# NAUTICAL TOURISM: A BIBLIOMETRIC ANALYSIS

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## ABSTRACT

Nautical tourism revolves around alternative aspects such as leisure activities related to water, sports, and navigation. In recent decades, it has positioned itself as one of the most developed segments within the global tourism market. This article analyses the main contributions in this area, understanding the complexity of finding an approximate definition of its concept. The objective is to analyse from 1989 to 2019 the scientific production of the term "nautical tourism" in addition to identifying which keywords and trends related to nautical tourism are currently being developed through the VOSviewer programme. For this, a bibliometric study of the documents inscribed in the WoS and Scopus databases has been carried out. Future trends in research include terms such as security, management risk, and Mediterranean.

Keywords: Nautical Tourism, Bibliometric Indicators, WoS, Scopus.

JEL Classification: L83, Z32, O30

## 1. INTRODUCTION

In recent years, nautical tourism has shown its capacity for recovery and survival among the different sectors of the world economy. There are many factors that influence its development such as its location, hydrographic resources, transport, accessibility, as well as cultural and social factors in the area.

The success of this kind of tourism depends on the wide range of activities it offers and on the possibility of integrating it with active tourism, sports, and contact with nature (Perelló, 2013). Likewise, Peláez (2003) places it within the framework of a set of relationships between people who come together when they travel for less than a year and whose main motivation is to carry out nautical activities.

Nautical tourism is a highly dynamic product of the coastal tourist space with great potential to develop consolidated destinations and can serve destinations that are not attractive for development (Gómez, 2012). The coast has great possibilities that go beyond the offer of sun and beach tourism, being able to develop nautical activities and of course the marinas. Marinas, apart from being a support infrastructure for nautical activities, are an additional complement to the local tourist offering for services that support the development of recreational boating and nautical tourism (Rivera, 2010), hence the importance of including within the field of study of tourism marinas and those support infrastructures that are located in the surroundings of the sea or riverside since in addition to offering moorings for recreational boats (sailing or motor), they generate services of tourist interest such as leisure, sports activities, and restaurants.

Despite the importance of nautical tourism and marinas at an international level, production in the academic and research fields has not been positioned with the same intensity. Tourism has been stimulated in scientific production on account of the interest it

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arouses in the research community. On the other hand, nautical tourism has lacked interest for researchers when compared to other areas of research (Forteza et al., 2017). The first article published on nautical tourism dates to 1989 and is entitled "Development of the Marinas in Yugoslavia", in which Deskovic dealt with the development of this tourism and its viability. Even though 30 years have passed since the first publication, the exact definition of nautical tourism is still a complex issue due to the multifunctional nature of nautical activities.

This circumstance has provided an opportunity to explore the interesting field of bibliometric analysis, which is based on two elements: scientific publication, as an indicator of research results (Moed, 2005), and the citations that have been made to measure its scientific impact (Merton, 1977).

The aim of this paper is to analyse from 1989 to 2019 the scientific production of the term "nautical tourism" through two databases (Web of Science and Scopus) as well as to identify, by means of keyword analysis, which are the most-used terms and which trends related to nautical tourism are currently developing through the trend graphs produced by VOSviewer.

## 2. LITERATURE OVERVIEW

Despite the limited literature on the term under study, in relation to the differences that may exist between nautical, maritime, and marine tourism (Forteza et al., 2017), there is no unanimity or clarity among the authors. In general terms, the differentiating element attributed to nautical tourism is the practice of sporting activities at sea (Ferradás, 2001; Luković, 2013) which can also be carried out in aquatic environments (Jovanovic et al., 2013). To continue with this point, there is no precise definition of the concept of nautical tourism as the authors point out that the definition has a certain complexity due to the links that it has with maritime and navigation activities; therefore, if all the elements that make it up are considered, a more complete definition of nautical tourism can be obtained (Luković, 2007). Other definitions of nautical tourism start from the perspective of the tourist product itself related to the practice of leisure activities in direct contact with the sea (Ayala, 2007).

