

The Panorama of Publications on Geoturism in Brazil from bibliometric analysis

Panorama das Publicações sobre Geoturismo no Brasil a partir da análise bibliométrica

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ABSTRACT: This article aims to present the distribution of scientific publications on Geotourism, carried out in Brazil, from 2010 to 2019. For this, a census was carried out based on the platforms Elsevier, Google Scholar, Plataforma-Capes, Scielo, Oasis, and Speel, which allowed us to identify the published works and to filter them according to the parameters: (a) being published in journals: (b) having the term geotourism, geotouristic (masculine noun) or geotouristic (feminine noun) in the title; (c) being within the stipulated period; and (d) being in any language, as long as it has been published in Brazil. Along with the survey, bibliographical research was carried out to support the interpretations and discussions. The results focused on five groups involving year, language, study location, publication, and authors. The main results show that there was an increase in the number of articles in that decade; Minas Gerais is the state with more articles; UFRJ's Anuário de Geociências (Geosciences Yearbook) is the journal that publishes the most on the topic; there is a greater number of articles produced in pairs; the Federal University of Uberlandia has the most significant number of publications; the ten main authors who publish about Geotourism in Brazil were identified.

KEYWORDS: Bibliometry; Geotouristic; Tourism; Publications; Articles.

RESUMO: Este artigo tem como objetivo apresentar a distribuição das publicações científicas sobre geoturismo, realizadas no Brasil, no período de 2010 a 2019. Para tanto, foi realizado um censo com base nas plataformas Elsevier, Google Scholar, Plataforma-Capes, Scielo, Oasis e Speel, o que permitiu identificar os artigos publicados e filtrá-los de acordo com os parâmetros: (a) serem publicados em periódicos científicos: (b) ter no título o termo geoturismo, geoturístico, geoturística: (c) estar dentro do período estipulado; e (d) estar em qualquer idioma, desde que tenha sido publicado no Brasil. Junto com a pesquisa, foi realizada uma análise bibliográfica e documental para subsidiar as interpretações e discussões. Os resultados se concentraram em cinco grupos envolvendo: ano, idioma, local do estudo, periódico e autores das publicações. Os principais resultados mostram que houve aumento no número de artigos; Minas Gerais é o estado com mais artigos; o Anuário de Geociências da UFRJ é a revista que mais publica sobre o tema; há um maior número de artigos produzidos aos pares; a Universidade Federal de Uberlândia tem o número mais expressivo de publicações; foram identificados os dez principais autores que publicam sobre Geoturismo no Brasil.

PALAVRAS CHAVE: Bibliometria; Geoturístico; Turismo; Publicações; Artigos.

Introdution

Geotourism is a tourist activity that has gained international prominence in the last decades. From the academic point of view, the interest of scientists in the subject has generated an intense debate in discussion forums, lives, congresses, and various types of summits. In the practical field, it is becoming more popular and gaining supporters. Not only scientists are moving towards the development and recognition of geotourism (PEREIRA 2018; COUTINHO *et al.*, 2019; BENTO *et al.*, 2020), but also public managers have already understood the activity's capacity to promote destinations through a sustainable vision (NASCIMENTO *et al.*, 2015; MEDEIROS *et al.*, 2017; SILVA FILHO; MARACAJÁ, 2019). It reinforces the local population's sense of belonging and encourages the conservation of natural resources, uniting the abiotic elements (geodiversity) to the biotic ones (biodiversity). Moreover, the involvement with the tourist trade along with the intentions of the first interested parties can create a solid socio-environmental economic base in the places of interest.

Among the justifications to hold an analysis of this type in Brazil, there is a lack of studies mapping the scientific production on geotourism, for instance. This research allows us to know the number of articles published in the country; institutions, states, and regions with articles on geotourism, the main authors, and the studied locations; all this considering 2010-2019 time-lapse. Thus, the present study makes it possible to know which fields or places deserve greater attention in future research concerning geotourism.

