MAPPING MAJOR TRENDS IN GLOBAL RESEARCH IN MARINE AND COASTAL TOURISM: A BIBLIOMETRIC ANALYSIS

SYAMIMI MOHD ADAM[1], SYAMSUL HERMAN MOHAMMAD AFANDI[1]*, WAN NORHIDAYAH W MOHAMAD[1] AND SUZIANA HASSAN[2,3]

[1]School of Business and Economics, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia. [2]Faculty of Agricultural and Forestry Sciences, Universiti Putra Malaysia Bintulu Sarawak Campus, Nyabau Road, 97008 Bintulu, Sarawak, Malaysia. [3]Institute of Ecosystem Science Borneo, Universiti Putra Malaysia Bintulu Sarawak Campus, Nyabau Road, 97008 Bintulu, Sarawak, Malaysia.

*Corresponding author: syamsulhma@upm.edu.my

Abstract: Recently, marine and coastal tourism have become a rapidly rising trend in the tourism sector. This paper aims to scrutinise the significant trends in global research on marine and coastal tourism using bibliometric analysis. The bibliographic data of 969 studies were examined from the Scopus database to identify marine and coastal tourism research activity and the period was defined from 1986 until 2020. The dataset was retrieved on 3 October 2020. All the datasets were gathered without regard to a specific historical line to include those publications connected to both phases of the search. The reason behind gathering all the information was because of its contribution to this field. The study will highlight the journal's most prominent trends in terms of publications, universities, regions, keywords and journals. This study aids to provide a summary of the field of marine tourism. This study would help to increase ones understanding by exposing them to a major part of the primary research. The existing research points and possible future research topics will be documented in this study.

Keywords: Bibliometric analysis, tourism, global marine and coastal, Scopus database, sustainability studies.

Introduction

Marine and coastal tourism is a growing phenomenon has become an ubiquitous sector worldwide (Hall, 2001; Neva 2020). The tourism sector cannot stand on its own as it requires other sectors to complement it in order to function effectively and ensure its long-term sustainability (Syamimi *et al.,* 2019).

According to Tegar (2018), coastal and marine tourism are intertwined and rely on the sea and the marine environment to thrive. For tourists, marine and coastal areas are extremely valuable and provide myriad recreational activities.

According to Wei *et al.* (2013), the tourism industry is remarked as a contrivance to produce earnings and employment in a country and help develop local economy in many countries worldwide. Marafa and Chau (2016) justified a requirement for an incorporated scheme that can be translated into long-term development of marine and coastal tourism as an essential strategy to improve and to continue to attract tourists. The sustainable development of coastal and marine tourism needs complete action plan and policy.

Kunasekaran *et al.* (2018) found that area-based performance requires support from different sectors such as the government, business and society to reinforce policies and actions. Chen *et al.* (2014) summarised that inaugurating a sustainable funding system is vital with stakeholder participation which could strengthen public-private relationships and includes guidance for the management process and related policymaking.

Spalding *et al.* (2017) mentioned that proper tourism management would be sustainable and in fact, preferred for local biodiversity conservation in coastal and marine tourism areas. Moreover, since tourism services are intangible; images become more essential than reality. Images

play an essential role in eco-tourism destination choice and can influence tourists' travel-related decision-making (Adam *et al.,* 2018). Ewsearch shows visitors' preferences and choices are frequently incorporated into the formulation of public-area management policies (Mohamed *et al.,* 2021).

In recent years, an increasing number of academics have conducted research and published studies on marine tourism. There is a need to conduct a complete evaluation of the marine tourism domain by using bibliographic and network analysis in order to investigate the knowledge structure and distribution of the research material on maritime tourism to determine its depth and scope. The bibliometric approach is a multidisciplinary quantitative method of analysis based on the available articles and their references. The publication configurations and intellectual arrangements were analysed using bibliometric analysis.

Literature Review

Bibliometric Analysis

The scientific literature of a specific study area can be understood based on the efficiency of the instruments available for understanding the significance of that subject matter. This research paper suggests analysing the profitability of countries, scholars, scientific study fields and evolving research points. Generally, bibliometric analysis is an excellent method to analyse these outputs.