For the study, firstly, a review of the concept has been carried out. Table 1 shows the different definitions of nautical tourism for the period 2000–2019 by various authors:

**Table 1. Nautical Tourism Definitions by Author**

| Author | Definitions |
|---|---|
| Cardona (2000) | Defines it as an active holiday in contact with the sea that allows all kinds of nautical activities to be carried out in leisure time. |
| Ferradás (2001) | Defined as segment of coastal tourism independent of the weather conditions related to leisure and sports activities developed at sea. |
| Yepes & Amor (2001) | The term nautical station appears. It is a project which aims to direct a coastal tourist destination towards the practice of water sports, sharing water activities with the enjoyment of nature and the recreational tourist offerings of the coastal regions. |
| Kovačić, Bošković & Favro (2006) | It is considered a recent commercial activity that has developed between ordinary tourism and maritime activity, comprising characteristics that make it a special type of tourism. |
| Luković (2007) | Definition and classification: marinas, charter, and cruise ports. This classification is common in developed European countries and is conditioned by the basic macro-strategic development model according to the natural factors of development. |
| Favro, Kovačić, & Gržetić (2008) | It is a complex system that requires the use of all the patterns and regularities of the general system theory for its management. |

| | |
|---|---|
| Kasum, Žani & Boži (2011) | It points out and highlights the importance of developing a relatively new nautical market, defining it as a system that is divided into technological subsystems at sea and on land. |
| Kovačić & Favro (2012) | Nautical tourism is a diversified branch of general tourism that has significantly changed the structure and peculiarities of the tourism industry. |
| Benevolo & Spinelli (2018) | They point out that nautical tourism is a variety of tourism with the sea as a distinctive element where the marinas are considered central actors of nautical tourism, dedicated to satisfying the complex and growing demand of the nautical tourist. |
| Kasum, Mikuličić & Kolić (2018) | It is a complex system that uses various forms of technical and technological processes and as such is exposed to certain risks. |
| Bal & Czalczynska-Podolska (2019) | It is a category of maritime tourism that generates direct impacts on coastal development and promotion and which, due to its importance, has become one of the most important areas of research. |

Source: Own Elaboration

Once the definitions provided by the authors have been reviewed, nautical tourism is understood to be those vacation activities or events that involve traveling for pleasure combined with sailing in a water environment: mainly fresh water, salt water, seas, oceans, rivers and lakes. For coastal areas with marinas, nautical tourism provides a further complement to the tourist and holiday offer of the area. The authors reveal that it is still a variant of tourism with the sea as the protagonist and at the same time a differentiating element where the marinas are considered as central actors of nautical tourism dedicated to satisfying the complex and growing demand of the nautical tourist (Benevolo & Spinelli, 2018).