Another important observation and relevance is the fact that the Brazilian national territory has been extensively studied by the authors of the theme (RUBAN, 2015; DUARTE *et al.* 2020; HERRERA-FRANCO *et al.* 2020; among others), which leads us to believe in the importance of Brazilian potential for geotourism. According to Conti *et al.* (2021), geotourism may be, currently, the field of most coverage and growth when considering an activity that combines visitation and science, being a reality in several countries. Elicher *et al.* (2021) also show that geotourism implies a relationship between tourism and science, thus it is important to understand the scientific production on the subject, and thus analyze geotourism and its relationship with Scientific Tourism based on Iberoamerican scientific production.

Given the importance of a bigger understanding of publications involving geotourism in the national territory, this work seeks to understand how the articles on geotourism are distributed in Brazil by allocating scientific publications held from 2010 to 2019. The bibliometric method detailed in the methodology part of this article was used to carry out this research. According to Quevedo-Silva *et al.* (2016), its application helps understand new themes and areas, which can aid, for example, in the identification of trends. That understanding is essential for this work because, although it focuses on domestic territory, this method is used by several authors of the theme, who have even evidenced the Brazilian scientific contribution to international geotourism.

Materials and methods

This bibliometric study identified the scientific articles published in journals in Brazil with the theme of geotourism. It is an exploratory and descriptive study with a quantitative approach, which allowed us to know the number of articles published in

Brazil, as well as the institutions, states, and regions that are performing such publications, the main authors, and the locations to which the studies refer.

Exploratory research aims to learn more about the problem to make it more explicit or to formulate hypotheses. The planning of this research is flexible, which allows considerations of various aspects of the studied object. Descriptive research, on the other hand, aims to characterize the object of study. In general, it takes the form of a survey, which allows describing the situation in which the object of study was when the research was carried out (DENCKER 1998; GIL 2002). Figure 1 shows a scheme with the stages of the study and the parameters taken into account to collect the researched material.

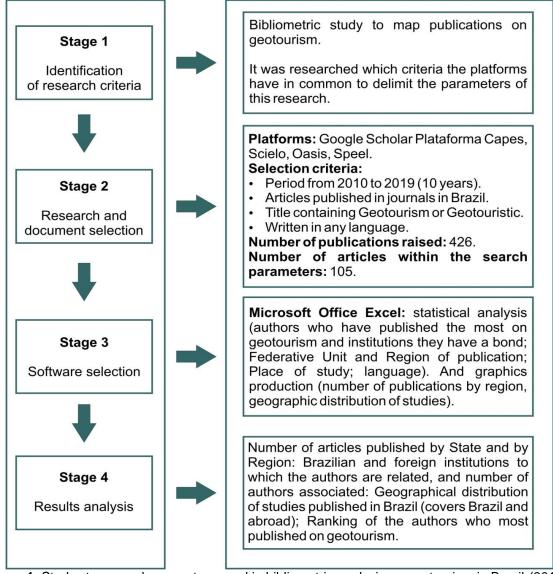


Figure 1: Study stages and parameters used in bibliometric analysis on geotourism in Brazil (2010 to 2019). **Source**: elaborated by the authors (2022).

Figura 1: Etapas do estudo e parâmetros utilizados na análise bibliométrica sobre geoturismo no Brasil (2010 a 2019). **Fonte**: elaborado pelos autores (2022).

The number of works surveyed, considering the stipulated parameters, is presented as follows: 291 (68%) with the term Geotourism, 104 (24%) with Geotouristic (masculine noun), and 31 (8%) with Geotouristic (feminine noun), for a total of 426 studies. After listing the works with the three terms in the title, the next

step was to eliminate those that are not articles; those that have not been published in journals; those that were published outside Brazil; and repeated works were filtered, on the same platform and on different platforms, leaving a total of 105 articles published in journals in Brazil.

Results and Discussion

The survey carried out on articles published in journals in Brazil, referring to the period of 2010-2019, allowed the presentation of data from different perspectives. The results were separated into five groups: (a) year; (b) language; (c) study location; (d) publication; and (e) the authors (Figure 2).

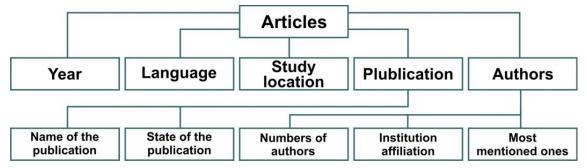


Figure 2: Organogram of analyzed categories grouping with the researched articles of geotourism. **Source**: Elaborated by the authors (2022).