Bibliometric methodologies were derived from large-scale bibliographic research in database and materials information (Donthu *et al.,* 2020). According to Rehn *et al.* (2007), bibliometrics is a method of evaluating academic research using quantitative assessment of journal articles. According to bibliometric data, most research discoveries and results are eventually published in worldwide scientific publications. Other scholars can view and credit most of these articles.

Bibliometric analysis is characterised by the application of statistics to the study of a scholarly

article. Sweileh *et al.* (2017) notes bibliometric analysis is commonly employed to analyse the amount and detect patterns or configurations and consider the standard of published papers on a given study topic. The significant bibliometric points include how many articles were obtained, how many authors were involved, each author's output and the country's productivity or number of journals published.

Bibliometric explanations may be categorised into three parts, according to Duriex and Gevenois (2010): Frequency of criteria, quality of attributes and conceptual factors. The frequency of criteria represents an individual researcher's performance. Quality of attributes refers to the accomplishment of an individual's competence and conceptual factors illustrate the connections between authors, publications and research fields.

The number of publications in specific study fields may be used to assess the evolution of the trend or productivity of the publication. Citations, the number of citations received per year, total h-index, cites score and other characteristics can be used to assess the effect or performance of the articles. Ahmi (2019) mentioned that other studies focus on the performance of publications as well as the impact factor and impact per publication. Analysis like those of co-citation, co-authorship and bibliographic coupling can be used to appropriately assess the interaction of published resources.

Methodology

Source of Data

Luis *et al.* (2020) pointed out that the Scopus database is the primary data source to get a reliable picture of the significance of marine and coastal tourism research. Scopus is a well-known, leading and a prominent collection of quality intellectual and peer-reviewed literature even more so than rival databases PubMed or Web of Science (Ahmi & Mohd, 2019). Scopus emerged as a viable substitute because it was created specifically for bibliographical queries and citation analysis. Hallinger and Kovacevic

(2019) mentioned that as a comparison between the Scopus database and Web of Sciences, the Scopus database was more all-inclusive, describing the resources for many aspects of research, excluding medicine and other physical sciences.

Collaborating with solely Scopus references appears to be acceptable for these considerations. Huge amounts of information can be accessed, categorised and analysed with the aid of bibliometrics. Bibliometric analyses will help researchers to learn about the past and the progress of their inquiries while also allowing the establishment of potential research pathways through specific attributes.

This research paper expanded the accessibility guidelines research title page, allowing for the identification of more relevant academic articles on the research topic under consideration. As a result, in the search strategy, the following keywords were used: (TITLE) (marine tourism OR coastal tourism). All the datasets were gathered without regard to a specific historical line to include those publications connected to both phases of the search.

This inquiry produced a total of 969 results for us to investigate more fully. Access type, year, author name, keyword, country, language, affiliation and source types were all included in the database. The information was saved in CSV and RIS formats as part of the data sets. The data set was collected from a period from 1978 until 2019 retrieved on 3 October 2020. For this study, data was gathered depending on research questions. The research questions (RQ) used to gather the data were:

RQ1: What is the preference of publication trends in marine and coastal tourism?

RQ2: What topics in marine and coastal tourism research have received abundant attention in the literature?

RQ3: Which themes involving marine and coastal tourism are the most popular among scholars?

RQ4: What is the tendency to collaborate involving marine and coastal tourism?

RQ5: What is the intellectual arrangement of marine and coastal tourism research?

To answer the study objectives above, the bibliometric technique was used to systematically analyse the conceptual understanding and dispersion in the field of marine tourism to give a clear picture and depiction. Scholars specialising in marine tourism would benefit from a quick understanding of the industry's existing state and the depiction of prospective research gaps.

Analytical Tool

According to Costa and Caldeira (2018), the bibliometric technique has been broadly established to appraise numerous research subjects in most literacy areas such as natural and social sciences. Network visualisation of graphical mapping was used to appraise the research study trends and pageant some content structures in the current bibliometric study.

The visual mapping of the marine and coastal tourism research field used Visualisation of Similarities (VOSviewer) software. VOSviewer is a common option with a simple web application that aids in the creation of publications, authors, papers, institutions and countries that are all part of bibliometric networks (Sharifi, 2021).