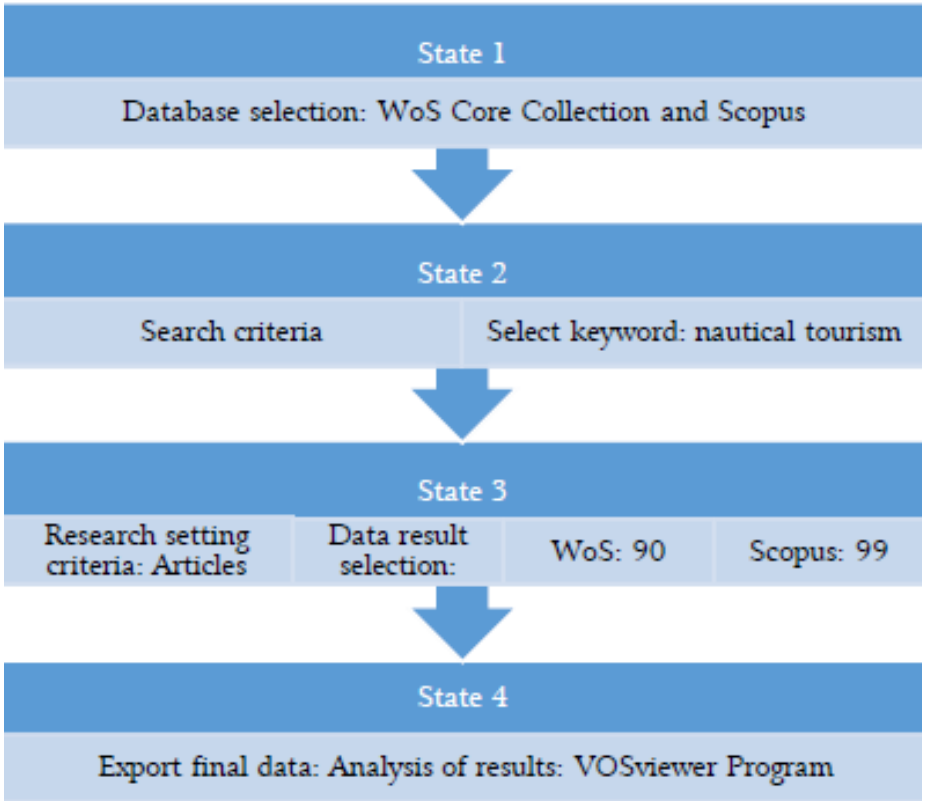
## 3. METHODOLOGY

To carry out the research in this article, bibliometric analysis has been used to study the scientific production of the authors and has been used in various areas (Junquera & Mitre, 2007).

Bibliometrics is designed by an interpretative profile of the researchers whose main emphasis is based on the selection of the database, the choice of keywords, the title of the abstract, and the content of the article (Meiras & Rojas, 2014). This study is based on the identification of a bibliographic portfolio based on an initial selection procedure comprised of four stages (Figure 1):

1. Selection of the databases available in the electronic journal portal, with Web of Science (WoS) and Scopus having been chosen.
2. Search of the documents directly in the databases by means of the electronic search systems via keywords. The term “nautical tourism” was chosen for the research.
3. Use of arbitrarily defined research filters to select articles according to the scope of the investigation and the decisions of the researcher. In this case, articles published in journals of impact were selected.
4. Pre-analysis of the articles with the intention of filtering and selecting those articles that best match the study with a qualitative approach through the analysis of empirical content which can be explored and applied to all forms of communication and sectors of the human sciences (Bardin, 2011).

**Figure 1. Stages of Bibliometric Analysis**




Source: Own Elaboration

The preliminary results of the search in the WoS database without applying any filters were a total of 121 documents. These results were refined according to the search criteria of this research, selecting only the main collection of Web of Science, thereby obtaining 90 documents. This was in turn adjusted to include only the articles published in scientific journals in order to guarantee the quality of the research.

In the case of the search in the Scopus database, a total of 180 documents were selected by article, title, and keywords and then refined by scientific articles, thereby obtaining 99 articles.

Once the results were obtained, we exported the results to be processed through the VOSviewer programme and subsequently analysed them.

## 4. RESULTS

### 4.1 Evolution in the Number of Publications Per Year

Table 2 provides information on the evolution during the study period of the number of articles cited, citations per article (average), and the h-index.

The evolution of the number of published articles had an increasing trend in both databases, with WoS being above Scopus in 2013 and 2017; in 2018 Scopus exceeded WoS. During the years 1989 to 2002, there were hardly any publications; it is from 2007 onwards that a significant growth can be observed in both databases, especially in Scopus.

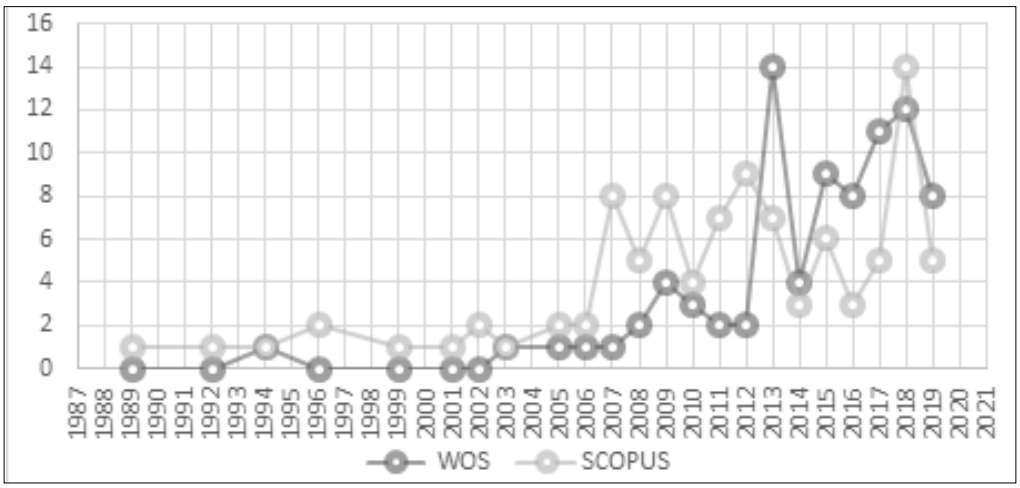
**Table 2. Evolution in the Publication of Articles, Citations, Citation per Article, and H-index**

