

# SYSTEMATIC LITERATURE REVIEW IN TEN YEARS OF ACADEMIC PRODUCTION IN TOURISM, GIS, PHOTOGRAPHY AND DESTINATIONS

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## Abstract

The present work aimed to produce a systematic review of the literature on the topics of GIS, Photography, Destinations and Tourism, using literature systematization techniques and bibliometrics. For the analysis, a 10-year scope was used, on the tags: Tourism, Destinations, Photography and GIS, specifically in the period from 2013 to 2023. The analysis was based on the number of articles, citations, relevance and authors. To assist in displaying these results, the software used was VOSviewer and Connected Papers. This topic is essential for tourism, as it is inserted daily in people's daily lives, and thus, it is proven through data and graphs that there are still few publications on the topic. According to what was analyzed, it was possible to observe the lack of works pertinent to the subject and the need for more publications by tourism professionals on the subject researched. The results also showed that bibliometric studies are inexhaustible sources of research, as they easily report branches, the combined use of search software can be allies for tourism research, providing a broader view of which subjects require further study.

## Keywords

Tourism, Geographic information systems, Destinations, Photography, Bibliometrics

## 1. Introduction

Much has been discussed recently about systematic literature review and its applications for tourism research. “Literature Review, or IR, is nothing more than the gathering, the joining of ideas from different authors on a given topic, achieved through readings and research carried out by the researcher” (Brizola & Fantin, 2016, p. 27). Thus, systematic review is important to optimize time and to know shortcuts that can help in the selection of relevant information for the study project. This work also made it possible to reflect on the importance of carrying out studies to survey scientific productions as they help the researcher to see what productions were carried out by the scientific community and what were the paths and biases approached in recent years, allowing the researcher the possibility of producing something unprecedented.

In this sense, destinations are linked to the concept of tourism itself, as highlighted by the authors (Binfaré, et al, 2016; OMT, 2001), and which includes any activity carried out by an individual during their travels and stays in different destinations in their region. usual environment, for a period longer than one day and less than one year, for various reasons.

These tourist destinations are essential for tourists to come and visit a certain region, and in this way the activity becomes a way to spread culture, show natural beauty and boost the country's economy.

Regarding images, photographs are part of this destination, as they encourage the idea of wanting to travel and play an important role in society, helping to document and illustrate human life. Alves, Costa and Perinotto (2017) also highlight that the images posted function as promotion for these tourist destinations and at the same time create a kind of tangibleization of the destination.

In addition to showing and anticipating tourist scenes and experiences, photography, according to authors Alves, Costa and Perinotto (2017), becomes an excellent instrument for tourists to visualize what awaits them at their attraction, even if sometimes the destination is not consistent with photography, in reality part of this imagination is determined by whoever will contemplate the landscape, therefore photography can gather and combine expectations in people's imagination, to the point of guiding them in their choice processes through the eyes of each visitor.

Photography for tourism is essential, as it has the power to transform a moment into an unforgettable memory.

Tourism, seen as an increasingly dynamic activity, seeks means of innovation and differentiation for the market. A widespread and accepted form by the population were activities linked to the *Global Positioning System* (GPS), which is one of the forms of geoprocessing most used by the lay public today (Minasi & Tricárico, 2021).

Walkowski (2014), highlights that the *Global Positioning System* (GPS) is a tool widespread in several areas and its use will depend on the need and depth of the object to be studied, as well as the technology used in the equipment (influencing accuracy).

The application of these Geoprocessing, Geographic Information Systems and Global Positioning System techniques, according to the authors Carmo *et al.* (2021), enables several branches of study, including demand, seasonality and monitoring studies, as a support tool in the development of tourist itineraries, among others. For tourism, geoprocessing becomes an important ally due to the savings in time and savings in project implementation, malleability of use, and simple and clear applications for use in research.

From the above, we can understand the importance of *tags* for tourism and the lack of connection between social media, the image and the destination. The term “tags (tags), can be defined as keywords, categories or metadata, and can be classified as any word that defines a relationship between the online resource and a concept in the user's mind” (Segundo & Silvana, 2011, p. 05). For this research, the *tags* will be adopted: Tourism, Destinations, Photography and GIS.

It is clear that most tourists use social media as inspiration to decide where to visit. An example is the use of Instagram and TripAdvisor, both of which have information and characteristics capable of attracting and locating.

Of course, the relevance of this work is understood as a way of highlighting the lack of academic work with this approach and the possibility of bringing a considerable volume of information to the scope of the study of tourism.

It is observed that a large part of the works that address the topic of GIS are primarily in the area of geography; those that address photography are focused on demand studies and; those that address destinations are focused on images and case studies.

The academic work that came closest to the theme was “The Instagramer and Imaginary Technologies in Tourism: Assessment of the Tourist x City Relationship, Aracaju-SE ” by the authors Carmo *et al.* (2021), in which destiny was mentioned. The Instagramer , focused on exposing this technological phenomenon through the use of photographs for the location, addresses what GIS is and how it can be an important ally, but the theme of the work itself was a demand analysis.

The objective of this research is to produce a systematic review of the literature on the topic of GIS, Photography, Destinations and Tourism, using literature systematization techniques and bibliometrics. Qualitative bibliographical research and bibliometric research were carried out on the project theme. The work is divided into three theoretical topics and analysis of results.

## 2. Theoretical Review

GIS, or integrated management system, are programs used to create, edit, manipulate, visualize and store data. These result from the combination of three different types of technologies such as Sensing, GPS and Geoprocessing.

This software provides fast, accurate and useful information, ensuring faster and more effective digestion. Its objective is to ensure that this information can assist in decision-making in different sectors. Through it we can see patterns, relationships and situations when monitoring the intelligent decision-making that the application makes, this platform

can be used to introduce techniques emerging in regional urban planning, such as its application in public transport (Silva, et al, 2004).

The structuring of the data enables a strategic vision of the productive sector associated with tourism. More than simply processing data and generating control, it will support decision-making, aiming to provide tourism managers with strategic information that will streamline the tourist offer and define the policies to be adopted (Walkowski , 2020).

Currently, widely used in app cars and merchandise tracking, the use of these technological tracking methods ended up migrating to other sectors, such as delivery applications, as a route memorizer and for feedback in projects, and real-time evaluation and location.