A few other tools such as Microsoft Excel and Word Sift were also used, and the documents were appraised using Harzing's Publish and Perish software. Word Sift analysis was used on the accessible number of marine and coastal tourism literature to recognise the main keywords used most recurrently for marine and coastal tourism research studies.

Result

To achieve the justification of RQ1 (What is the preference of publication trend in marine and coastal tourism?), the publications trend was analysed in marine and coastal tourism using the

number of publications by year, country, journal and contributing author as well as contributing institutions.

Publication Activity by Year

Document by Year

The first publication in marine and coastal tourism was published by Charlier *et al.* (2006) in 1978 entitled "Coastal Environment Dilemma - Economic Development versus Tourism". The growth of publications increased year by year until 2020. Figure 1 summarises the evolution of publishing trends in marine and coastal tourism.

Table 1 lists the publications year on year from 1978 to 2020. Based on Table 1, the top first year was 2020 with 140 publications. In recent years, there has been an increase in the number of publications emphasising an increase in the attention of researchers on marine and coastal tourism and supporting an upcoming positive trend. The fact that oceans and seas cover more than three-quarters of the planet, and a lot of the world's countries have coastal areas, provides the most support for the rise in coastal and marine tourism. Because of the water or sea component, the two types of tourism, marine and coastal are intimately interconnected.
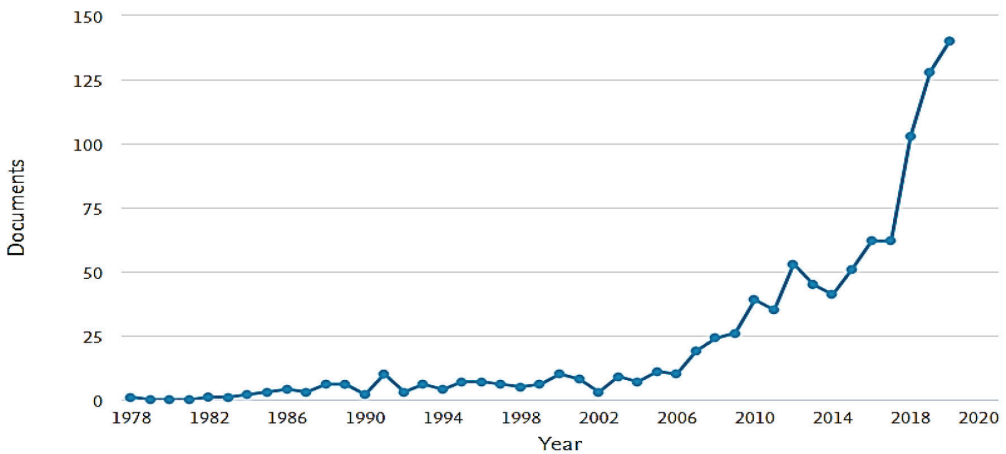
Figure 1: The number of publications of the article, conference paper, book chapter, review, book, editorial, notes, conference paper, business article, data paper, erratum, letter and short survey on marine and coastal tourism from 1978 to 2020

Table 1: Publications by year from 1978 to 2020

Year	Total Publications	Percentage (%)
1978	1	0.10
1982	1	0.10
1983	1	0.10
1984	2	0.21
1985	3	0.31
1986	4	0.41
1987	3	0.31
1988	6	0.62
1989	6	0.62

1990	2	0.21
1991	10	1.03
1992	3	0.31
1993	6	0.62
1994	4	0.41
1995	7	0.72
1996	7	0.72
1997	6	0.62
1998	5	0.52
1999	6	0.62
2000	10	1.03
2001	8	0.83
2002	3	0.31
2003	9	0.93
2004	7	0.72
2005	11	1.14
2006	10	1.03
2007	19	1.96
2008	24	2.48
2009	26	2.68
2010	39	4.02
2011	35	3.61
2012	53	5.47
2013	45	4.64
2014	41	4.23
2015	51	5.26
2016	62	6.40
2017	62	6.40
2018	103	10.63
2019	128	13.21
2020	140	14.45
Total	**969**	**100.00**

According to Papageorgiou (2016), the most significant component of the tourism industry is marine and coastal tourism. Given the above fact, it is not surprising why the number of publications on marine and coastal tourism keeps growing every year.

