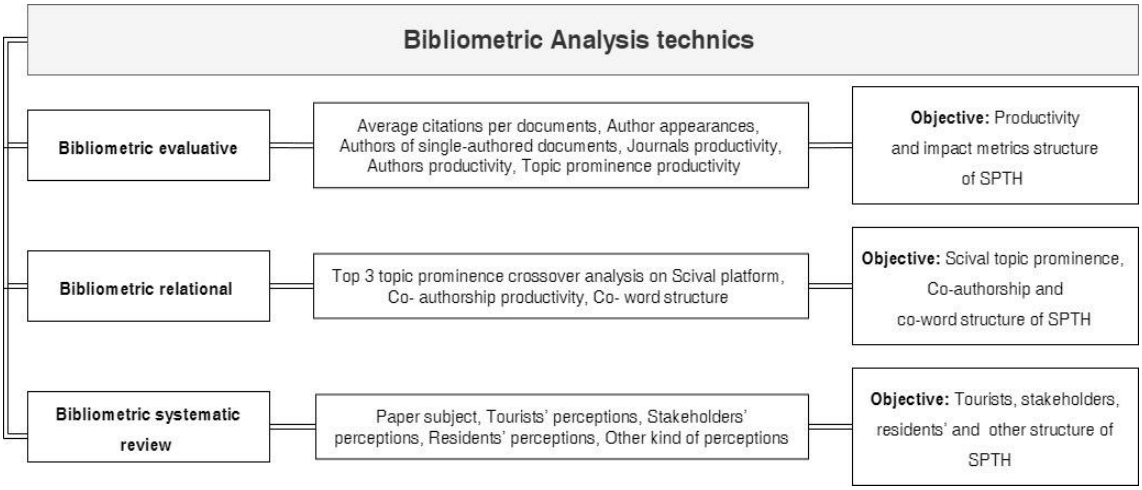


**Figure 2.** Data analysis procedures—mixed-method bibliometric techniques.

As stated by Koseoglu et al. [20], "The bibliometric relational techniques explore relationships among the research fields, the emergence of new research themes and methods, or co-citation and co-authorship pattern" (p. 182). Within the present research, these techniques were used for these three purposes. The first relational technique applied involved a top-three topic prominence cross-analysis on the SciVal platform. After identifying the three most researched topics within SPTH through an evaluative bibliometric technique, a cross-analysis of the three topics was performed directly on the SciVal platform.

The co-authorship productivity was analyzed through the network of collaboration between authors using R Bibliometrix and biblioshiny (and an add-on app that provides a web interface for Bibliometrix). The network analysis encompassed the top 10 articles by 50 nodes and two edges [32]. In order to obtain the network between authors, the command "NetMatrix <- biblioNetwork (M, analysis = "collaboration", network = "authors", sep = ";")" was used.

To define the variables used in the bibliometric systematic review, a co-word structure was employed. Co-word structure is a content analysis technique that analyses the frequency of words within a text and seeks to find patterns to build concepts in a certain area [20,33]. According to Molinos, Mesquita, and Hoff [34], this kind of analysis is a powerful tool to detect key themes in scientific articles. Hence, it was deemed adequate for the definition of variables within the present analysis.

The top 40-word structure in abstracts was built in DB Gnosis, and a series of analysis techniques for text documents was performed with the application of Zipf's law. As described by Powers [35], Zipf's law implies that any text presents three categories of words: (1) high-frequency words or stop-words, that is, operational words, such as articles, pronouns, conjunctions, prepositions, and some adjectives and adverbs; (2) average-frequency words—those that convey morphological and informative meaning, such as substantives, adjectives, and verbs; and (3) unit-frequency words, which include terms that happen in very specific contexts and, therefore, have frequencies of one or close to one [34]. To analyze the abstracts under the principles of Zipf's law, first, they had to be converted to .txt files with UTF8 codification, as this is a requirement of DB Gnosis. The next step consisted of removing stop-words, such as articles, prepositions, and formal elements of citation. Then, following the

suggestion of Tyagi et al. [36], a word frequency count was performed in order to identify words with semantic content (e.g., indexation terms, descriptors, and key themes).

The Keywords Plus co-word network structure was also created in R Bibliometrix using Keywords Plus with 50 nodes. To create the keyword co-occurrences network, the command "(NetMatrix <- biblioNetwork (M, analysis = "co-occurrences", network = "keywords", sep = ";")" was used. Then, to plot the network, the command (net = networkPlot (NetMatrix, normalize = "association", weighted = T, $n$ = 30, Abstracts = "Keyword Co-occurrences", type = "fruchterman", size = T, edgesize = 5, labelsize = 0.7) was used.

Finally, the whole database (including all 101 articles) was subjected to a systematic bibliometric review. This procedure was based on previous bibliometric studies within tourism [23] and was carried out using the variables identified within the co-word analysis.