Continuing this line of reasoning, the integrated management system is part of our daily lives in a way that we are not aware of, and this silent insertion also occurs in so-called “tourist destinations”. For Bustamante, Guzmán and Vila (2006), the tourist destination is the place where travelers go and experience the tourist experience. Now, bringing a little more complexity, the authors Flores and Mendes (2014), state that tourist destinations are nothing more than a space capable of hosting visitors, where it is possible to meet the visitor's needs, being a nucleus, city, region in other words, any geographic space in which tourist activity is evident.

The management of a tourist destination is the set of efforts aimed at managing the elements that compose it, in order to enable the development of the location, namely: application of financial and technological resources, dissemination, planning and developing products, getting to know the community resident, satisfaction surveys, economic profitability, the competitive capacity of the destination and monitor the performance of established projects and their operation (Mira, *et al* , 2017).

In tourist destinations, the image becomes one of the fundamental points and establishes a relationship with photography and tourism. It is understood that the Destination becomes responsible for promoting the tourist image, taking into account the physical, social characteristics and hospitality, as well as the services and equipment offered to tourists, driven by promotional actions. Historical, political, economic and social aspects are also considered when building an image (Nakatani, Gomes & Nunes, 2017).

As the pandemic progressed, some changes were introduced to tourist activities, making them notice the importance of materializing a digital presence, making the activity increasingly dynamic.

In this context, social networks present a low-cost tourism promotion tool with positive results for tourism companies, although this is a risky investment, as just as it provides transparency and positive results, it can also bring negative results such as negative promotion through reviews. This, according to authors Paula and Faria (2021), would be the materialization of digital presence, its insertion into society as something common.

Social media brings facilitated and interpersonal communication quickly and dynamically. Purchases that required calls or the presence of the individual will become obsolete in a few years, due to the ease that social media offers, as is the case with product

personalization through Big Data, where consumers are constantly bombarded by advertisements for things that may interest you, according to your data history (Alves, Costa & Perinotto, 2017).

Images begin to be constructed through photographs and textual comments posted on social networks, within platforms, and this information contributes to the construction of the local imaginary, causing the individual who wishes to travel to create new visual impressions about the space. Thus, we can highlight that photographs reflect a tourist's way of seeing the city (Paula & Faria, 2021). Therefore, we can agree with the authors Silva and Perinotto (2015), that images, although divergent from tourist promotion, still convey significant value to the consumer, be it an imaginary or photographic image.

With the help of cell phones, information about tourist sites is increasingly complete, with the number of visitors, comments and photos being available. All this data makes it possible to geolocate the destination, like what happens on Google Maps (Snaveley, Seitz & Szeliski, 2008).

Geolocated photographs provide a useful source for public and private planning and management, aiming to provide better tourist services, comparing the traditional count of specific points through Big Data. Furthermore, it is possible to check which locations are being saturated, establish controls and work to improve the marketing of destinations, always looking for innovations and means of intervention, both for benefits and for disaster prevention (Palomares, Gutiérrez & Mínguez, 2015).

Therefore, the geovisualization of tourist photography traces the main attractions and routes visited, allowing the intensity of tourist flow to be analyzed and related to the local infrastructure of the analyzed destinations. The use of these places is almost predominantly by visitors and geolocation can be used to end the segregation of residents in tourist locations, as discussed by the authors Melgaço, 2010; Abreu e Costa, 2017.

Based on this discussion, the adaptation of geoprocessing technologies applied to the use of tools for contemporary tourism can assist in various ways the research and execution of new applications for tourist destinations, through images and photographs.

### 3. Methodology

Remembering that the objective of this research is to produce a systematic review of the literature on the topic of GIS, Photography, Destinations and Tourism, using literature systematization techniques and bibliometrics.

To this end, the work consisted of analyzing the profile and growth pattern of the production of articles selected through the key words "images and photos, photography and tourism, destinations, GIS and tourism" searched in Portuguese and English, these being the languages considered for the selection of articles. In this work, the scientific database was used, chosen for its relevance and pertinence to the area of Tourism: Scopus. This was selected due to its vast amount of work related to topics in relation to the Web of Science platform.

As stated by authors Oliveira and Gracio (2011), Scopus is a multidisciplinary database, launched by publisher Elsevier in 2004. It selects high-quality journals through the selection of the Independent Content Selection and Guidance Board (CSAB). It is a consolidated platform, with coverage since 1960 and reliable due to its transparent selection criteria for content, on it all titles must meet some minimum criteria in order to be considered for review, secondly all eligible titles are reviewed by (CSAB) according to the combination of quantitative and qualitative selection criteria grouped into categories (Scopus, 2004).

For the analysis, works from the last 10 years were used, from 2013 to 2023, for searches with the keywords: “tourism and photography”, “tourism and GIS”, “tourism and destinations”.

The works selected were articles. From the total collected, all results were defined in each search, Following Melo Ribeiro (2017), who used an analysis approach through information classification tables and intuitive graphics. The analysis was based on the number of articles, citations, relevance, and authors. To help display these results, the software used was VOSviewer and *Connected Papers*.

The research began by defining the necessary *tags* and searching on the Scopus platform, as follows: tourism, destinations, photography and GIS; *tourism, destinations, photography and gis*; *tourism and destinations*, tourism and destinations, *tourism and photography*, tourism and photography, *tourism and gis*, tourism and GIS. In each of them, a certain amount of information was obtained, which was later shown in the results tab of this work. This same data was used for computing in VosViewer, and maps were created based on bibliographic data, especially on co-citation, citation and co-occurrence.

*Connected Papers is a free tool that shows a network of bibliographic connections, which have similarities. This software is widely used for bibliometric review based on citation analysis research and co-citation for similar articles. The platform uses a database of 50,000 articles to perform the analysis through similarity graphs (Connectedpapers, [sd]).*

VOSviewer was created to visualize and explore bibliometric maps. The program is freely available and can be used to analyze all types of bibliometric network data, such as citation relationships between publications or journals, collaboration relationships between researchers, and co-occurrence of scientific terms, in addition to most cited and publication number per author relevance (VOSviewer, 2023).

The continuous growth of works using the VOSviewer software is very relevant for research, according to author Kirby (2023). Since the publication's introduction in 2010, its growth has been literally exponential. Of the 2,045 articles published to date and documented in Scopus that referenced VOSviewer, 53% were published in 2021, indicating the growth in the search for using the tool. To assist in data visualization, Excel and Word were also used.