Figura 2: Organograma de categorias analisadas agrupando com os artigos de geoturismo pesquisados. **Fonte**: elaborado pelos autores (2022).

Year, Language, and Study Location

According to Figure 3, it is evident the growth in the number of publications related to geotourism in the last ten years with occasional minor drops in the years 2013 and 2018. The increase in the quantity went from four articles in 2010 to 16 articles at the end of the decade. Therefore, four times increase.

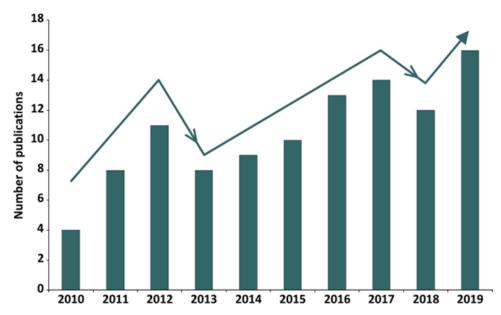


Figure 3: Graph of total publications of geotourism per year in Brazil (2010 to 2019). **Source**: Elaborated by the authors (2022).

Figura 3: Gráfico do total de publicações de geoturismo por ano no Brasil (2010 a 2019). **Fonte**: elaborado pelos autores (2022).

As for the language, it is identified from the total of analyzed articles, 97 written in Portuguese, six in English, and two in Spanish (Figure 4).

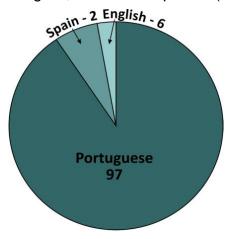


Figure 4: Number of publications in the three most used languages.

Source: Elaborated by the authors (2022).

Figura 4: Número de publicações nas três línguas mais utilizadas.

Fonte: elaborado pelos autores (2022).

Table 1 and Figure 5 show the geotourism articles distribution regarding researched areas in Brazilian states and other national and international regions. It can be seen that of the 27 states, only 20 (74%) have published articles. Among the states, there is a predominance of the Southeast region, with 3 states, followed by the Northeast, with 7 states.

Table 1: States with studies in geotourism in Brazil (2010-2019).

Source: Elaborated by the authors (2022).

Tabela: Estados com estudos em geoturismo no Brasil (2010-2019).

Fonte: elaborado pelos autores (2022).

Fonte: elaborado pelos autores (2022).		
States	Number of articles	
Minas Gerais	26	
Rio de Janeiro	7	
Rio Grande do Norte	6	
Paraná	6	
Rio Grande do Sul	5	
Piauí	5	
Paraíba	5	
Pernambuco	4	
Ceará	4	
São Paulo	4	
Roraima	3	
Amapá	2	
Mato Grosso	2	
Maranhão	2	
Goiás	2	
Mato Grosso do Sul	1	
Santa Catarina	1	
Pará	1	
Bahia	1	
Amazonas	1	
Total	88	

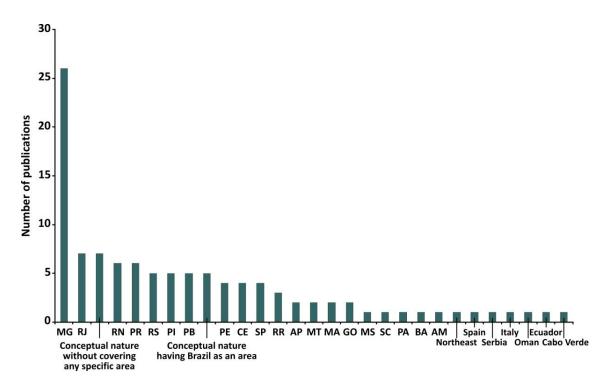


Figure 5: Graph of distribution of publications regarding the surveyed areas of geotourism in Brazil and abroad (2010-2019). **Source**: Elaborated by the authors (2021)

Figura 5: Gráfico de distribuição das publicações referentes às áreas de geoturismo pesquisadas no Brasil e no exterior (2010-2019). **Fonte**: elaborado pelos autores (2022).