## 5. Results

The present study's results are presented in three sections, each dedicated to one of the three bibliometric techniques used to map scientific research production of SPTH.

### *5.1. Bibliometric Evaluative Results: Productivity and Impact Metric Structure of SPTH*

The bibliometric evaluative results comprise four main outcomes: database description, journals' productivity, authors' productivity, and SciVal topic prominence productivity. The final database consists of 101 papers published by 102 authors in 39 different journals from 2000 to 2020 (first semester). Amongst those, only 10 documents are single-authored, and the collaboration index is 3.09 authors per document. Moreover, the papers include a total of 48 SPHT topic prominence clusters. Table 1 presents a detailed characterization of the database.

**Table 1.** Database.

| Description of Main Information about Data | Results |
|---|---|
| Timespan | 2001–2020 |
| Sources (Journals) | 39 |
| Average years from publication | 5.58 |
| Average citations per documents | 21.07 |
| Average citations per year per document | 2.76 |
| References | 6207 |
| DOCUMENT TYPES | |
| Article | 101 |
| DOCUMENT CONTENTS | |
| Keywords Plus (ID) | 504 |
| Author's Keywords (DE) | 372 |
| TOPIC PROMINENCE | 48 |
| AUTHORS | |
| Authors | 102 |
| Author Appearances | 310 |
| Authors of single-authored documents | 10 |
| Authors of multi-authored documents | 281 |
| AUTHOR COLLABORATION | |
| Single-authored documents | 10 |
| Documents per Author | 0.347 |
| Authors per Document | 2.88 |
| Co-Authors per Documents | 3.07 |
| Collaboration Index | 3.09 |

Regarding journals' productivity, the analysis was based on a ranking of the top 10 journals. As evidenced in Figure 3, two journals stand out in terms of productivity: *Journal of Sustainable*

*Tourism* with 24 articles and *Tourism Management* with 12 articles. All other journals have less than five publications on SPTH each.

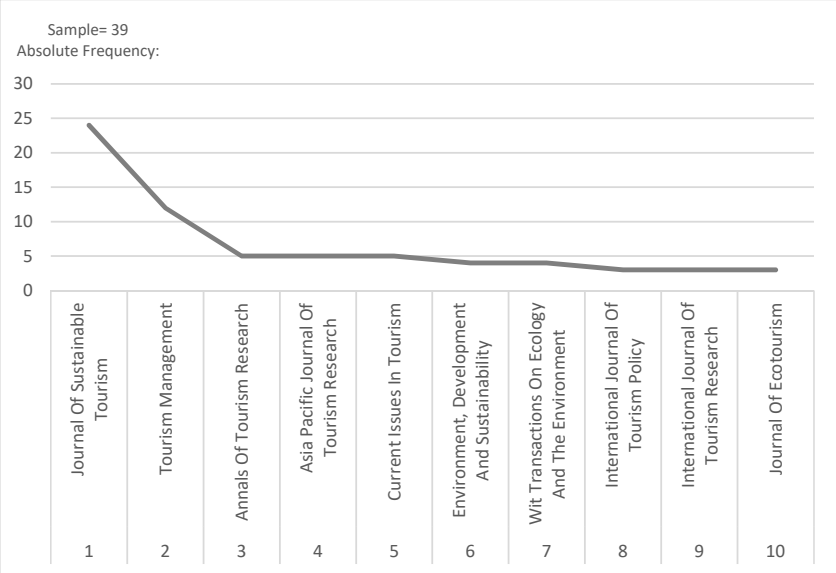


**Figure 3.** Top 10 journals for Sustainability Perceptions in Tourism and Hospitality (SPTH).

Concerning the authors' productivity, as shown in Table 2, no author stands out from the rest, as all authors within the top 10 have two or three publications each.

**Table 2.** Top 10 authors in SPTH.

| Rank: | Authors: | Absolute Frequency: | Relative Frequency: |
|---|---|---|---|
| 1 | Moscardo G. | 3 | 0.009 |
| 1 | Ohnmacht T. | 3 | 0.009 |
| 1 | Ponnapureddy S. | 3 | 0.009 |
| 1 | Priskin J. | 3 | 0.009 |
| 1 | Vinzenz F. | 3 | 0.009 |
| 1 | Wirth W. | 3 | 0.009 |
| 1 | Altinay L. | 2 | 0.006 |
| 1 | Cottrell S. | 2 | 0.006 |
| 1 | Diedrich A. | 2 | 0.006 |
| 2 | Farmaki A. | 2 | 0.006 |
| 2 | Gursoy D. | 2 | 0.006 |
| 2 | Jaafar M. | 2 | 0.006 |
| 2 | Modica P.d. | 2 | 0.006 |
| 2 | Powell R.b. | 2 | 0.006 |
| 2 | Prayag G. | 2 | 0.006 |
| 2 | Ribas Palom A. | 2 | 0.006 |
| 2 | Thapa B. | 2 | 0.006 |
| 2 | Torres-bagur M. | 2 | 0.006 |
| 2 | Vila-subirós J. | 2 | 0.006 |
| 2 | Zenga M. | 2 | 0.006 |