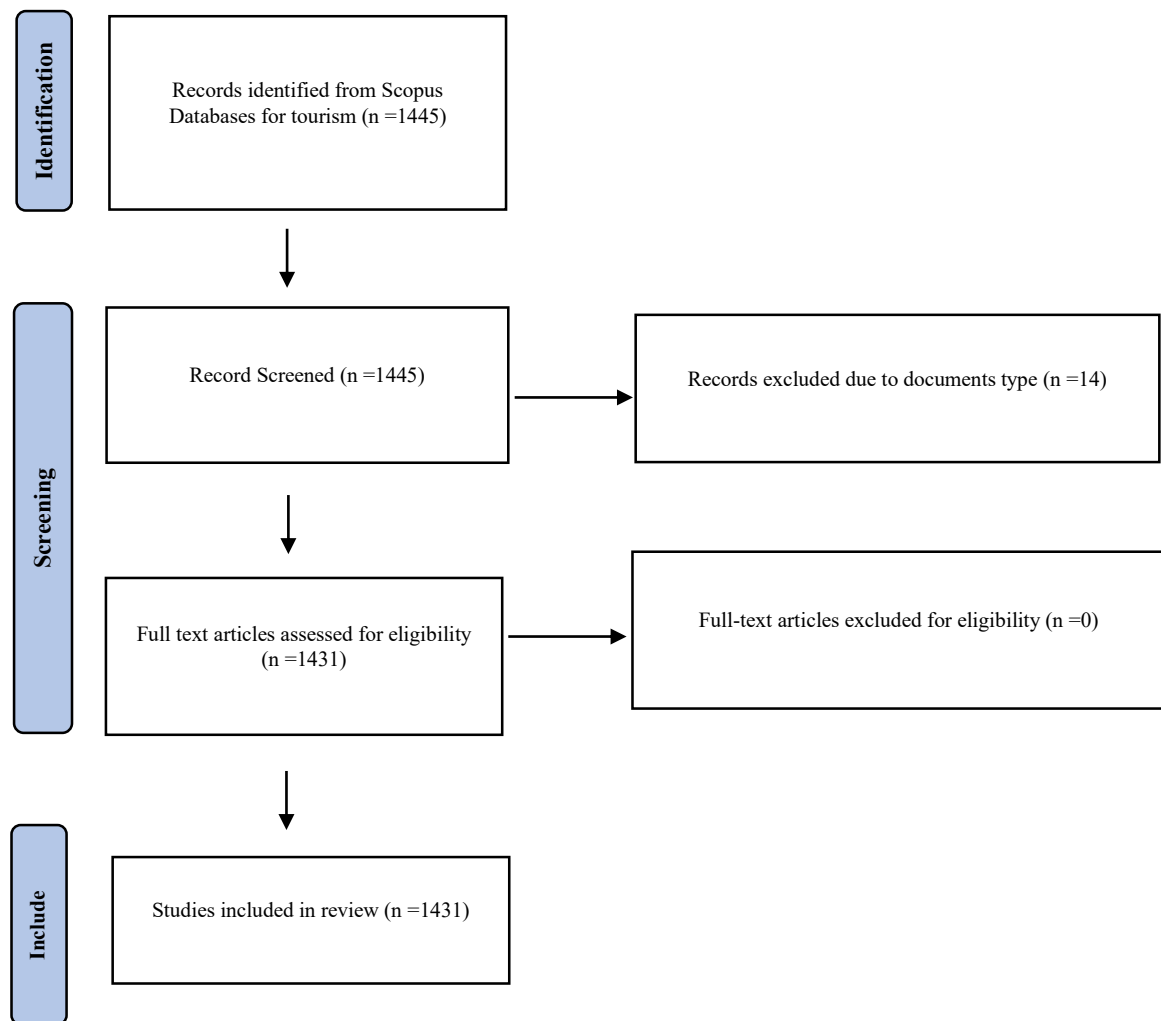


Figure 1. PRISMA process of extracting documents

Source: the authors

#### 4. Results and Discussions

A pre-evaluation of the group of works found was carried out based on the inclusion and exclusion criteria listed below, in order to define the collection that would be re-read and analyzed in depth in the next stage.

Subsequently, the criteria used to search and select relevant articles in the journals, included in the Scopus database (2004), involved the following keywords: “tourism and photography / tourism and photography”, “tourism and gis / tourism and GIS”, “tourism and destinations / tourism and destinations”.

The tags (tourism, destinations, photography and GIS) were located not simultaneously, so that all manuscripts that had at least one of the keywords previously highlighted: in the title, abstract and search keywords were selected.



## 4.1 Tourism and Photography

When using the filter described in Portuguese, 2 results were found: 1 in English and the second in Spanish/English. This data is presented in tables one and two with the following information: title, author, source, year and number of citations.

Table 1. Relevant works on Tourism and Photography in PT-BR/1

|                     |  |
|---------------------|--|
| Title               | Indigenous America and inter-American visual indigenism, 1941–1951 |
| Author              | Dorotinsky , D.  |
| Source              | Latin American and Caribbean Ethnic Studies, 17(4), pp. 445–472    |
| Year                | 2020   |
| Number of Citations | 0  |

Source: Research Data, 2023.

To obtain greater visualization, *Connected Papers* was used to create a more intuitive graphic about the article. The same, it deals with how the published images operate in the formation of a visual culture and how the images published by the magazine Instituto Indigenista Interamericano (IAII) contributed to the consolidation of an indigenist discourse, therefore it has no relation to the research itself, since It has no relation to tourism.

Each node in the following figure represents an academic work related to the source article, the closer it is, the more similar it is. The size of each point is defined by the number of citations in each work, the darker, the more recent and, finally, the more similarity, the more connecting lines.