It is clear that the State of Minas Gerais is the most representative with 26 publications; secondly comes Rio de Janeiro with seven studies; thirdly and with six publications; and in fourth place are the states of Rio Grande do Sul, Piauí and Paraíba with five studies each. With four articles, there are Pernambuco, Ceará and São Paulo; with three: Roraima; with two: Amapá, Mato Grosso, Maranhão, and Goiás. Finally, with one article published there are the States of Mato Grosso do Sul, Santa Catarina, Pará, Bahia, and Amazonas (Table 1).

Seven Federative Units do not have any study in this perspective, they are: Acre, Alagoas, Federal District, Espírito Santo, Rondônia, Sergipe, and Tocantins.

In addition to the publications by states, there have been identified seven articles of conceptual nature without covering any specific area; four covering Brazil as a whole, and one dedicated to the Northeast. Finally, six articles, despite being published in national journals, deal with areas abroad, emphasizing countries such as Spain, Serbia, Italy, Oman, Ecuador, and Cape Verde. A total of 106 locations are noted because one article researches one area in Brazil - Paraná State - and one in Spain - the Autonomous Community of Zaagaron - and thus counted twice.

Publications

Among the different national publications, the Anuário do Instituto de Geociências – AIGEO (Institute of Geosciences Yearbook) (UFRJ) is the one with the most publications, with 11 articles (Figure 6); followed by the Revista Brasileira de Ecoturismo (Brazilian Ecotourism Magazine)(UNFESP) with six articles; Revistas Terra Plural (Plural Earth Magazine) (UEPG) and Geonomos (UFMG), both with five articles; Revista Geociências (Geoscience Magazine) (UNESP) with four articles;

Revista de Geociências do Nordeste (Geosciences of the Northeast Magazine) (UFRN), Ciência e Sustentabilidade (Science and Sustainability) (UFCA) and Geonorte (UFAM), all with three articles. Fifteen other journals have up to two articles published, while thirty-five journals have one article published. The AIGEO even has the word "geotourism" highlighted in the word cloud on special cover of 2020 (Figure 7).

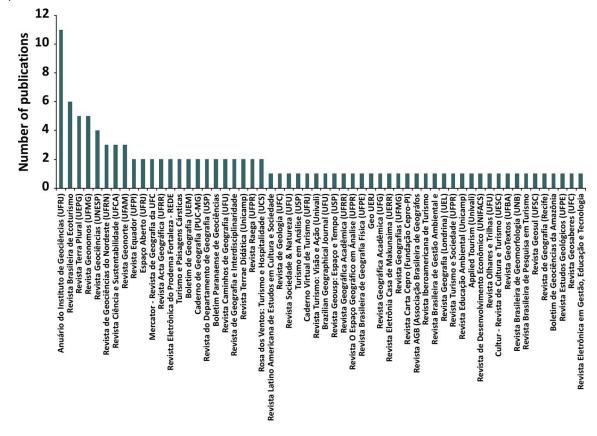


Figure 6: Graph of distribution of publications of geotourism concerning the journals used in Brazil (2010-2019). **Source**: Elaborated by the authors (2022).

Figura 6: Gráfico de distribuição das publicações de geoturismo referentes aos periódicos utilizados no Brasil (2010-2019). **Fonte**: elaborado pelos autores (2022).

Analyzing the States where the researched journals are published, São Paulo has the most significant number of articles in 21 publications. Rio de Janeiro is in second place with 18 articles, while Paraná has 15 articles. Minas Gerais comes next with ten articles, while Ceará has nine articles. Rio Grande do Sul presents five articles; Amazonas and Roraima, both with four ones; Pernambuco, Piauí, Rio Grande do Norte and Bahia, all withthree articles; Maranhão with 2 publications and finally, Alagoas, Goiás, Paraíba, Santa Catarina and Brasília, each with one article (Figure 8). As noted, the regions where the analyzed journals are published are divided as follows: 47% in the Southeast; 24% in the Northeast; 20% in the South; 7% in the North; and 2% in the Central-West.