Regarding topic prominence, as shown in Table 3, one topic cluster clearly stands out: "tourism development; ecotourism; destination management", with 37 articles. Although with a much lower frequency, when compared to the latter, "Snow Making | Tourism Demand | Ski" (nine articles) and "Green Hotel | Hospitality Industry | Ecotourism" (six articles) also stand out. All other topic clusters within the top 10 have only one or two publications in the analyzed period. Moreover, the most prominent topic is within the 99–100 percentile, while the other two are within the 90–99 percentile.

**Table 3.** Prominence of the top 10 topics.

| N = 48 Rank: | Variable Name: | Prominence Percentile | Absolute Frequency: | Years | Authors with more than 1 Paper | Universities |
|---|---|---|---|---|---|---|
| 1 | Tourism Development \| Ecotourism \| Destination Management | 99.523 | 37 | 2001(2); 2004(1); 2006(2); 2007 (2) 2008(2); 2009(1); 2010(4); 2011(1) 2013(1); 2014(3); 2015(3); 2017(7) 2018 (3); 2019 (3); 2020 (2) | Jaafar M. (2) Thapa B. (2) | Universiti Sains Malaysia. University of Florida, United States |
| 2 | Snow Making \| Tourism Demand \| Ski | 97.592 | 9 | 2011 (1); 2012 (1); 2013 (1); 2014 (1); 2018 (1), 2019 (3); 2020 (1) | Ribas Palom A. (2) Torres-Bagur M. (2) | University of Girona, Spain |
| 3 | Green Hotel \| Hospitality Industry \| Ecotourism | 96.841 | 6 | 2017 (2); 2019 (1); 2020 (3) | Altinay L. (2) Farmaki A. (2) | Oxford Brookes University, United Kingdom Cyprus University of Technology, Cyprus |
| 4 | Convention \| Tokyo International Forum \| Tourism | 98.808 | 2 | — | — | — |
| 5 | Dark Tourist \| Heritage Tourism \| Anzac | 90.929 | 2 | — | — | — |
| 6 | Destination Image \| Tourist Satisfaction \| Revisit Intention | 98.094 | 2 | — | — | — |
| 7 | Volunteer Tourism \| tourist Experience \| Orphanage | 88.688 | 2 | — | — | — |
| 8 | Destination Marketing \| International Tourism \| tourist | 63.203 | 1 | — | — | — |
| 9 | Botswanum \| Democratic Party \| Protectorate | 57.511 | 1 | — | — | — |
| 10 | Coral Reef \| Diving \| Marine Park | 77.561 | 1 | — | — | — |

### *5.2. Bibliometric Relational Results*

The bibliometric relational results section presents three main bibliometric indicators: SciVal topic prominence performance, co-authorship productivity, and co-word structure in SPTH.

The SciVal crosser analysis encompassed the top three topics' prominence from 2010 to 2019. As shown in Table 4, the topic "tourism development; ecotourism; destination management" includes works in many areas other than SPTH. In total, the topic was addressed by 3,475 papers published between 2010 and 2019. It is a widely cited topic (36,966 citations), with a high number of views (146,376). On the other hand, "green hotel; hospitality industry; ecotourism" presents better results in terms of views per publication (49) and a field-weighted view impact (2.02).

**Table 4.** SciVal crosser results on the top three topics' prominence from 2010 to 2019.

| Worldwide Overall Performance | Tourism Development; Ecotourism; Destination Management T.946 | Snow Making; Tourism Demand; Ski T.8688 | Green Hotel; Hospitality Industry; Ecotourism T.19030 |
|---|---|---|---|
| Scholarly Output | 3475 | 1517 | 871 |
| Scholarly Output (growth %) | 344.2 | 122.9 | 150 |
| Citations | 36,966 | 21,172 | 11,636 |
| Field-Weighted Citation Impact | 1.19 | 1.46 | 1.06 |
| Citations per Publication | 10.6 | 14 | 13.4 |
| Views | 146,376 | 60,099 | 42,657 |
| Views per Publication | 42.1 | 39.6 | 49 |
| Field-Weighted View Impact | 1.91 | 1.68 | 2.02 |
| Citing-Patent Count (patent office: All Patent Offices) | 0 | 0 | 0 |

Regarding co-authorship productivity, the results summarized in Figure 4 reveal the network of the top 10 authors in SPTH with 50 nodes and two edges. A relevant structure is kept in five vertices by five authors. The Ponnapureddy S. vertex is connected to Priskin J., Ohnmacht T., Vizenz F., and Wirth W., all from University of Applied Sciences and Arts of Lucerne, Switzerland. The next most prominent author in terms of collaborations is Cottrell S. from Wageningen University, The Netherlands. However, this author's connections are far less expressive. Both authors' connections are limited to researchers from their own institutions.