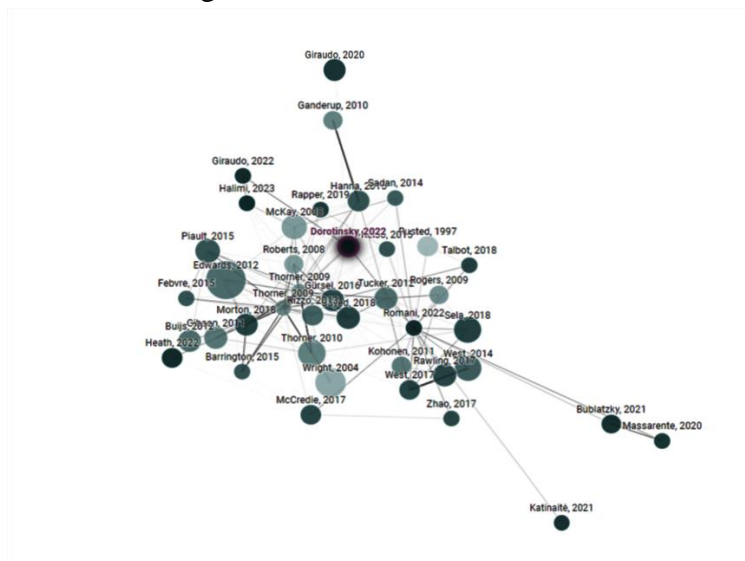


Figure 2. Similarity of works according to the article cited “Indigenous America and inter-American visual indigenism”  
Source: the authors

When observing the figure, it can be seen that the works that focus on this theme are very current, highlighting works mainly from 2021 and 2022. The author who had the most similarity was L. Giraud, Emilio J. Gallardo- Saborido , having 5.6 points of bibliographic similarity, through the article “Staging of Indianization/staging of indigenism: artistic expression”.

Each circle in the figure represents an academic article related to the work found during the search, and circles that are further away represent non-similarity to the work. It can be seen that most of them are related in some way, observing the lines of connection between them, therefore, it can be said that although it is a recent article, it is well-regarded, however, it does not meet our search criteria.

The second result shown has a problem, as it is specifically categorized in the class of articles in Portuguese and, however, is written in Spanish/English. This demonstrates that the research, although relevant to current times, few works in Portuguese deal with the topic, and in this specific case, it is also not within the standards necessary for research.

Table 2. Relevant works on Tourism and Photography in PT-BR/2

|                     |   |
|---------------------|---|
| Title               | The taste for others: tourism, photography and cultural heritage in the andean context   I like them others : tourism, photography and cultural heritage in the Andean context. |
| Author              | Silva-Escobar, J.P.   |
| Source              | Photographic Discourses, 16(28), pp. 172–202  |
| Year                | 2022  |
| Number of Citations | 0   |

Source: Research Data, 2023.

Almost in disagreement with the results obtained in the tables above, the search in English obtained more satisfactory results, where 332 results on the topic were found.

The co-occurrence figure below was obtained by inserting results from the Scopus platform or “Papers ” into VosViewer , bringing the codes documented by Scopus in a more streamlined way, through lines, icons and varied colors, using the *Network Visialization graph* .

The large circles represent the greatest concentration of researched topics and are related to others through lines to represent their correlation. Highlighted are the most researched topics: photography, tourism, social media and tourist destinations.

Table 3 provides an overview of the analysed document. The R Studio software was used to create the table. The research analyses the articles from 2013 to 2023, including a substantial number of 642 sources. Of the total of 1445 documents, 1431 published articles are taken into consideration. With a profound average citation of 11.91 per document, the documents draw a rich tapestry of 64603 references. On average, the document we analyzed exhibits the age of 5.35. The documents contents include keyword



The line graph below was created directly on the Scopus platform, demonstrating that the growth of research on the topic in English was between the years 2014 and 2021. According to what is depicted, the *boom* in articles published on the subject occurred in 2021, with a decline since then. However, it is still not possible to have a clear conclusion about the lack of interest in the topic, since in 2023, there is still a possibility that the *tag* will return to the spotlight, considering that there are already 15 works published on the topic.

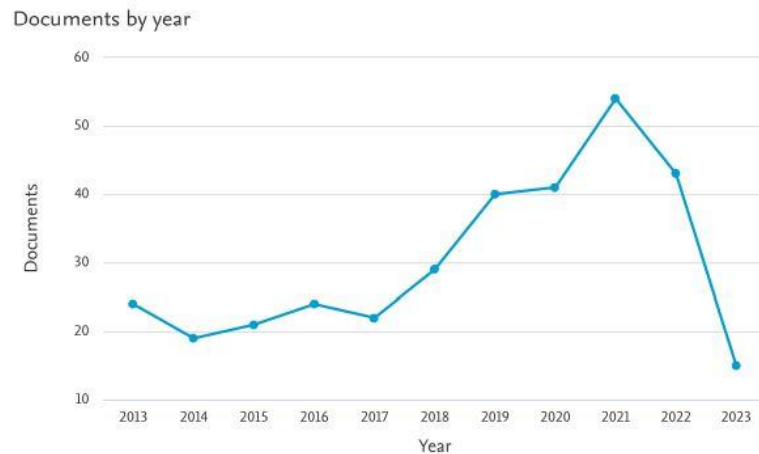


Figure 4. Growth of research on the theme of Tourism and Photography  
Source: the authors

As previously discussed in this work, this research niche is important because it highlights the way visitors behave in a given region. Authors such as Alves, Costa and Perinotto (2017); Silva and Perinotto (2015) comment on the use of photographs in tourist destinations, where they cause a certain standardization of behavior in the visitor, such as taking a photo in the place where a digital influencer took it.

Below, the bar figure shows the authors who wrote on the topic between the years 2013-2023, with the greatest recognition being the author Marten De Brauwier, on themes of marine biology, ecology and environmental DNA, which highlights the relationship between tourism, image and environment.

What is interesting to show with this result is that the author who has produced the most on the topic is not a tourismologist in question, but an environmentalist. However, it should be noted that tourism also involves the environmental area, however, this does not take away the need for researchers in the field of tourism for academic research on this subject.



Figure 5. Authors who publish the most - Documents by author  
Source: the authors

Continuing the funneling, the pie chart shows the most published area of research in relation to *tags*, belonging to the area of social sciences.

Tourism, as an object of study by social sciences, has been related since the 1920s, as can be seen in the book *The Sociology of Tourism. European Origins and Developments* by Dann and Parrinello (2009). However, when analyzing the results, we found that there are no new facts that could be of interest for research.