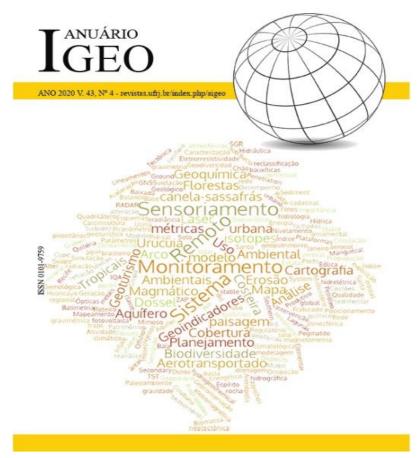


Figure 7: Cover of Volume 43, Number 04 of 2020 from the UFRJ's Anuário do Instituto de Geociências (Institute of Geosciences Yearbook), with the word "geotourism" highlighted in the word cloud. **Source**: Anuário do Instituto de Geociências (2020).

Figura 7: Capa do volume 43, Número 04 de 2020 da Anuário do Instituto de Geociências da UFRJ, com a palavra "geoturismo" destacada na nuvem de palavras.

Fonte: elaborado pelos autores (2022).

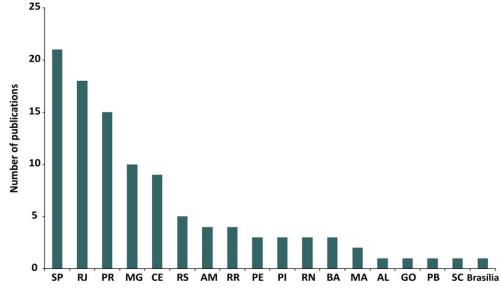


Figure 8: Distribution of geotourism articles in the Brazilian States (2010-2019) where the journals are published. **Source**: Elaborated by the authors (2022).

Figura 8: Distribuição dos artigos de geoturismo nos estados brasileiros (2010-2019), onde os periódicos são publicados. **Fonte**: elaborado pelos autores (2022).

Authors

Articles can be produced individually or in partnerships between different authors. Considering the subject under discussion, we note that 42 articles were produced in pairs and 30 articles in a trio, comprising almost 70% of the publications analyzed. Individually, only ten articles were computed (Figure 9).

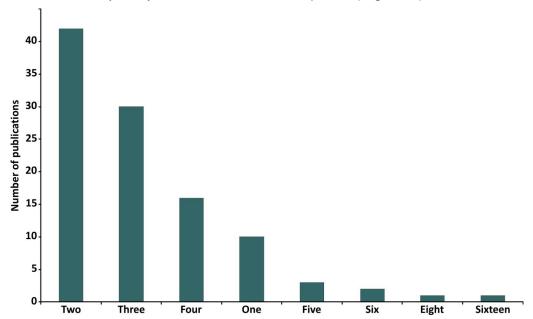


Figure 9: Distribution of geotourism publications in Brazil (2010-2019) concerning the number of authors per article. **Source**: Elaborated by the authors (2022).

Figura 9: Distribuição das publicações de geoturismo no Brasil (2010-2019) quanto ao número de autores por artigo. **Fonte**: elaborado pelos autores (2022).

In order to know the institutions (national and international) to which the authors - of the articles on geotourism published in journals in Brazil - are linked, there were listed the institutions, the number of times they were referenced, and the number of authors related to them (Tables 2 and 3, Figure 10).

The institutions are organized according to the following criteria: the number of times they were presented as a relation; in the event of a tie, the list with the highest number of associated authors is listed first; in the event of a tie again, alphabetical order follows.

In the case of Brazilian institutions, there are 54, with 266 referenced by 182 authors - the total shown in Table 2 is 190. Still, eight authors were counted twice, as they presented different institutions in different articles. The values between authors and institutions are different since the same author has different publications.

The Brazilian institutions to which the authors presented a link are mostly Public institutions, most of which come from Federal Universities (26) and State Universities (14). There are also three Federal Institutes of Education, Science and Technology, three Private Institutions, and eight that are neither Universities nor Institutes of Education.

Table 2: Brazilian institutions and number of related authors of geotourism in Brazil (2010-2019). **Source**: Elaborated by the authors (2022).

