

# The relationship of rural tourism with sustainable tourism and outdoor activities: A bibliometric analysis

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**Abstract** — A bibliometric study is a method used to evaluate the productivity of scientific results in quantitative terms. Bibliometricians apply mathematical and statistical methods to quantify scholarly communications. Using the Bibliometrix program, a database compiled from SCOPUS and Web of science was studied to study the different scientific and literary behaviours of rural tourism development, tourism sustainability, and outdoor activities. In the main database steps, 161 articles were analysed, of which 61 were SCOPUS articles, and 100 were Web of Science articles. As per this database, the relationship between rural tourism with sustainable tourism and outdoor activities, through a bibliometric analysis, looks to study the annual scientific production, the research impact, the authors, and articles most relevant to the themes of research trends over the years. Several interesting and important conclusions were obtained from these results for developing the themes. The results of this study indicate that sustainable tourism and rural tourism have extreme relevance to the studies carried out. Hence, rural tourism and outdoor activities are increasingly sustaining a relationship of partnership, much due to the influences of COVID-19.

**Keywords** - Bibliometric analysis; Sustainable Tourism; Rural Tourism; Outdoor activities; Sources Impacts.

## I. INTRODUCTION

Despite being disparate concepts connected to tourism, the concepts of rural tourism, sustainable tourism, and outdoor activities can be interrelated, complementing each other. Tourism is a service industry that can be associated with various niche markets. These niches can cooperate, increasing the quality of the final product offered. Therefore, rural tourism can be related to sustainable tourism, just as rural tourism can be associated with outdoor activities.

The rural world has been faced with significant challenges in terms of conditions for future development, closely related to the increase in unemployment, the decline, and ageing of the population is living there, and their relative remoteness from markets and services [1]. Hence, as part of the rural economic system, tourism entrepreneurs create and deliver meaningful

tourism experiences resulting in new local income, increased tax revenues, and stimuli for other sectors of the local economy [2]. The sustainable dimension of rural tourism is the most important of tourism's contributions to overall community development and tourism support [3].

This article aims to study different scientific and literary behaviours of rural tourism development, tourism sustainability, and outdoor activities through a bibliometric analysis. A bibliometric study is a method used to evaluate the productivity of scientific results in quantitative terms. Bibliographic data are processed through a workflow: study design, data collection, analysis, visualisation, and interpretation [4].

Thus, using the Bibliometrix program, a bibliometric analysis was made on the study themes "rural tourism", "sustainable tourism", and "outdoor activities", using a database compiled from SCOPUS and Web of Science.

This article was structured starting with the introduction, followed by the methodology and the bibliometric analysis with the discussion and the results of the bibliometric tests carried out. The tests carried out aimed to respond to the objective under study on the themes. At the end of the article, the main conclusions are presented.

In the process of collecting from the SCOPUS and Web of Science databases, some filtration processes were used, using only English-language articles from the social sciences (for SCOPUS), leisure sports tourism, sustainable green technology or interdisciplinary social sciences (for Web of Science).

In response to the objective of this study, the following will be analysed the articles and authors with more citations, the annual scientific production, and the impact of the studies along the scientific line.

## II. METHODOLOGY

The Bibliometrix R Package is an open-source tool for quantitative research in scientometrics and bibliometrics that

includes all the main bibliometric analysis methods. However, nowadays, Bibliometrix is more than just a statistical tool. It is becoming a community of international developers and users who exchange questions, impressions, opinions, and examples within an open-source project [4].

For this background, in the methodological process, a bibliometric analysis was carried out, using the Bibliometrix R program, on the study subjects “rural tourism”, “sustainable tourism” and “outdoor activities”, using a database compiled from SCOPUS - Elsevier and Web of Science – Clarivate.

The SCOPUS - Elsevier and Web of Science - Clarivate databases were analysed, limiting the search for documents to the following equations presented in Table I.

TABLE I. LIST OF EQUATIONS TO THE SEARCH FOR DOCUMENTS

SCOPUS	Web of Science
TITLE-ABS-KEY (“rural tourism” AND “sustainable tourism”) OR (“rural tourism” AND “outdoor activities”) AND (LIMIT-TO (DOCTYPE, “ar”)) AND (LIMIT-TO (SUBJAREA, “SOCT”)) AND (LIMIT-TO (LANGUAGE, “English”))	(“rural tourism” AND “sustainable tourism”) OR (“rural tourism” AND “outdoor activities”) Refined by - document types: articles, languages: English, web of science categories: hospitality leisure sport tourism or green-sustainable science technology or social sciences interdisciplinary.