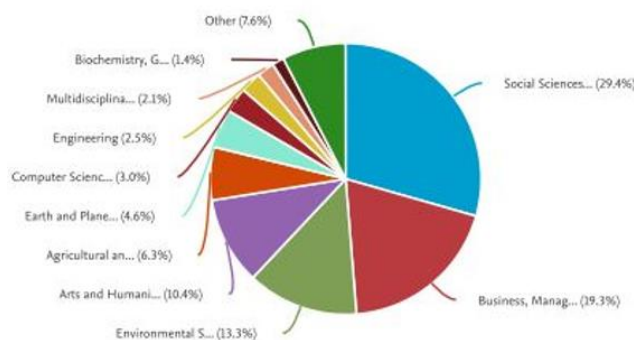


Figure 6. Most published research area with the theme Tourism and Photography - Documents by field of study  
Source: the authors, 2023.

## 4.2 Tourism and GIS

When using the filter in Portuguese, no results were obtained for the search. Using the *tag* in English, 1,111 results were found. From these results, a citation graph was created using *Network visualization* and no satisfactory results were obtained.

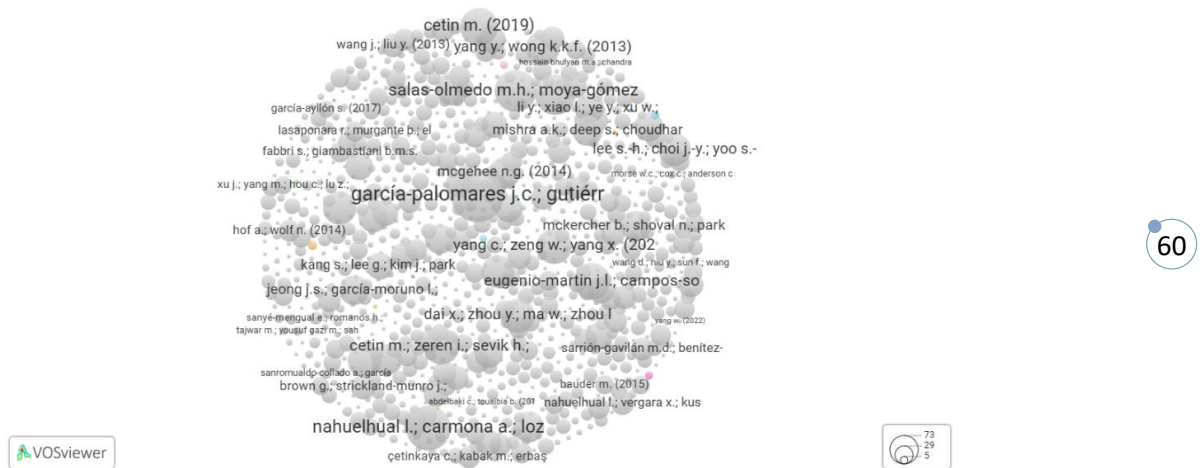


Figure 7. Chart of quotes related to the theme Tourism and Gis

Source: the authors

The authors obtained in the research are not cited among themselves, that is, they are not academically related. The color of the graph shows that most of the results are out of date, that is, they are too old to be relevant, except for some small colored dots on the graph.

Although the *tag* is acceptable in terms of the number of results, it is not significant due to the lack of current work on the umlaut, and with a simple search on Google Scholar, one can see this fact, where the majority of results are from more than fifteen years ago, when the theme was still emerging.

This is a very diverse area; it can be seen in the figure below those social sciences still remains in first place with 23.5%; followed by environmental science with 21.9%. Surprisingly, management and business account for only 7.4%, even though it is an area well situated in tourism, and the business generated by tourist activity directly and indirectly involves other sectors with repercussions on the composition of the country's economy itself (Donaire, Silva & Gaspar, 2009).

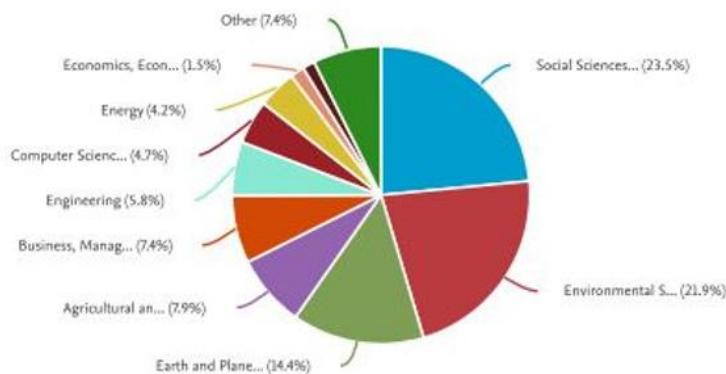


Figure 8. Chart of quotes related to the theme Tourism and Gis Expressive work areas

Source: the authors

Bringing a little more reflection on the number of articles related to the topic, it can be seen from figure 8 that the territory that produces the most on the subject of tourism and GIS is China, publishing 245 of the 1,111 articles.

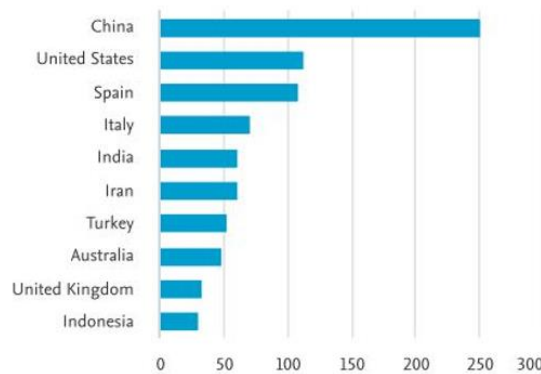


Figure 9. Territories with the largest publications  
Source: the authors

Geographic Information Systems (GIS) are increasingly necessary for industries and operations in business, healthcare, security, government, commerce, media, transportation and tourism in China. It is playing very important roles in the area of commercial operations and also in studies of population and geographic density (Ge & Feng, 2010; Liu, et al, 2020).

### 4.3 Tourism and Destinations

When using the filter in Portuguese, 26 results were obtained for the search. Using the same tag in English, a surprising 16,522 results were found. To better observe the data, we used the graphs below to better visualize the results in English.