Document and Source Type

The type of documents published from data sets was also examined. According to Sweileh *et al.* (2017), type of documents refers to the different kinds of documents depending on the documents' novelty such as journals, conference proceedings, articles or book series. Type of source relates directly to documents that provide

Table 2: Document type that has been published in marine and coastal tourism

Document Type	Total Publications	Percentage (%)
Article	690	71.21
Conference paper	188	19.40
Book chapter	48	4.95
Review	18	1.86
Book	7	0.72
Editorial	5	0.52
Note	4	0.41
Conference paper	3	0.31
Business article	1	0.10
Data paper	1	0.10
Erratum	1	0.10
Letter	1	0.10
Short survey	1	0.10
Undefined	1	0.10

a source such as a journal, conference paper, book chapter, trade publication or book. Table 2 shows the document type used in the marine and coastal tourism study.

This study shows 13 documents published on the subject of marine and coastal tourism, including articles, conference papers, book chapters, reviews, books, editorial, notes, conference papers, business articles, data papers, erratum, letters and short surveys. Scopus had not classified one of the publications.

A total of 969 documents belonging of different types such as 690 articles (71.21%), 188 conference paper (19.40%), 48 book chapter (4.95%), 18 review (1.86%), 7 books (0.72%), 5 editorial (0.52%), 4 note (0.41%), 3 conference paper (0.31%), 1 business paper, 1 data paper (0.10%), 1 erratum (0.10%), 1 letter (0.10%), 1 short survey (0.10%) and lastly, 1 undefined of document type (0.10%) were studied.

The Language Used for Publications

Table 3 shows the language used in marine and coastal tourism of publications. The most frequent language used in the gathered publications in English, representing 92.96% of the total sources. This study shows fourteen languages that have been used in marine and coastal tourism publications, including English, Chinese, Spanish, French, German, Croatian, Russian, Bosnian, Italian, Persian, Portuguese, Serbian, Slovenian and lastly, Turkish. Scopus did not recognise one of the languages.

Publishing Activity by Country

In addition, depending on the author's affiliation institution, the number of publications is reviewed by country in this paper. 88 of the listed countries were active in the marine and coastal tourism industry publications. The 20 leading countries are listed in Table 4 contributing to a number of publications in marine and coastal tourism studies.

Table 4 portrays the literature analysis indicating that the United States is the highest-ranking contributor to the marine and coastal tourism publications. The second most dominant publisher is Indonesia (13.47%), followed by China (10.88%) and the United Kingdom (8.73).

Table 3: Language used for publications

Language	Total Publications	Percentage (%)
English	911	92.96
Chinese	21	2.14
Spanish	17	1.73
French	10	1.02
German	4	0.41
Croatian	2	0.20
Russian	2	0.20
Bosnian	1	0.10
Italian	1	0.10
Persian	1	0.10
Portuguese	1	0.10
Serbian	1	0.10
Slovenian	1	0.10
Turkish	1	0.10
Undefined	6	0.61

Table 4: Leading countries contributed to the publications in marine and coastal tourism

Country	Total Publications	Percentage (%)
United States	132	14.22
Indonesia	125	13.47
China	101	10.88
United Kingdom	81	8.73
Spain	80	8.62
Australia	78	8.41
Italy	39	4.20
South Africa	35	3.77
Canada	33	3.56
Turkey	32	3.45
New Zealand	29	3.13
France	28	3.02
Portugal	21	2.26
Germany	20	2.16
Malaysia	20	2.16
Netherlands	18	1.94
Mexico	17	1.83
Greece	14	1.51
Taiwan	13	1.40
Denmark	12	1.29

Publishing Activity by Journal

Table 5 represents the top publishing journals in marine and coastal tourism.

Table 5 lists the leading publishing journal in marine and coastal tourism. The *Journal of Coastal Research* has the most publications in total (64), followed by IOP Conference Series *Earth and Environmental Science* (47), *Ocean and Coastal Management* (44) and *Tourism in Marine Environments* (34).