Around the research methodology, only articles about rural tourism and sustainable tourism, or rural tourism and outdoor activities were refined. Articles were limited to the subject area of social sciences, in English and included in the following categories: hospitality leisure sport tourism or green-sustainable science technology, or interdisciplinary social sciences.

It was possible to reach at a database compiling SCOPUS and Web of Science articles through these search formulas. Then, from this database, looking for the articles and authors with more citations, the annual scientific production, and the impact of the studies along the scientific line.

After the research was carried out, 215 articles were extracted, of which 54 were repeated. In the main database steps, 161 articles were analysed, of which 61 were SCOPUS articles, and 100 were Web of Science articles.

Keywords Plus are understood as words or phrases that frequently appear in the titles of the references of an article and not necessarily in the title of the article or as Author Keywords. Thus, in view of this, this bibliometric study makes the appreciation and analysis of both keywords [5]. The databases studied articles contain more than 56 Sources and 438 co-authors. In particular, it processes more than 473 Keywords Plus and 578 Author Keywords.

### III. RESULTS

Through the Bibliometrix program, a bibliometric analysis was made on the themes understudy, “rural tourism”, “sustainable tourism”, and “outdoor activities”, looking for which articles have the most citations and what are the most frequent keywords. Specifically, the pieces with influence in the scientific literature were analysed, as shown in Table II, by presenting the articles and the TC (total of citations).

TABLE II. MOST GLOBAL CITED DOCUMENTS

TC	Article
561	Sims, R. (2009). Food, place and authenticity: local food and the sustainable tourism experience. <i>Journal of Sustainable Tourism</i> , 17(3), 321-336. Doi: 10.1080/09669580802359293
315	Lane, B. (1994). What’s rural tourism?. <i>Journal of Sustainable Tourism</i> , 2(1). Doi:10.1080/09669589409510680
186	Lane, B. (2005). Sustainable rural tourism strategies: A tool for development and conservation. <i>Revista Interamericana de Ambiente y Turismo-RIAT</i> , 1(1), 12-18. Doi:10.1080/09669589409510687
163	Luu, T. T. (2017). CSR and organisational citizenship behaviour for the environment in hotel industry: The moderating roles of corporate entrepreneurship and employee attachment style. <i>International Journal of Contemporary Hospitality Management</i> . Doi:10.1108/IJCHM-10-2014-0510
136	Saxena, G. C. G., & Oliver, T.(2007). Conceptualising integrated rural tourism. <i>Tourism Geographies</i> , 9(4), 347-370. Doi:10.1080/14616680701647527
118	Lane, B., & Kastenholz, E. (2015). Rural tourism: the evolution of practice and research approaches–towards a new generation concept?. <i>Journal of Sustainable Tourism</i> , 23(8-9), 1133-1156. Doi:10.1080/09669582.2015.1083997
103	Rebollo, J. F. V., & Baidal, J. A. I. (2003). Measuring sustainability in a mass tourist destination: pressures, perceptions and policy responses in Torrevieja, Spain. <i>Journal of Sustainable Tourism</i> , 11(2-3), 181-203. Doi: 10.1080/09669580308667202
101	Barbieri, C. (2013). Assessing the sustainability of agritourism in the US: A comparison between agritourism and other farm entrepreneurial ventures. <i>Journal of Sustainable Tourism</i> , 21(2), 252-270. Doi:10.1080/09669582.2012.685174
101	Dickinson, J. E., & Dickinson, J. A. (2006). Local transport and social representations: Challenging the assumptions for sustainable tourism. <i>Journal of Sustainable Tourism</i> , 14(2), 192-208. Doi:10.1080/09669580608669052
100	Muresan, I. C., Oroian, C. F., Harun, R., Arion, F. H., Porutiu, A., Chiciudean, G. O., Todea, A., & Lile, R. (2016). Local residents’ attitude toward sustainable rural tourism development. <i>Sustainability</i> , 8(1), 100. Doi:10.3390/su8010100

The TOP3, most cited documents correspond to Sims, R. (2009), issues related to sustainable tourism experience (TC=561), followed by Lane, B. (1994) published article which focuses on what’s rural tourism (TC=315). Lastly, the article published also by Lane, B. (2005) about sustainable rural tourism strategies (TC=186).