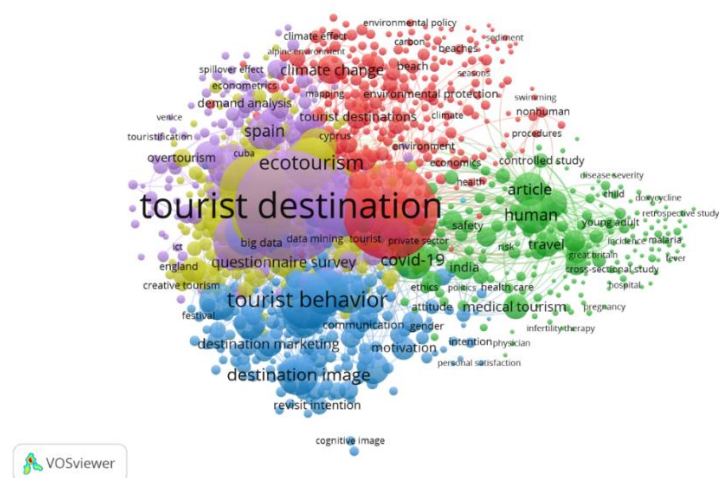


Figure 10. Volume of published themes  
Source: the authors

Co-occurrence figure, the large circles represent the highest concentration of themes researched and are related to other themes through lines to represent their correlation. The most researched topics are highlighted: tourist destinations, tourist behavior, destination image and ecotourism.

For research, all this data is consistent with the searched *tag*, as it relates to the topic. Tourist destinations are able to manage their processes and their territory in an innovative way, positively impacting the quality of life of residents and the experience of tourists, therefore, it is an ever-emerging topic for tourism.

Below, there is a graph made directly by the Scopus platform, which shows that until 2022, the topic has only grown, especially in China, where 2,030 related articles have been published in the last 10 years.

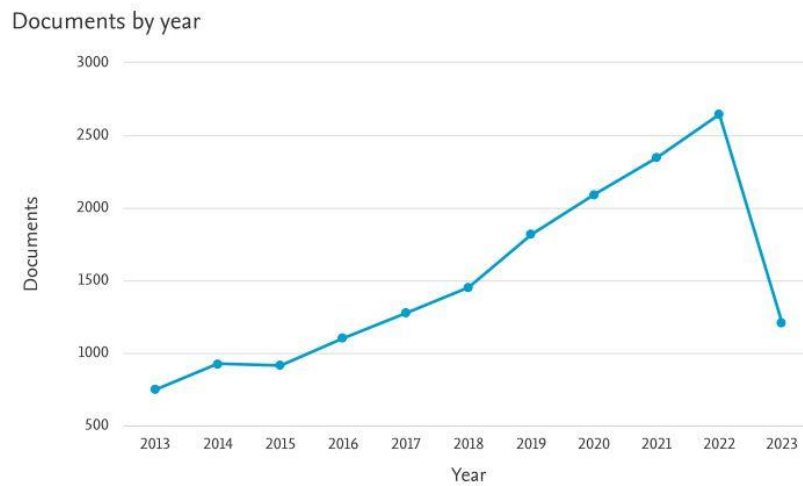


Figure 11. Rise of works on tourism and destinations  
Source: the authors

As for the authors who publish on the topic, we received pleasant responses. To help, we once again used the VosViewer platform to create a more intuitive design about the authors.

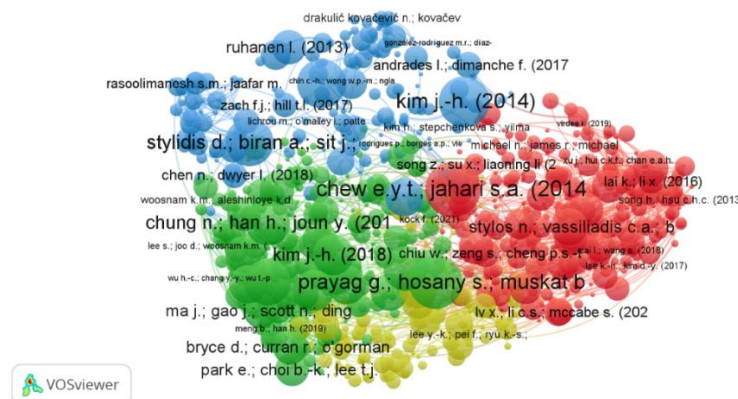


Figure 12. Academic relationship between authors  
Source: the authors



Table 4. Top 10 most frequently used keywords

| Terms                          | Frequency |
|--------------------------------|-----------|
| gis                            | 505       |
| tourism                        | 251       |
| tourism development            | 173       |
| china                          | 168       |
| geographic information systems | 139       |
| tourist destination            | 125       |
| photography                    | 123       |
| remote sensing                 | 121       |
| ecotourism                     | 117       |
| spatial analysis               | 113       |

Source: the authors

Table 4 represents the top 10 most frequently used keywords in the dataset. Notably, the term “GIS” exhibits the highest frequency of 505. Following closely are the terms “tourism”, and “tourism development” with respective frequencies of 251 and 173 occurrences. Subsequently, the keywords “China” occurred 168 times, “geographic information systems” occurred 139 times, and “tourist destination” occurred 125 times. Finally, the keywords “photography”, “remote sensing”, “ecotourism” and “spatial analysis” exhibits frequencies of 123, 121, 117 and 113 occurrences, sequentially.

The tree map below gives the visual representation of keywords that allow researchers to quickly identify the most frequently used keywords. Notably the largest rectangles representing “GIS” encompasses approx. 13% of the total used keywords, indicates its essential prevalence within the dataset. The study highlights the thematic landscape of our bibliometric study, which makes it easy for us to identify trends and areas for exploration.