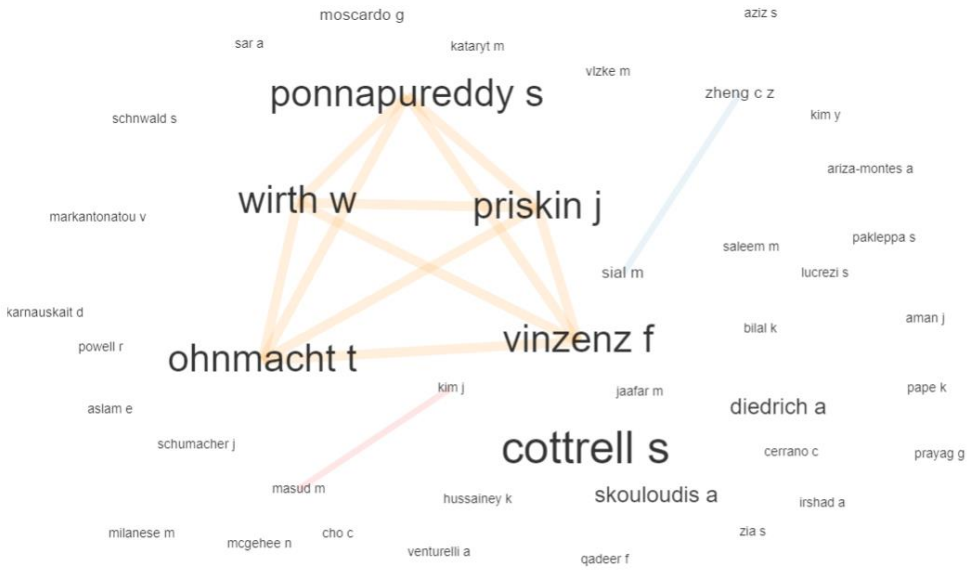


**Figure 4.** Network of the top 10 authors.

The results of the co-word structure of abstracts, summarized in Table 5, reveal a group of words related to the search topic in the high-frequency region: "tourism, sustainability, perceptions, development, and sustainable". A second group of words comes in the second-highest-frequency region of words. Those include, among others: "tourist/tourists, impact, residents, environmental, perception, community/communities, stakeholders, perceived". This second group of words gave rise to the variables to be analyzed in the systematic review.

**Table 5.** Top 40 words in abstracts.

| N = 13,828 Rank | Abstract Word | N = Words: | Rank | Abstract Word | N = Words: |
|---|---|---|---|---|---|
| 1 | tourism | 313 | 21 | community | 44 |
| 2 | sustainability | 130 | 22 | climate | 43 |
| 3 | perceptions | 110 | 23 | support | 42 |
| 4 | development | 107 | 24 | industry | 40 |
| 5 | sustainable | 103 | 25 | destination | 39 |
| 6 | study | 91 | 26 | management | 39 |
| 7 | local | 83 | 27 | conservation | 38 |
| 8 | research | 74 | 28 | findings | 38 |
| 9 | tourist | 71 | 29 | positive | 38 |
| 10 | impacts | 70 | 30 | change | 37 |
| 11 | tourists | 66 | 31 | stakeholders | 37 |
| 12 | residents | 65 | 32 | perceived | 33 |
| 13 | social | 65 | 33 | communities | 32 |
| 14 | environmental | 63 | 34 | negative | 29 |
| 15 | between | 58 | 35 | practices | 27 |
| 16 | paper | 57 | 36 | cultural | 26 |
| 17 | Results | 56 | 37 | effects | 26 |
| 18 | perception | 53 | 38 | implications | 26 |
| 19 | more | 51 | 39 | destinations | 26 |
| 20 | economic | 49 | 40 | hotel | 25 |

The co-word structure of Keywords Plus with50 nodes, represented in Figure 5, follows the same pattern as the co-word structure of abstracts. The results show that "sustainable tourism perceptions" is in the middle of the network structure, linked by several edges (or links) to other nodes (or vertices). The first vertex comes from the word "perspectives", which is connected to "management", "visitor", "site", "heritage", and "impacts". Moreover, it should be noted that the word "impacts" is directly connected to "tourism" and "perceptions".