Tabela 2: Instituições brasileiras e número de autores relacionados ao geoturismo no Brasil (2010-2019). **Fonte:** elaborado pelos autores (2022)

	2019). Fonte: elaborado pelos autores (2022).			
Nº	Authors' institution affiliation	Number of times presented as an affiliation	Number of authors related	
1	Universidade Federal de Uberlândia	27	11	
2	Universidade Federal do Rio Grande do Norte	24	18	
3	Universidade Federal do Rio de Janeiro	22	15	
4	Universidade Federal de São João Del-Rei	17	10	
5	Universidade Federal de Ouro Preto	15	4	
6	Universidade Federal de Minas Gerais	14	8	
7	Universidade Federal de Santa Maria	13	10	
8	Universidade Estadual de Ponta Grossa	11	7	
9	Universidade de São Paulo	10	6	
10	Universidade Federal do Piauí	8	6	
11	Universidade Federal de Pernambuco	8	5	
12	Universidade Estadual do Rio de Janeiro	6	6	
13	Universidade Estadual do Ceará	6	5	
14	Universidade Federal de Roraima	6	4	
15	Universidade Federal do Pampa	5	5	
16	Universidade Estadual Paulista 5		4	
17	Instituto Federal Catarinense 4		4	
18	Jniversidade Federal do Cariri 4		4	
19	Universidade Regional do Ceará	4	4	
20	Universidade Estadual do Rio Grande do Norte	4	3	
21	Pontifícia Universidade Católica, MG	4	3	
22	Universidade de Pernambuco	3	3	
23	Universidade Federal do Goiás	3	3	
24	Universidade Federal do Paraná	3	3	
25	Instituto Federal do Rio Grande do Norte	2	2	
26	Parque Estadual de Ibitipoca	2	2	
27	Universidade Estadual do Maranhão	2	2	
28	Universidade Estadual do Piauí	2	2	
29	Universidade Estadual de Campinas	2	2	
30	Universidade de Guarulhos	2	2	
31	Universidade Federal da Paraíba	2 2	2 2	
32	Universidade Federal de Pelotas	2	2	
33	Universidade Federal do Estado do Rio de Janeiro Universidade Federal do Maranhão	2	1	
34 35	Centro Nacional de Pesquisa e Conservação de Cavernas	1	1	
36	· · · · · · · · · · · · · · · · · · ·	1	1	
37	Conselho de Monumentos Geológicos Departamento Nacional de Produção Mineral do RJ	1	1	
38	Instituto Federal de Brasília	1	1	
39	Petrobrás (Rio de Janeiro)	1	1	
40	Sebrae-MA	1	1	
41	Secretaria de Planejamento e Desenvolvimento de Roraima	1	1	
42	Serviço Geológico do Paraná	1	1	
43	Universidade Católica do Salvador	1	1	
44	Universidade de Brasília	1	1	
45	Universidade de Brasilia Universidade Estadual do Goiás	1	1	
46	Universidade Estaddar do Golds Universidade Federal da Grande Dourados	1	1	
47	Universidade Federal de Campo Grande	1	1	
48	Universidade Federal de Santa Catarina	1	1	
49	Universidade Federal do Amapá	1	1	
50	Universidade Federal do Mato Grosso	1	1	
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Nº	Authors' institution affiliation	Number of times presented as an affiliation	Number of authors related
51	Universidade Federal do Mato Grosso do Sul	1	1
52	Universidade Federal do Pará	1	1
53	Universidade Federal do Rio Grande do Sul	1	1
54	Universidade Nove de Julho, São Paulo	1	1
	Total	266	190

Table 3: Foreign institutions and number of related authors of geotourism in Brazil (2010-2019). **Source**: Elaborated by the authors (2022).

Tabela 3: Instituições estrangeiras e número de autores relacionados ao geoturismo no Brasil (2010-2019). **Fonte**: elaborado pelos autores (2022).