| WoS | | | | | SCOPUS | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | **Article** | **Citation** | **Citation per article** | **h-index** | **Year** | **Article** | **Citation** | **Citation per article** | **h-index** |
| 1989 | - | - | - | - | 1989 | 1 | 0 | 0.00 | 0 |
| 1992 | - | - | - | - | 1992 | 1 | 2 | 2.00 | 1 |
| 1994 | 1 | 0 | 0.00 | 0 | 1994 | 1 | 0 | 0.00 | 0 |
| 1996 | - | - | - | - | 1996 | 2 | 4 | 2.00 | 1 |
| 1999 | - | - | - | - | 1999 | 1 | 0 | 0.00 | 0 |
| 2001 | - | - | - | - | 2001 | 1 | 1 | 1.00 | 1 |
| 2002 | - | - | - | - | 2002 | 2 | 1 | 0.50 | 1 |
| 2003 | 1 | 31 | 31.00 | 1 | 2003 | 1 | 6 | 6.00 | 1 |
| 2005 | 1 | 6 | 6.00 | 1 | 2005 | 2 | 0 | 0.00 | 0 |
| 2006 | 1 | 0 | 0.00 | 1 | 2006 | 2 | 10 | 5.00 | 2 |
| 2007 | 1 | 1 | 1.00 | 1 | 2007 | 8 | 24 | 3.00 | 3 |
| 2008 | 2 | 9 | 4.50 | 1 | 2008 | 5 | 8 | 1.60 | 2 |
| 2009 | 4 | 14 | 3.50 | 2 | 2009 | 8 | 10 | 1.25 | 2 |
| 2010 | 3 | 16 | 5.33 | 2 | 2010 | 4 | 21 | 5.25 | 3 |
| 2011 | 2 | 13 | 6.50 | 2 | 2011 | 7 | 16 | 2.29 | 2 |
| 2012 | 2 | 40 | 20.00 | 2 | 2012 | 9 | 37 | 4.11 | 2 |
| 2013 | 14 | 38 | 2.71 | 4 | 2013 | 7 | 22 | 3.14 | 2 |
| 2014 | 4 | 15 | 3.75 | 2 | 2014 | 3 | 4 | 1.33 | 1 |
| 2015 | 9 | 52 | 5.78 | 4 | 2015 | 6 | 54 | 9.00 | 4 |
| 2016 | 8 | 10 | 1.25 | 3 | 2016 | 3 | 9 | 3.00 | 2 |
| 2017 | 11 | 16 | 1.45 | 2 | 2017 | 5 | 3 | 0.60 | 1 |
| 2018 | 12 | 2 | 0.17 | 2 | 2018 | 14 | 3 | 0.21 | 1 |
| 2019 | 8 | 0 | 0.00 | 0 | 2019 | 5 | 5 | 1.00 | 0 |

Source: Own Elaboration

The evolution of the number of articles published in the Web of Science has seen a growing trend since 2007, with the year 2013 being highlighted with 14 articles. On the other hand, in the Scopus database, the first article was published in 1989 and has seen an increasing trend as of 2007, with 14 articles being highlighted for 2018 (Figure 2).