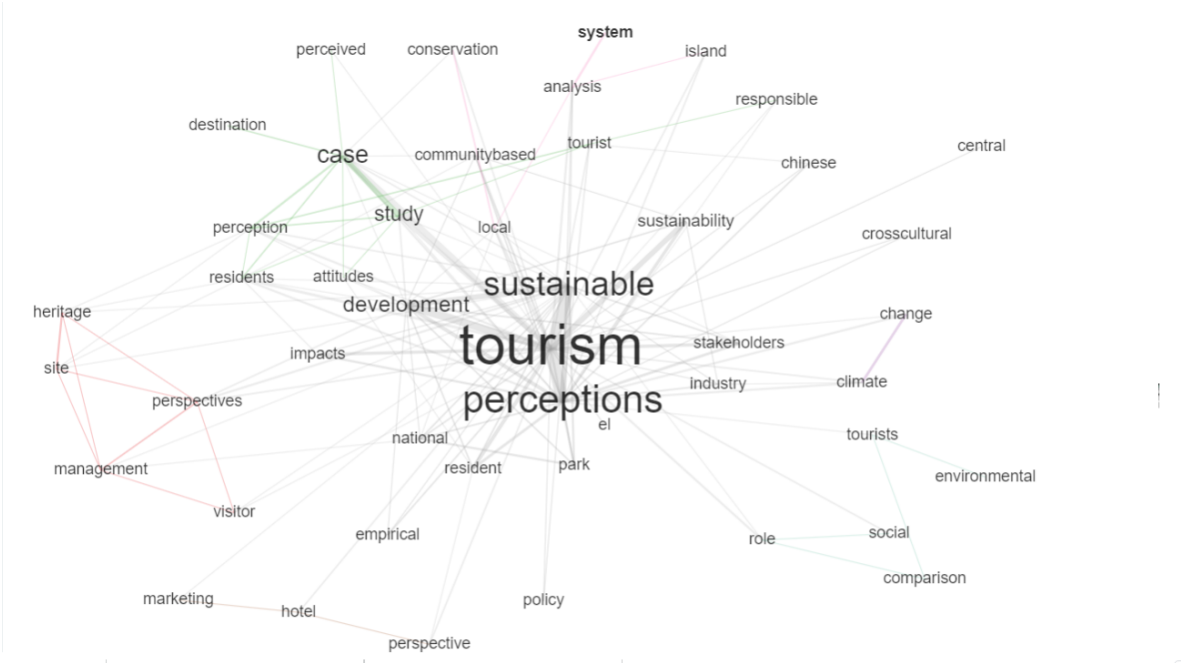


**Figure 5.** Keywords Plus co-word network.

Another vertex that stands out is "case", which is expressively connected to "sustainable tourism perceptions". It also has some minor connections to "perceptions", "residents", and "destination".

The "stakeholders" vertex, in turn, is directly connected to the center of the network. Some other relevant vertices are "climate change", "tourists environmental", and "responsible tourism".

### *5.3. Bibliometric Systematic Review: Tourists', Residents' and Stakeholders' SPTH Structure*

After carrying out a systematic content analysis of all articles within the database and considering the pre-defined analysis variables, three types of sustainability perceptions in tourism and hospitality were detected in 46 articles: tourists', residents', and stakeholders' perceptions. In the remaining 55 articles, no variable was detected, and no common pattern was identified.

Within the categorized articles, less than half (44.5%) indeed address sustainability perceptions. Amongst those, tourists' perceptions are the most significant type of sustainability perception, as they are addressed by 45.7% of the studies. Residents' perceptions, in turn, are addressed by 30.1%, while stakeholders' perceptions are addressed by 15.2%. The subjects of each group of variables are represented in Table 6.

Articles focusing on tourists' perceptions address topics such as tourism's economic, sociocultural, and environmental impacts [37], as well as the importance of tourist satisfaction and consumer loyalty [38,39]. Other specific topics addressed by these articles are: destinations' ability to become sustainable [40], considering the three key sustainability principles (economic, environmental, and sociocultural sustainability), the benefits that sustainable tourist behavior brings to destinations [40,41], the direct and indirect impacts (both positive and negative) of sustainable development [39,42,43], perceptions of tourist services [41,44], the role of communication in improving sustainability perceptions [45], perceptions of hotel services' usefulness [41], ecological impacts, destination planning and critical factors of sustainable energy [46], perceptions of visitors' impacts on destinations [47,48], and the effect of climate change on destination sustainability [49,50].

Regarding residents' sustainability perceptions, articles focus on how residents perceive tourism as a tool for territorial and economic development (generating jobs, improving destinations' facilities and resources, creating new businesses, and attracting investment [40,51,52]), environmental improvements (in natural resources and biodiversity protection), and sociocultural benefits (increasing the offer of sociocultural activities and improving facilities [51]). However, they also perceive possible negative effects of tourism—increased pollution, air and water contamination, noise pollution, and impacts on material and immaterial cultural resources [40,53–56]. In this vein, studies point out the need for better management by the destinations [52,57–59].