Nº	Authors' institution affiliation	Number of times presented as an affiliation	Number of authors related
1	Universidad Regional Amazónica Ikiam (Ecuador)	7	7
2	Universidade de Cabo Verde	2	2
3	Universidade de Coimbra (Portugal)	4	3
4	University Novi Sad (Sérvia)	2	2
5	Universidade de Trás-os-Montes e Alto Douro (Portugal)	2	1
6	Universidade de Zagaroza (Spain)	2	1
7	Geotourism Association, Genoa, Italy	1	1
8	Georg-August-UniversitätGöttingen (Alemanha)	1	1
9	GermanUniversityof Technology in Oman	1	1
10	Instituto Geologico Y Minero de España (Spain)	1	1
11	Martin-Luther-University Halle-Wittenberg (país?)	1	1
12	Universidad de Guayaquil (Ecuador)	1	1
Tota	al	25	22

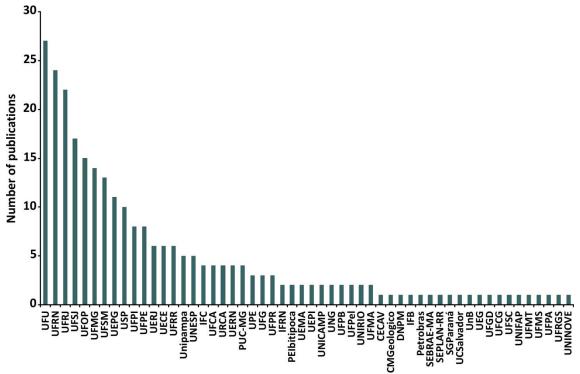


Figure 10: Distribution of geotourism articles in Brazil (2010-2019) concerning institutions, to which the authors are linked. **Source**: Elaborated by the authors (2022).

Figura 10: Distribuição de artigos de geoturismo no Brasil (2010-2019) referentes às instituições às quais os autores estão vinculados. **Fonte**: elaborado pelos autores (2022).

As noted, international institutions have been referenced 25 times by 22 authors, as in Brazilian institutions. That is because the same author has published more than once.

The institutions are divided as follows: 54 Brazilian institutions, 12 international institutions, and eight links that have not been identified (the eight authors that did not indicate the institution to which they are linked are in three of the articles). The total number of authors of the articles was 212, 182 from Brazilian institutions, eight from unidentified institutions, and 22 from foreign institutions.

To present the authors who have been working with the discussions on Geotourism in Brazil, we have selected ten authors who have most published from 2010-2019 (Table 4, Figure 11).

Table 4: Ranking of the ten authors in Brazil who have most published in geotourism (2010-2019). **Source**: Elaborated by the authors (2022).

 Tabela 4: Ranking dos dez autores no Brasil que mais publicaram em geoturismo (2010-2019).

Fonte: elaborado pelos autores (2022).

Rank	Author's name	Number of publications
1	Bento, Lilian Carla Moreira	10
2	Rodrigues, Silvio Carlos	8
3	Nascimento, Marcos Antonio Leite do	7
4	Castro, Paulo de Tarso Amorim	7
5	Guerra, Antônio José Teixeira	5
6	Moreira, Cardozo Jasmine	5
7	Ruchkys, Úrsula de Azevedo	5
8	Rocha, Leonardo Cristian	4
9	Figueiredo, Múcio do Amaral	4
10	Paula, Suzana Fernandes de	4

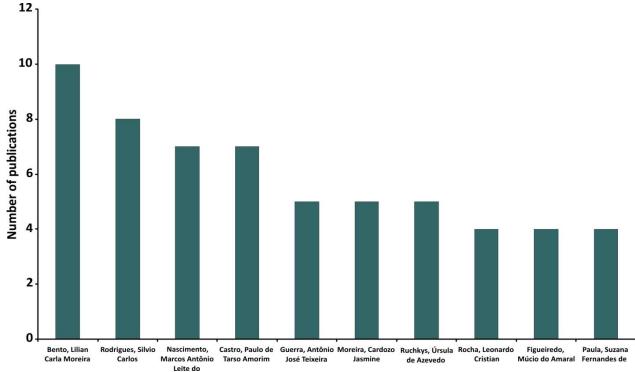


Figure 11: Graph of distribution of geotourism publications in Brazil concerning the authors with more published articles (2010-2019). **Source**: Elaborated by the authors (2022).

Figura 11: Gráfico de distribuição das publicações em geoturismo no Brasil em relação aos autores com mais artigos publicados (2010-2019). **Fonte**: elaborado pelos autores (2022).