**Figure 2. Evolution of Articles in WoS and Scopus**

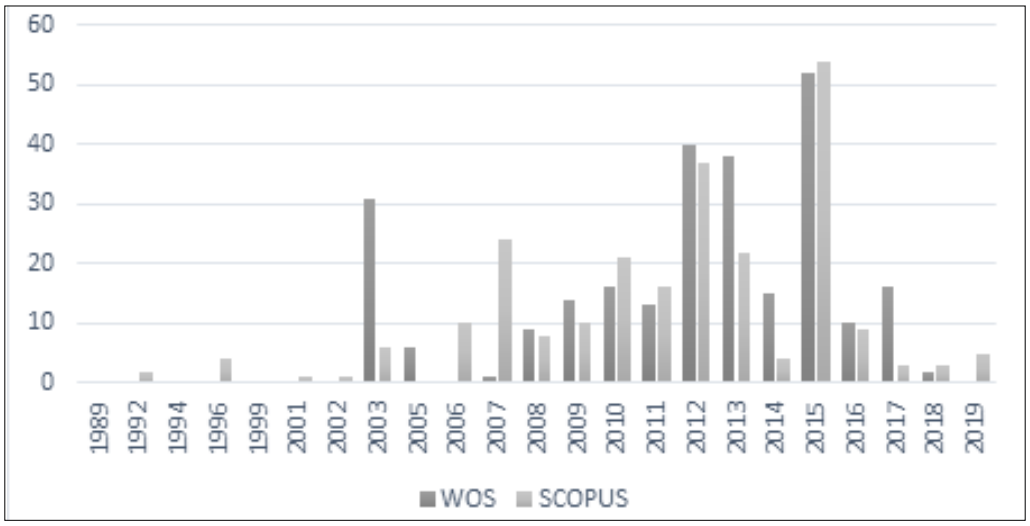



Source: Own Elaboration

Figure 3 shows the development of the total number of citations. In 2015, WoS had the highest number of citations for this database with 52 citations, but this number as exceeded by Scopus with 54. In the same year, Scopus has the highest h rating, while for WoS, the highest values were reached in 2013 and 2015.

According to the classification by category in WoS, the areas that have the most weight in research are social sciences (52%), engineering (25%), and sports sciences (18%), and the rest is made up of other areas such as transport, the environment, public administration, etc. In the case of Scopus, the result is similar, with social sciences (28%), engineering (22%), and the environment (20.1%) as the main areas, and the rest is made up of other areas such as chemical engineering, management, and business.

**Figure 3. Evolution of Citations in WoS and Scopus**




Source: Own Elaboration

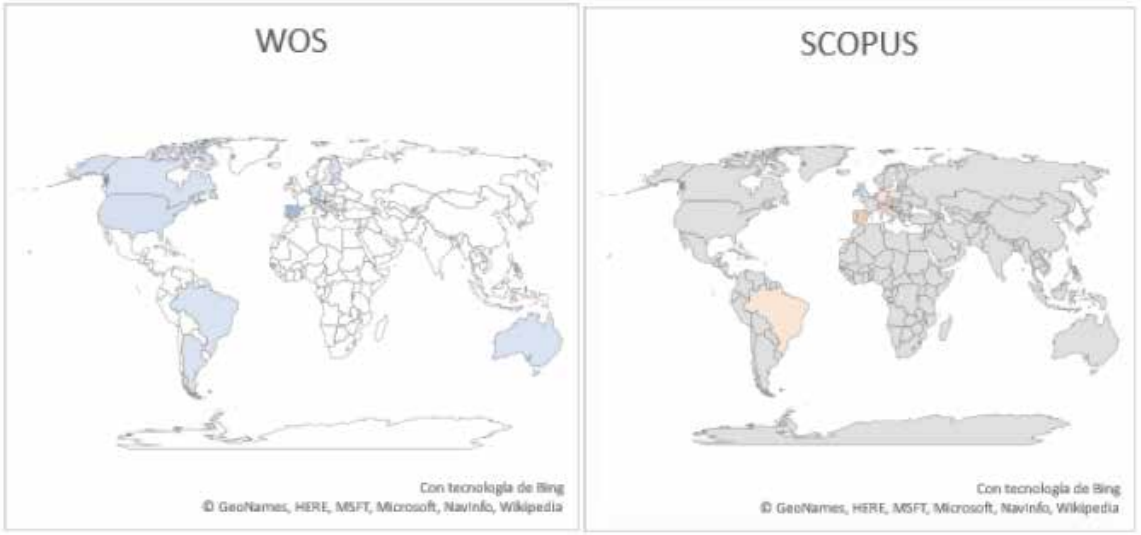
If the scientific production of articles is considered for period of the economic and financial crisis 2008–2014, we can see a rebound a year before the financial recovery during which time its evolution was growing, reaching its maximum in 2013, during which year the subject dealt with was related to case studies of the development of nautical tourism in

Croatia, the Baltic and Arctic regions, the Black Sea, and the Atlantic and Mediterranean coasts.

### 4.2 Analysis of Authors, Research Centres, and Countries

In analysing the origin of the articles (Figure 4) according to the WoS database by the countries that are most representative, the first position is occupied by Croatia, followed by Spain, Italy, and Portugal, adding up to 76.5% of the total.