Within this group of perceptions, articles also discuss the importance of enabling job creation and new business opportunities [51]. However, some articles warn of the negative impacts caused by irresponsible tourist behavior, focusing on vandalism and pollution [55]. There is also a group of articles that highlight the perceptions of residents on the management of solid waste and the establishment of environmental protection bodies [51,55,59,60]. Finally, some articles [52] also advocate cooperation as a means of achieving sustainability. Amongst those, authors like Moyle et al. [57] and Nicholas et al. [61] suggest a new tourist management model based on community involvement.

Finally, studies addressing stakeholders' perceptions are far less abundant. Within this group, popular topics include perceptions on tourist safety, value for money, signposting, access, supply chain, and conservation of environmental and cultural resources [62]. Some also focus on positive perceptions, such as sustainable tourism development, versus negative perceptions, such as environmental impacts or local businesses' weak management skills [63]. Finally, it should be noted that this group places greater emphasis on the economic dimension and business management. Authors such as Kantarci et al. [64] mention the need for investment in the tourist sector, while Stoffelen et al. [63] point out the need to improve management skills.

**Table 6.** Content of the variables analyzed.

| Tourists | Authors | Residents | Authors | Stakeholders | Authors |
|---|---|---|---|---|---|
| Consumer loyalty | Modica et al. (2020) | Tourism as a driving force (economic and territorial) | Dillette et al. (2017); Lucrezi et al. (2017); | Tourist safety | Pérez et al. (2017) |
| Expected benefits | Ponnapureddy et al. (2020) | Possible negative effects of tourism | Ahmadian et al. (2014); Cottrell et al. (2007); Dillette et al. (2017); Gong et al. (2019); Wang (2019) | Value for money | Pérez et al. (2017) |
| Tourist satisfaction destination | Jacobsen (2007) | Actions to promote sustainable tourism | Andrade et al. (2019) | Signposting | Pérez et al. (2017) |
| Impact treatment or service received | Garrod et al. (2006); Tasci et al. (2017) | Nature conservation areas | Gong et al. (2019); Lee et al. (2019); Törn et al. (2008) | Access | Pérez et al. (2017) |
| Climate change | Brouder and Lundmark (2011); Clemente et al. (2020); Torres-Bagur et al. (2019) | Environmental concerns | Cottrell et al. (2007); Gong et al. (2019); Nicholas et al. (2009) | Offer | Pérez et al. (2017) |
| Education | Liu et al. (2016) | Quality of life | Lee et al. (2019); Lucrezi et al. (2017); | Resource conservation (heritage and environmental) | Pérez et al. (2017) |
| Socialization | Liu et al. (2016) | Employed opportunities | Lee et al. (2019) | Investment | Kantarci (2006) |
| Ecological impacts | Andereck et al. (2007); Modica et al. (2020); | Cultural activities | Lee et al. (2019) | Weak management by local companies | Stoffelen et al. (2020) |
| Sustainability and sustainable energy | Liu et al. (2016); Munanura et al. (2016) | Pollution | Gong et al. (2019) | Sustainable development | Stoffelen et al. (2020) |
| Role of communication | Vinzenz et al. (2019) | Perception of tourism management | Lucrezi et al. (2017); Moyle et al. (2010); Zamani-Farahani and Musa G. (2009) | | |
| Perceived usefulness | Ponnapureddy et al. (2017) | Resilience (social, economic, and ecological) | Dibra and Golemi (2014) | | |
| Visitor impacts | Andereck et al. (2007); Modica et al. (2020); Towner and Orams (2016) | Resident affinity with the destination | Sheldon and Abenoja (2001) | | |
| Visitor perception | Hillery et al. (2001) | | | | |
| Environmental, economic, and social attitudes | Nicholas and Thapa (2010) | | | | |
| Policy planning | Liu et al. (2016) | | | | |

## 6. Discussion

Regarding the productivity and impact metric structure of SPTH (bibliometric evaluative analysis results), in the last two decades, 101 articles have been published in 39 journals, and more than 100 authors have published in this field since 2001. Even so, most of these authors have only published between two and three papers; therefore, none stand out as particularly prolific. Regarding collaboration, despite the relatively high collaboration index (3.09), the network analysis shows that co-authored works are mostly written by scholars from the same institution. On the other hand, international collaboration is quite low. As argued by Chen et al. [65], international collaboration between authors is an effective way of creating and disseminating knowledge. Therefore, increasing the level of international collaboration could be very beneficial for the advance in knowledge on SPTH.

Regarding the media in which works are published, two journals concentrate a significant portion (30%) of publications: *Journal of Sustainable Tourism* (24 articles) and *Tourism Management* (12 articles). Therefore, these journals can be considered to be specialized on this subject. Concerning topic prominence, from the 37 journals, three topic clusters stand out. Within those, "tourism development; ecotourism; and destination management" is by far the most prominent. In the 99.523 percentile of prominence, the topic is positioned within the 99th percentile, exactly in the 0.47% best in the word in momentum and visibility. Regarding institutions' productivity, two stand out: Universiti Sains (Malaysia) and University of Florida (United States).