Table 4 is presented in descending order, and when there is a tie in the number of publications, there follows the alphabetical order to arrange the data. To find out more about how the authors are working, in addition to the information previously presented, the following data will show the number of articles of which before-mentioned researchers were the main author (represented by the number in the table): (1) is the author of nine of the ten published articles; (2) he is the coauthor of all; (3) he is the co-author of all; (4) he is the author of three and the coauthor of four; (5) is the co-author of all; (6) is the author of two and the co-author of three; (7) is the author of three and the co-author of two; (8) is the co-author of all; (9) is the author of all; (10) is the co-author of all.

Final Considerations

Recent works have shown how geotourism is growing in the world. Ruban (2015), through a bibliometric work, analyzed the global distribution of academic research in geotourism. Firstly, the author used the number of experts who have published journal articles on geotourism between the years 2012 and 2014 and then the number of authors who have published articles in academic journals about geotourism in the same timespan by region of study.

As a result, he found that geotourism researchers are concentrated in Europe, divided into twenty-four countries. Furthermore, he identified there are many studies in Asia, although they are concentrated in East Asia and the Middle East, and that there are specialists in the three countries of North America and also in New Zealand. In South America, geotourism research is concentrated in Brazil. And, in general, geotourism specialists are rare in Africa. However, the study showed four countries with many communities of researchers on the subject that often include specialists from various institutions, namely: Italy, Brazil, China, and Poland. To conclude, Ruban (2015) identified that a considerable number of specialists are in the United States of America, Australia, the United Kingdom, Portugal, Spain, Iran, and Serbia.

Herrera-Franco *et al.* (2020), when recently studying the trends of geotourism, also with a bibliometric analysis, used the Scopus database. The objective of the work was to investigate scientific information related to geotourism for the evaluation of the structure, concept, and trends of geotourism following the related publications.

This study has provided a solid methodological contribution in the geotourism field. It has presented a bibliometric analysis that permits evaluating the scientific production, besides its appearance in three bibliometric mapping techniques: keywords co-occurrence analysis, analysis of author's co-quotes, and analysis of co-authorship, which facilitates the knowledge of its structure and the development of the field of study.

In general, Herrera-Franco *et al.* (2020) disclose that geotourism has grown worldwide, which can be analyzed for its production and citations throughout the years. In addition, they showed that geotourism has always been associated with the conservation of natural resources, with emphasis on the geological ones, promoting areas containing geosites and geoheritage, in addition to geoparks, all driven by geotourism.

Another contemporary study, written by Duarte et al. (2020), has provided a systematic review of the literature on geotourism and still has holistically approached

the relationship with territorial development. For this purpose, they covered the period between the years 2007 and 2018, using the Scopus database. In this work, current and future trends in this field of knowledge were identified through bibliometric analysis by describing how this research field is organized. It concerned publications, authors, and sources, identifying co-authorship references, and discussing challenges presented by the literature studied in the field of study of the relationship between geotourism and development.

The VOSviewer software was used to achieve the results, building and displaying the bibliometric maps, besides identifying clusters and their referral network. Innumerable results can be obtained in this type of work and methodology. Among them, a significant increase in publications and citations on the topic was identified from 2007 to 2018, confirming the rise in interest in geotourism, as well as the verification of the ten most-cited authors on the subject, being Dowling (2011), with the work Geotourism's Global Growth, the most one cited with 131 citations. Other responses to the research are that the authors Thomas Hose and David Newsome were the most productive and that Brazil was the most studied country in this theme, with seventeen published works.

In a recent work published by Conti et al. (2021), it appears that geotourism is highlighted in national publications about scientific tourism. The authors relate the various national productions to a specific category called Geotourism / Geopark. Although they also have made a new category called Nature Tourism, they have chosen to analyze geotourism in a particular category as the articles found present peculiarities.

According to Conti *et al.* (2021), in Brazil, the national production on Scientific Tourism has approached geotourism from different perspectives. However, countless times associated with the theme of "geoparks", as these are a stage for the practice of geotourism itself. Finally, the authors show the close relationship between geotourism and scientific tourism, presented as interrelated activities, and conclude by saying that these lines of studies can help in different ways in the recovery, preservation, dissemination, and sustainable use of tourist attractions.

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