**Figure 4. Density Map of Scientific Production**




Source: Web of Science and Scopus. Own Elaboration.

Table 3 contains the six authors with the highest number of citations and the most articles published in the WoS and Scopus databases.

In the WoS database, the most significant author is Mirjana Kovačić with 13 articles, 52 citations and an h-index of 4. With an h-index of 2 and 17 articles published is Tihomir Luković; both authors are affiliated with Rijeka University, Rijeka, Croatia. Srećko Favro has 5 articles, 16 citations, and an h-index of 3. The remaining authors—Gržetić, Z. and Gračan, D.—have between 5–8 articles, with few citations, and indexes varying between 1 and 2.

**Table 3. Most Relevant Authors**

| Author | Affiliation | Articles | Citation | h |
|---|---|---|---|---|
| Luković, T. | Rijeka University, Rijeka, Croatia | 17 | 29 | 2 |
| Kovačić, M. | Rijeka University, Rijeka, Croatia | 13 | 52 | 4 |
| Gržetić, Z. | Hydrographic Institute of the Republic of Croatia, Split, Croatia | 8 | 9 | 2 |
| Favro, S. | Sveučilište u Splitu, Split, Croatia | 5 | 16 | 3 |
| Gračan, D. | Rijeka University, Rijeka, Croatia | 4 | 1 | 1 |
| Kovačić, M. | Rijeka University, Rijeka, Croatia | 15 | 41 | 3 |
| Luković, T. | Rijeka University, Rijeka, Croatia | 11 | 21 | 3 |
| Favro, S. | Sveučilište u Splitu, Split, Croatia | 9 | 19 | 3 |
| Gračan, D. | Rijeka University, Rijeka, Croatia | 6 | 6 | 2 |
| Gržetić, Z. | Hydrographic Institute of the Republic of Croatia, Split, Croatia | 5 | 18 | 2 |

Source: Web of Science and Scopus. Own Elaboration.

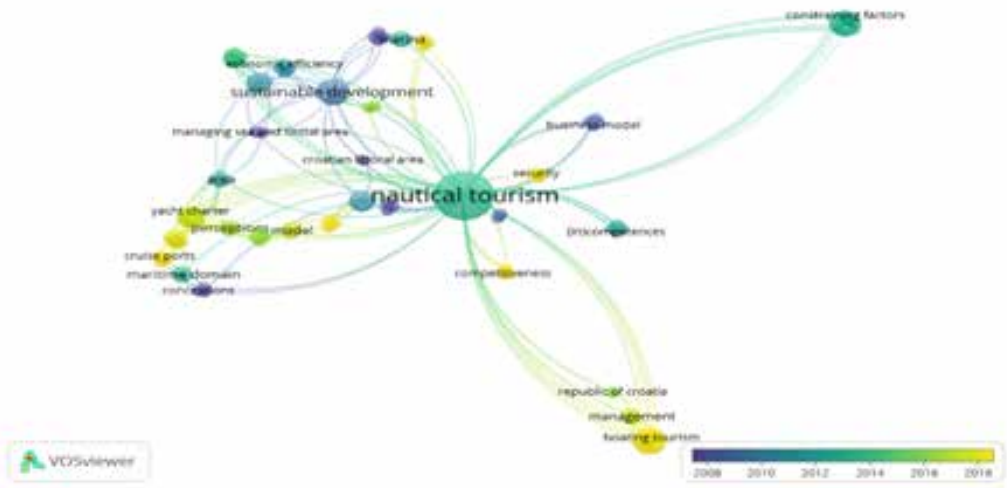
On the other hand, in the Scopus database we have Mirjana Kovačić with 15 articles, 41 citations with an h-index of 3, followed by Tihomir Luković with 11 published articles, 21 citations, and an h-index of 3. In third position is Srećko Favro with 9 articles, 19 citations, and the same h-index as the previous two. The authors Gračan, D., Dominis, Z., and Gržetić, Z. have an h-index between 1 and 2, but the difference is that Gržetić has 5 publications, 18 citations with almost the same number of articles, but the average is 3.6% higher than that of the others.

### 4.3 Trend Analysis

Through an analysis carried out on the keywords, the most-used terms and the current trend in relation to new aspects of nautical tourism are identified. To do this, VOSviewer was used to obtain trend graphs, in which a scale of colours ranging from blue to yellow indicates the novelty of the terms in the study period.