Concerning the SciVal crosser results on prominence of the top three topics, co-authorship, and co-word structure of SPTH (relational bibliometric analysis results), only one prominent topic stands out: "tourism development; ecotourism; destination management", with 37 articles. The crossover of the analysis on the SciVal platform reveals that the topic is not only relevant for tourism and hospitality, but also to other areas. In total, the journal has 3475 articles published in several domains. This journal includes 63% of all analyzed papers, which are equally distributed between the topics "Business, Management, and Accounting" and "Social Sciences" (see Figure 6). The crossover of this topic on the SciVal Platform also reveals 1553 citations, 20,280 Scopusviews, and an average CiteScore of 2.82.

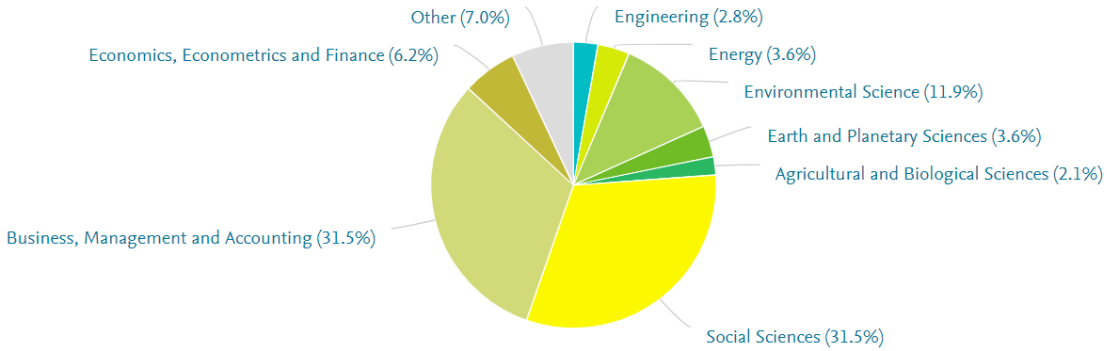


**Figure 6.** SciVal "Tourism development; ecotourism; destination management" topic by subject area. Source: SciVal Platform, 22 July 2020.

In terms of co-authoring productivity, one author clearly stands out: Ponnapureddy S., whose vertex connects to Priskin J., Ohnmacht T., Vizenz F., and Wirth W., all from the University of Applied Sciences and Arts—Lucerne, Switzerland. The results of the co-word structure in SPTH reveal two groups of words that are most frequently related: "tourism, sustainability, perceptions, development, and sustainable" and "tourist/tourists, impact, residents, environment, perception, community/communities, stakeholders, perceived, etc.". The latter originated the variables analyzed within the systematic review. The co-word structure in keywords follows the same pattern as the co-word structure in abstracts. The words "perceptions of sustainable tourism" stand out in the middle of the network structure, and they connect to the nodes "case" and "stakeholders". The "climate change" and "responsible tourism" nodes are also relevant.

Regarding the systematic bibliometric review, three types of SPTH structure were found: tourists', stakeholders', and residents' perceptions. Amongst those, 45.7% of articles address tourists' perceptions, 30.1% analyze residents' perceptions, and 15.2% examine stakeholders' perceptions. The largest group of articles related to tourists' perceptions focus on economic, sociocultural, and environmental (climate change) impacts, which is in line with the co-word structure analysis of abstracts (e.g., "tourists" presents 71 words and "impacts" presents 70 words). The studies of Nicholas and Tapa [37] and Hillery et al. [48] reveal that tourists perceive tourism as a cause of great environmental impact, as a result of the excessive number of people, vandalism, erosion, pollution, negative impacts on flora and fauna, etc. However, in another study group, tourists' perceptions are mainly related to the

benefits of sustainable tourism for destinations, the impacts of sustainable development, the utility of hotel services, and visitors' impacts on destinations. In this regard, Nicholas and Tapa [37] and Ponnapureddy et al. [41] argue that a destination that is committed to tourism development must support local businesses by developing tourism products with a low environmental impact.

Residents' perceptions are mostly focused on tourism as a tool for development (creating jobs, improving destination resources, enabling new businesses, and attracting investment), the improvement of natural resources and protection of biodiversity, the diversification of sociocultural activities, and the need for better destination management (solid waste and environmental protection) and community involvement. Perceptions on negative aspects (greater contamination, pollution, and vandalism) of tourism development are also addressed by studies such as those of Lee et al. [51] and Wang [56].

Lastly, stakeholders' perceptions are focused on the economic dimension (investments in the tourism sector, cost–benefit ratio, and the need to improve business management), which are addressed by authors like Stoffelen et al. [63]. On the other hand, the work carried out by Domínguez-Gómez and González-Gómez [66] is a relevant example of perceptions of heritage resources (access and tourist security) and on environmental impacts (conservation of environmental resources and development of sustainable tourism).