The authors’ citations and scientific production were highlighted, and it was considered relevant to know which authors were notable for their citations and scientific production. Regarding the relationship between the authors and the situations, Table III is shown.

TABLE III. MOST GLOBAL CITED AUTHORS WITH H-INDEX

Authors	H-Index	TC
Lane B.	3	619
Sims R.	1	561
Kastenholz E.	4	242
Omerzel DG.	1	163
Clark G.	1	136
Ilbery B.	1	136
Oliver T.	1	136
Saxena G.	1	136
Barbieri C.	2	108
Baidal JAI.	1	103

Similar to the most cited articles, the authors with the most citations are Pane B., Sims R. and Kastenholz E. Thus, the authors’ scientific production was analysed. Table IV shows the scientific production of the authors with the highest number of productions.

TABLE IV. AUTHORS WITH THE HIGHEST SCIENTIFIC PRODUCTION

Authors	Articles
Castanho R.	6
Couto G.	5
Carvalho C.	4
Kastenholz E.	4
Batista MDG.	3

From Table IV, when compared with the citations, author Kastenholz E. (4 articles) stands out both in scientific production and citations. The authors with more scientific production, Castanho R. (6 articles), Couto G. (5 articles), Carvalho C. (4 articles), and Batista MGD. (3 articles), co-author articles from the University of the Azores.

Hence, to study the affiliations that stand out the most, Table V shows which universities stand out from this database regarding rural, sustainable, and outdoor activities.

TABLE V. DISTINGUISHED AFFILIATIONS OF THE SCIENTIFIC PROCESS

Affiliations	Country	Articles (n)
University of the Azores	Portugal	11
Griffith University	Australia	5
Southern Cross University	Australia	5
University of the Aveiro	Portugal	5
University of Bologna	Italy	5

As the authors have more productions, this table shows that the University of the Azores stands out for its scientific production on these themes. This highlights Portugal’s scientific

production. Then the Australian and Italian universities stand out in the table of the five affiliations with more production.

In this context, it was considered important to understand the difference between production and citation of the countries with more relevance on these themes, presented in Figure 1.

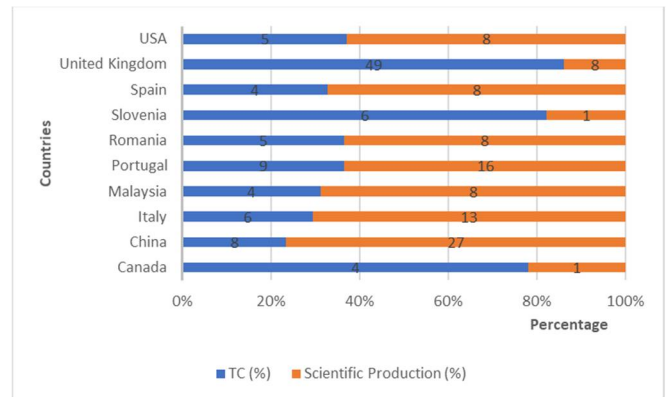


Figure 1. List of countries with more citations vs scientific production.

Specifically, Figure 1 shows that the countries with citations greater than the number of productions are the United Kingdom, Spain and Canada. The remaining countries have a scientific production more significant than citations.

The annual scientific production is used to analyse when research on the topics under study has grown, understanding the process of development. Therefore, Figure 2 presents data from the Bibliometrix program regarding the annual scientific production on these topics.

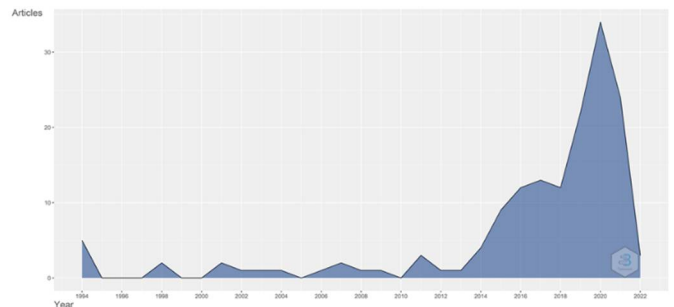


Figure 2. Annual Scientific Production.