Figure 13. Tree map of keywords

Source: the authors

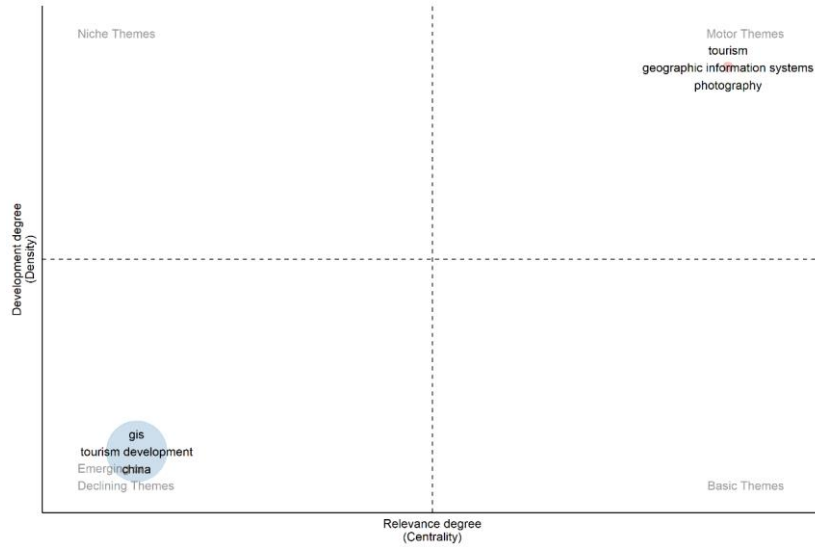


Figure 14. Thematic map of evolution  
Source: the authors

The thematic map provides a visual representation of dynamic shift and evolution. The figure reveals the distribution of keywords across different thematic clusters. The occurrence of keywords explains the trends, leading themes, and study pattern. The thematic map is divided into four sections: “basic theme” which exhibits the central idea or the foundation of the study; “motor theme” which present the core interest of the researcher; “niche Theme” which displays the specialized area of focus, and “emerging or declining theme” which displays the new ideas that’s just beginning to take off or the topic that fades away as the new ideas emerge. Looking at the figure, the keywords “tourism”, “geographic information system”, and “photography” occurred in motor theme suggesting that these are the leading themes in tourism. The emerging and declining theme consists of “gis” with the frequency of 501, “tourism development”, and “China” indicating the need of scholarly attention and development in these areas. The motor theme consists of “tourism”, “geographical information system” and “photography” suggesting that these are the primary interests of researchers.

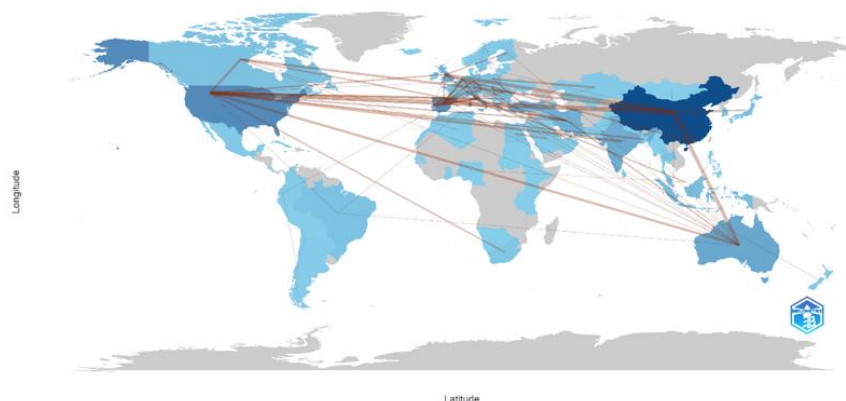


Figure 15. Analysis of world collaboration map  
Source: the authors

The figure outlines the collaborative relationships between authors originating from different countries. The intensity of the colors depicts the collaborative relationship between the countries. According to the figure, we observe a collaborative relationship between China and the USA with 17 articles, indicating a robust scholarly partnership between these two nations. Following closely are the collaborative relationships between China and Australia, which results in 11 papers, and between China and the United Kingdom which result in 10 papers.

Furthermore, the data reflects a collaborative relationship between Spain and Portugal with 8 papers. The collaborative relation between the USA and India, USA and Australia, and Spain and Italy are also noteworthy, further enriching the global panorama of scholarly collaboration.

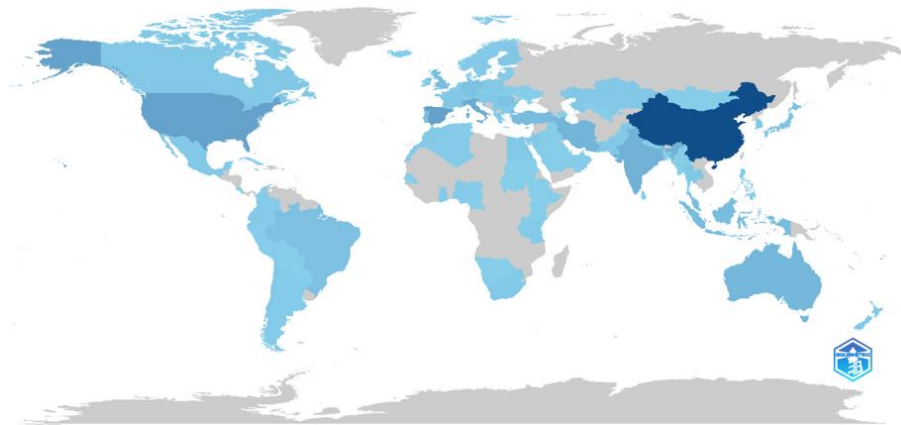


Figure 16. Analysis of country wise produced documents  
Source: the authors

Figure displays the countries which produced the most significant number scientific papers. The intensity of colors represents the amount of production of each country. The number of productions can be easily visualized by the intensity of color. The darker the shade the greater number of papers is produced. According to the figure, China tops the list of most productive country with the total number of 1023 papers. It is followed by Spain (with 207 Publications), USA (with 338 Publications), Italy (with 262 Publications), and India (with 207 Publications). The figure also illustrates a noteworthy development in the topic across different countries (Iran, Australia, Turkey, UK, Indonesia). The production of these scholarly papers also serves as inductive evidence of growing trends in different countries.

Table 5. Top 10 countries with most published articles

| Country   | No. of published articles |
|-----------|---------------------------|
| CHINA     | 1023                      |
| SPAIN     | 338                       |
| USA       | 322                       |
| ITALY     | 262                       |
| INDIA     | 207                       |
| IRAN      | 184                       |
| AUSTRALIA | 166                       |
| TURKEY    | 136                       |
| UK        | 129                       |

Source: the authors

Contrary to what was obtained in the results of the GIS research, the authors obtained at this stage have works among themselves, that is, they are academically related, through co-authorship, as represented in the figure above.

Continuing with the search on the Scopus platform, applying all the filters described: “tourism and photography, tourism and GIS, tourism and destinations”, resulted in only 2 articles in English, for Portuguese, no results were found.