In Figure 5, with respect to WOS, the trends concern concepts related to competitiveness, the Mediterranean, development strategy, risk management, and economic and ecological impact.

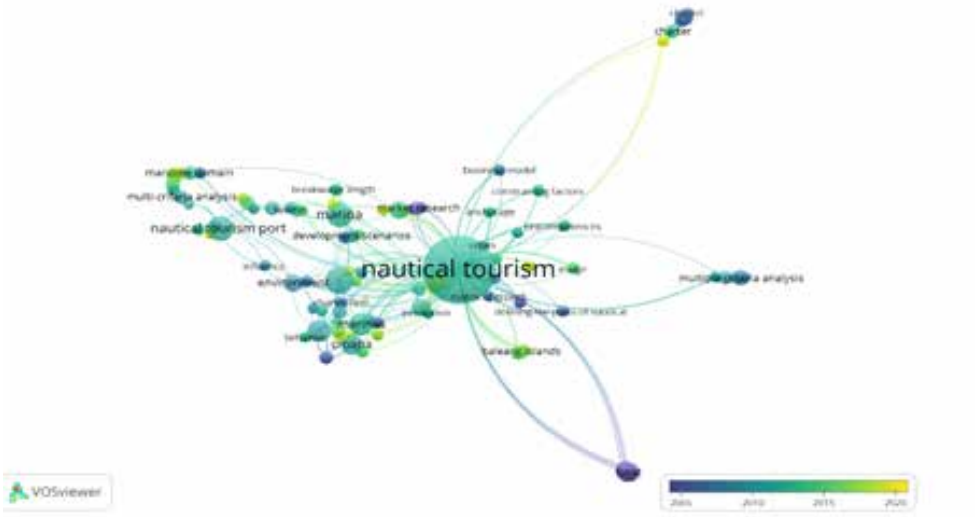
**Figure 5. Trends in Keywords According to WoS**




Source: Own Elaboration

In Scopus (Figure 6) the trends are focused on concepts related to blue growth, marine ecosystems, tourist ports, risk management, security, the Mediterranean, pleasure boating, web communication, website quality, and website evaluation.

**Figure 6. Trends in Keywords According to Scopus**




Source: Own Elaboration

If the trends of the keywords in both databases are grouped together, they coincide in the terms management risk and security and Mediterranean. These are terms that refer to risks in the management of tourism, which for some countries has become mass tourism that has been chosen as an economic activity. Due to its peculiarities, nautical tourism is a complex system with various technical and technological processes, hence the need to propose measures to guarantee its safety, especially in the regions of the Mediterranean Sea which are highly attractive to tourists for sailing due to their similar geographical and climatic conditions.

## 5. CONCLUSION

Nautical tourism is made up of those vacation activities or events that involve traveling for pleasure combined with sailing in an aquatic environment. For coastal areas that have marinas, nautical tourism is an element that differentiates an area from other localities, improves the tourist offering of the place, has a decisive role in the economy, and highlights the importance of good territorial planning, safety, and the environment for its sustainability.

Finding a definition for the concept of nautical tourism remains a complex issue as there are various factors and elements involved. It is a definition that is continually evolving due to the activities that are emerging and being incorporated into the term nautical tourism.

The authors with the largest number of citations and most published articles are Luković from the University of Dubrovnik, Kovačić from Rijeka University, Favro from Sveučilište Splitu, and Gržetić from Zvonko Hydrographic Institute of the Republic of Croatia Split; all these authors are from Croatia, a country with great potential for the development of nautical tourism, due to its roots in traditional seafaring and its great tourist attractions.

The main thematic areas of research in the Scopus database are focused on social sciences, engineering, and environmental sciences, while for the WoS database, the areas are overlapping with the exception of the environmental aspect which is in fourth position after sport. From the graphics produced by VOSviewer, the map of keywords generated around the concept of "nautical tourism" and those that are most repeated shows that they are related to the environment, marinas, sports, ports, legislation, management, safety, risk, competitiveness, sustainable development, fishing, nautical charter, etc....

According to the analysis of trends, concepts such as blue growth, marine ecosystems, tourist ports, risk management, and security emerge, terms which indicate the concern for environmental conservation and future lines of research in this field.

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