Figure 2, shows that research on these themes grew from 2015 onwards. However, in 2020, scientific production on rural, sustainable, and outdoor activities showed the best results. Observes that there may have been an influence of the impact of the pandemic, as the pandemic allowed for the creation of a greater scientific output as a result of isolation.

The sources that have been most dedicated to research and publications on these themes are Sustainability and the Journal of Sustainable Tourism, as shown in Table VI.

TABLE VI. SOURCES WITH THE MOST PUBLICATIONS IN THE THEMATIC AREAS.

Sources	Articles (n)
Sustainability	46
Journal of Sustainable Tourism	25
Asia Pacific Journal of Tourism Research	6
Tourism Geographies	6
Current Issues in Tourism	5

After carrying out the previous analysis, it was also looked to understand which keywords showed a more significant trend (Figure 3).



Figure 3. Articles' wordcloud.

It was concluded that the keywords with more influence in this set of scientific articles consist of Rural Tourism, Sustainable Tourism, Tourism, Sustainable Development and Sustainability.

Observing these words as the most highlighted, it was pertinent to study the clusters by compilation of documents, as is observed in Figure 4.

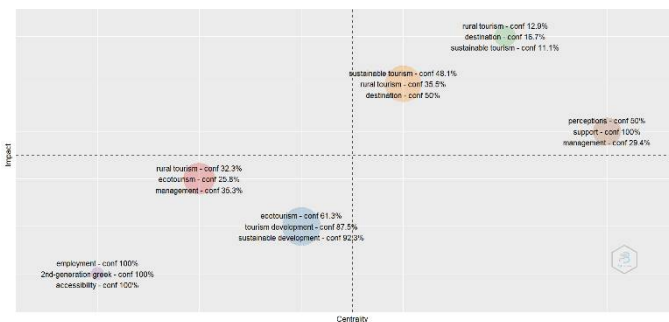


Figure 4. Clusters by documents coupling.

As shown in Figure 4, in the compilation of documents 6 clusters were highlighted as the groups with a higher occurrence in the database studied.

It was understood that the words that are in the clusters are those that have a greater centrality and co-occurrence among themselves. Specifically, the groups of rural tourism, destination, and sustainable tourism are highlighted as the most impacting, and ecotourism, tourism development, and sustainable development as the most centralised cluster.

It is analysed that each numbering present in words summarises the percentage that these words occur in the articles. From this review, were identified the articles most researched and where the research should be heading.

Specifically, it can be seen from this analysis that studies on employment, 2nd generation Greek, and accessibility are terms widely used in scientific research. But on the other hand, future research should focus on studies of rural tourism, destination, and sustainable tourism.

#### IV. CONCLUSIONS

Tourism is one of the fastest-growing industries and a driving force for many developed and developing economies. When there were analysing sustainable tourism as a condition of rural tourism, it is understood that the ability of rural tourism to complement other activities and provide employment opportunities to locals is thus conditioned by annual stability. While sustainable tourism develops its approaches to the field, new developments in the social sciences and broader technological development require that sustainable tourism studies move with the times in response to these more general changes. Outdoor activities can be combined with these concepts to complement the creation of activities and tourism development.

Several interesting and important conclusions were obtained from these results for developing the themes. Expressly, it was understood that the TOP3 most cited documents highlight the article by Sims, R. (2009) as the one that created the most impact on research on the topic This article studies issues related to the sustainable tourism experience. Next, articles published on rural tourism and sustainable rural tourism strategies also stand out.

In the authors with more cited productions, the authors: Pane B., Sims R. and Kastenholz E. stand out; however, the authors with a more outstanding scientific production, Castanho R., Couto G., Carvalho C. and Batista MGD., stand out.

The affiliations that stood out in scientific production were the University of the Azores, representing Portugal in scientific production in the areas under study. Next, Australian and Italian universities stand out in the five affiliations with the most production charts. Specifically, this figure shows that the countries with citations greater than the number of productions are the United Kingdom, Spain, and Canada. The remaining countries have a scientific production more significant than citations.

This study also understood that research on these topics grew from 2015. However, in 2020, the scientific production on rural, sustainable, and outdoor activities showed the best results. The sources most dedicated to research and publications on these topics are Sustainability and the Journal of Sustainable Tourism. It was also understood that the research trends in these themes are directed toward Rural Tourism, Sustainable Tourism, Tourism, Sustainable Development and Sustainability.