Table 6. Jobs related to all filters 1

|                     |  |
|---------------------|--|
| Title               | A New Approach for Tourists' Visual Behavior Patterns and Perception Evaluation based on Multi-source Data |
| Author              | Li, Y. , Guo, J. , Chen, Y.  |
| Source              | Journal of Geo-Information Science , 24(10), pp. 2004–2020   |
| Year                | 2022   |
| Number of Citations | two  |

Source: Research Data, 2023

Table 7. Jobs related to all filters 2

|                  |   |
|------------------|---|
| Title            | Detecting tourism destinations using scalable geospatial analysis based on cloud computing platform |
| Author           | Zhou, X., Xu, C., Kimmons, B.   |
| Source           | Computers, Environment and Urban Systems , 54, pp. 144–153  |
| Year             | 2015  |
| No. of Citations | 85  |

Source: Research Data, 2023.

It is important to highlight that both works are not published in tourism magazines, but in another area. In this sense, it is clear that the authors who publish on the topic may or may not be from the area, or in fact, the tourism area does not yet understand the complexity of the subject, as these three *tourism themes and photography*, *tourism and GIS*, *tourism and destinations*, are increasingly being used and gaining notoriety.

Authors such as Lopes, Remoaldo and Ribeiro (2018) worked on the themes together, deepening the study of image, destination, GIS and tourism, using georeferenced photos as a basis, posted by the tourists themselves, through analysis of geographic information and techniques of spatial and statistical analysis for the promotion of the tourist destination.

With the mediatized behavior we currently have, it is interesting to problematize that, although photography is so widespread in everyday life and social media is used every day, it is intriguing that *Tourism and Photography*, obtained only 332 results while *Tourism and Destinations* got 16,522 results. Several authors associate the fact that the image can be the villain of tourism and according to Sontag (2016), it is capable of distorting elements, as it is open to various interpretations such as the use of misleading advertising, for example. However, one is aware that the photo can distort, but there is always the assumption that something in it exists, or existed, and was similar to what is in the image. This can be deduced by changes in weather, seasonality and angle.

As for the GIS tag, something similar happens, the publishing potential is huge considering all the apparatus that technology provides us, this alliance of SIG, photography and destinations. Lopes, Remoaldo and Ribeiro (2018), used in their work a beautiful representation of the use of tags together, bringing an analysis between photography, tourism, destination and GIS.

With the constant use of geolocation carried out by smartphones and the use of these technologies through social media, the following question is reiterated, why is the topic not more researched?

An important issue raised is the disconnect between tourism and areas such as geoinformatics and photography combined. Thus, we point out that authors from other areas, such as geography or technology, are more involved in the use of GIS and photography in the tourism context than tourism experts themselves. This suggests that the tourism field does not yet fully recognize the complexity and potential of these technologies in the promotion and understanding of tourist destinations. The lack of an interdisciplinary approach may be an important limitation that prevents a deeper exploration of these topics. Another important point is the interrelationship between the three key elements of the study: tourism, GIS and photography. Although we have identified these areas as increasingly relevant, we point out that there is still no complete understanding of how these technologies interact and complement each other in the tourism context.

## 5. Final Considerations

The objective of the work was to produce a systematic review of the literature on the topic of GIS, Photography, Destinations and Tourism, using literature systematization techniques and bibliometrics. For this, bibliometric analysis and data collection techniques were used, using VosViewer and *Connected Papers as tools*.

It was observed during the results that *Tourism and Destinations* had 16,522 results; for GIS, 1,111 results were found; while *Tourism and Photography* only got 332 results. Note the lack of publications on the topic itself, as shown previously, the lack of publications by tourismologists in the area becomes visible when observing the lack of relationship to the three topics mentioned above.

The *tags* used (Tourism, Destinations, Photography and GIS) were chosen due to their great relevance to the current tourism model and its broad insertion movement in the market. It can be seen at this point that, although the themes are relevant, publication together is still scarce and it is clear that most of the works that talked about the topic are already obsolete and research combining the three themes in a single publication becomes almost non-existent.

Therefore, although publications by authors from other areas who have addressed the topic are somewhat convenient, research into emerging themes in tourism must also continue through these tourism specialists.

This research sought to highlight the lack of publications related to the themes of Tourism, Destinations, GIS and Photographs jointly, taking as a reference the current moment, where the topics are linked in tourist activity in an almost imperceptible way. The same also contributed to confirming that bibliometric studies are inexhaustible sources of research, as they relate branches easily, the combined use of search software can be allies for research in tourism, providing a broader view of which subjects require more study.

It is worth highlighting, however, that this work does not exhaust the discussions about the challenges of systematic literature review on this topic, considering that the aim is to elucidate the main results identified in the literature, but there are specific contexts, taking into account the role of each node that makes up the network, the processes that connect them and the context in which they were created.

Furthermore, new reflections and questions may arise from the considerations presented here, with the intention, for example, of elucidating the dimensions of tourism research, aiming to discuss beyond the weaknesses in the process of reviewing the literature on destinations, GIS and photography, but mainly the relationship between them. The limitation of the number of articles available in the Scopus database is an important point and can be further explored by reflecting on how this affects the results and conclusions of the study. As already mentioned, expanding the data sources can help overcome this obstacle. Considering other databases, such as Web of Science, Google Scholar, or even university repositories, could generate a more robust and diverse literature base. In addition, the inclusion of unconventional research, such as

dissertations, theses, or case studies, can enrich the theoretical framework. Another important limitation is the need for a greater number of empirical studies on the use of GIS and photography in tourism. Since empirical research on these technologies is still limited, a direction for future studies is suggested here, such as field experiments, interviews with experts in the field, or the use of mixed methodologies that integrate qualitative and quantitative data. However, it was possible to search the Scopus database for enough data to create a line of reasoning and consider the importance of new researchers in tourism. Therefore, even with all the explanation, it is known that new discussions and discoveries can be carried out by expanding the database in other sources.

A deeper reflection on how these three elements interconnect could open new research questions. For example, how can the use of GIS in the photography of tourist destinations impact tourists' perceptions? Or how do images generated by these technologies influence decision-making when choosing tourist destinations? Exploring these interactions could be an excellent way to deepen the discussion and suggest new areas for future studies. It is suggested for future studies to improve the bibliometric analysis used in this work and expand the research in other databases such as *Web of Science*, where there may be a greater quantity of academic works, expanding the search to include additional databases or exploring underrepresented geographic areas in tourism studies.

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