## 7. Conclusions

The present study aimed to assess the state of the art of Sustainability Perceptions in Tourism and Hospitality (SPTH), which was achieved by mapping research production in the area through a combination of evaluative, relational, and systematic bibliometric analysis techniques. This innovative methodology combines elements of quantitative and qualitative content analyses, which was shown to be effective in providing a holistic view of scientific literature in the area.

The bibliometric evaluative results showed that productivity and impact on SPTH are not particularly high. This is evidenced by the general number of articles published on Scopus within the last two decades (101), as well as metrics like citations per document (21.07) and citations per year per document (2.76). Cooperation between authors is also low, as evidenced by the collaboration index (3.09) and reflected in the network of authors. Moreover, the main top 10 network structure has only five vertices, which connect five authors from the same university (University of Applied Sciences and Arts—Lucerne, Switzerland). A less expressive vertex connects other authors, who are also from the same institution (Wageningen University, Wageningen, Netherlands). Regarding authors' productivity, although six are above average, none stand out as particularly prolific. Regarding journals' productivity, although 39 journals have papers on the topic, 30% of publications are concentrated in two journals: *Journal of Sustainable Tourism* and *Tourism Management*.

The bibliometric relational results of SciVal topic prominence reveal that three topics stand out. Amongst those, "tourism development; ecotourism; destination management" is by far the most relevant, with 36% of the articles. The topic emerged in 2001 and has been growing in terms of impacts since then. Regarding authors, only two stand out: Jaafar M., from Universiti Sains, Malaysia, and Thapa B., from the University of Florida, United States, each with two papers. The crossover of the analysis within the SciVal platform reveals that the topic extends to other areas of research. The worldwide overall performance is more than 3000 articles. In this context, the topic is positioned in the 99.523 percentile, and, therefore, has a high number of views (146,376). In any area of knowledge, a highly rated topic that covers several scientific areas, which is the case of SPTH, presents significant research opportunities.

The co-word structure in SPTH abstracts shows that the perceptions focus on "tourist/tourists, impact". Meanwhile, the co-word structure for Keywords Plus follows the same pattern, and the word "impacts" is directly connected with "tourism" and "perceptions". Moreover, "sustainable perceptions" is connected to "management", "visitor", "site", "heritage", and "impact". This conclusion provides a good indication of fertile avenues for future research. Moreover, from a practical perspective,

it represents an argument for the importance of focusing on destination planning and management for the minimization of negative impacts.

Regarding the structure of SPTH, the results show that most articles follow a common pattern. Namely, 44.5% of the articles focus on three types of perceptions: tourists', residents', and stakeholders' perceptions. The typologies of perceptions vary from group to group. Tourists' perceptions focus on loyalty, satisfaction, expected benefit, and visitors' impacts. Residents' perceptions follow a dichotomic logic. On the one hand, residents see tourism as a viable and more sustainable tool for development, namely for improving local economic performance, creating jobs, and driving improvements in infrastructures and facilities. On the other hand, they see it as an activity that generates a series of negative impacts, namely the deterioration of natural and cultural resources, pollution, and disturbance of everyday life. Finally, stakeholders' perceptions are also dichotomic. On the one hand, some stakeholders see tourism as a tool for sustainable development, with the potential to increase territorial competitiveness. On the other hand, some stakeholders focus on negative aspects, such as loss of authenticity, i.e., local values and heritage, and environmental degradation. Such findings reinforce the need for planning in order to attain sustainable development goals through tourism. Moreover, residents' perceptions also highlight the need for community involvement in order to ensure that the benefits brought about by tourism development match local populations' expectations.

Finally, the present research also had its shortcomings. The analysis of SPTH focused on the Scopus database. Although Scopus is one of the largest and highest-quality abstract and online citation databases of peer-reviewed literature, it does not comprise all the research production on any given topic, such as the "mountain tourism sustainability" studied by Bonadonna et al. [67], the "wetland areas tourism sustainability" studied by Ghoochani et al. [68], the "impact of tourists' perceptions on halal tourism destinations" studied by Rahman et al. [69], and the "willingness to pay more to stay in a sustainable hotel" studied by Boronat-Navarro and Pérez-Aranda [70]. Therefore, the results must be considered with caution, as they cannot be generalized to the entire scientific literature on SPTH. To overcome this limitation, future research should employ this methodology using other reliable peer-reviewed literature databases. Moreover, the search criteria, "perceptions" + "sustainability" + "tourism + hospitality", may be reductive and might not cover all articles published on SPTH. In this context, further studies may extend the search criteria to include destination image studies, as these also address tourists' perceptions. Finally, further studies should also include comparisons between different search criteria to characterize SPTH better.

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