In summary, it was understood that sustainable and rural tourism have extreme relevance to the studies carried out. Hence, rural tourism and outdoor activities are increasingly sustaining a relationship of partnership, much due to the influences of covid-19.

Finally, this study will serve as a source of research for other studies on the subject. In the future, studies will be made using this analysis, particularly the elaboration of a systematic review on rural tourism and sustainable tourism.

Furthermore, it is not suggested in the future that this topic follows this pandemic process and path, continuing to be analysed on outdoor activities, but extending its study to other keywords and extending the research to other databases.

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#### REFERENCES

- [1] V. Santos, P. Ramos, B. Sousa, N. Almeida, and M. Valeri, "Factors influencing touristic consumer behaviour," *J. Organ. Chang. Manag.*, pp. 1–21, 2021, doi: 10.1108/JOCM-02-2021-0032.
- [2] B. A. Carmichael and S. Ainley, "Rural Tourism Entrepreneurship Research," *Tour. Plan. Dev.*, vol. 11, no. 3, pp. 257–260, 2014, doi: 10.1080/21568316.2014.889742.
- [3] E. Panyik, "Rural Tourism Governance: Determinants of Policy-makers' Support for Tourism Development," *Tour. Plan. Dev.*, vol. 12, no. 1, pp. 48–72, 2015, doi: 10.1080/21568316.2014.960603.
- [4] H. Dervis, "Bibliometric analysis using bibliometrix an R package," *J. Scientometr. Res.*, vol. 8, no. 3, pp. 156–160, 2019, doi: 10.5530/JSCIRES.8.3.32.
- [5] Zhang, J., Yu, Q., Zheng, F., Long, C., Lu, Z., and Duan, Z., "Comparing keywords plus of WOS and author keywords: A case study of patient adherence research," *J. of the Association for Information Science and Technology*, vol. 67, no. 4, pp. 967–972, 2016, doi: 10.1002/asi.23437.
- [6] R. Sims, "Food, place and authenticity: local food and the sustainable tourism experience," *J. of Sustainable Tourism*, vol. 17, no. 3, pp. 321–336, 2009, doi: 10.1080/09669580802359293.
- [7] B. Lane, "Whats rural tourism?," *J. of Sustainable Tourism*, vol. 2, no. 1, 1994, doi: 10.1080/09669589409510680.
- [8] B. Lane, "Sustainable rural tourism strategies: A tool for development and conservation," *Revista Interamericana de Ambiente y Turismo-RIAT*, vol. 1, no. 1, pp. 12–18, 2005, doi: 10.1080/09669589409510687.
- [9] T. T. Luu, "CSR and organisational citizenship behavior for the environment in hotel industry: The moderating roles of corporate entrepreneurship and employee attachment style," *International Journal of Contemporary Hospitality Management*, 2017, doi: 10.1108/IJCHM-10-2014-0510.
- [10] G. C. G. Saxena and T. Oliver, "Conceptualising integrated rural tourism," *Tourism Geographies*, vol. 9, no. 4, pp.347-370, 2007, doi: 10.1080/14616680701647527.
- [11] B. Lane and E. Kastenzholz, "Rural tourism: the evolution of practice and research approaches—towards a new generation concept?," *Journal of Sustainable Tourism*, vol. 23, no.8-9, pp. 1133-1156, 2015, doi: 10.1080/09669582.2015.1083997.
- [12] J. F. V. Rebollo and J. A. I. Baidal, "Measuring sustainability in a mass tourist destination: pressures, perceptions and policy responses in Torrevieja, Spain", *Journal of Sustainable Tourism*, vol. 11, no. 2-3, pp. 181-203, 2003, doi: 10.1080/09669580308667202.
- [13] C. Barbieri, "Assessing the sustainability of agritourism in the US: A comparison between agritourism and other farm entrepreneurial ventures," *Journal of Sustainable Tourism*, vol. 21, no. 2, pp. 252-270, 2013, doi: 10.1080/09669582.2012.685174.
- [14] J. E. Dickinson and J. A. Dickinson, "Local transport and social representations: Challenging the assumptions for sustainable tourism," *Journal of Sustainable Tourism*, vol.14, no. 2, pp. 192-208, 2006, doi: 10.1080/09669580608669052.