However, *Ocean and Coastal Management* tops the list in the total number of citations leading with 1,368 citations. The second highest total number of citations is *Tourism Management*

(946), followed by the *Journal of Sustainable Tourism* (750) and *Marine Policy* (571).

Cite Score calculation is a method of evaluating the performance of the journals based on the citation impact of journals in Scopus data. Tourism Management has the highest Cite Score and SJR ranks compared to others. A citation from a source with a comparatively high SJR is significantly more than a citation from a source with a lower SJR (Scimago, 2020).

Publishing Activity by Author

Table 6 reveals Lück, M. affiliated with Auckland University of Technology, New

Table 5: Top publishing journal in marine and coastal tourism

Source Title	TP	TC	Publisher	Cite Score	SJR 2019	SNIP 2019
Journal of Coastal Research	64	498	Coastal Education & Research Foundation, Inc.	1.3	0.359	0.516
IOP Conference Series Earth and Environmental Science	47	33	N/A	0.4	0.175	0.514
Ocean and Coastal Management	44	1368	Elsevier	4.3	0.822	1.288
Tourism in Marine Environments	34	226	Cognizant Communication Corporation	1.4	0.347	0.435
Marine Policy	25	571	Elsevier	5.3	1.295	1.357
Journal of Sustainable Tourism	22	750	Taylor & Francis	6.4	1.333	1.823
Tourism Management	20	946	Elsevier	12.8	3.068	3.782
E3s Web of Conferences	15	5	N/A	0.4	0.166	0.469
Current Issues in Tourism	12	102	Taylor & Francis	7.5	1.404	2.309
Coastal Management	11	156	Taylor & Francis	2.8	0.554	0.588
Tourism Geographies	11	113	Taylor & Francis	5.0	1.069	1.923
African Journal of Hospitality Tourism and Leisure	9	9	Africa Journals	0.7	0.189	0.171
Annals of Tourism Research	9	441	Elsevier	6.8	2.228	2.564
Shengtai Xuebao Acta Ecologica Sinica	9	16	Ecological Society of China	1.1	0.229	0.390
Tourism Planning and Development	9	27	Taylor & Francis	2.7	0.521	0.887

TP = Total number of publications, TC = Total citations, SJR = Scimago journal rank, SNIP = Source normalized impact per paper

Table 6: Most productive authors in marine and coastal tourism with a minimum of five publications

Author's Name	Affiliation	Country	TP	NCP	TC	C/P	C/CP	h	g
Lick, M.	Auckland University of Technology	New Zealand	8	7	77	9.63	11	3	8
Miller, M. L	University of Washington, Seattle	United States	8	7	171	21.38	24.43	3	8
Oh, C.O.	Chonnam National University	South Korea	8	6	97	12.13	16.17	5	8
Williams, A.T.	University of Wales Trinity Saint David	United Kingdom	8	8	295	36.88	36.88	7	8
Auyong, J.	College of Agricultural Sciences	United States	7	4	83	11.86	20.75	3	7
Saayman, M.	North-West University	South Africa	7	7	123	17.57	17.57	5	7
Scott, D.	University of Waterloo	Canada	7	7	368	52.57	52.57	6	7
Anfuso, G.	Universidad de Cadiz	Spain	6	6	171	28.5	28.5	6	6
Jodice, L.W.	Clemson University	United States	6	3	35	5.83	11.67	3	5
Nunes	Food and Agriculture Organization of the United Nations	Italy	6	6	85	14.17	14.17	4	6
Kocasoy, G.	Bogaziçi Üniversitesi	Turkey	5	5	42	8.4	8.4	4	5
Needham	Oregon State University	United States	5	4	78	15.6	19.5	3	5
Slabbert, E.	North-West University	South Africa	5	5	101	20.2	20.2	4	5

TP = Total number of publications, NCP = Number of cited publications, TC = Total citations, C/P = Average citations per publication, C/CP = Average citations per cited publication, h = h-index, g = g-index

Zealand, Miller, M.L. affiliated with University of Washington, Seattle United States, Oh, C.O. affiliated with Chonnam National University, South Korea and Williams, A.T. affiliated with University of Wales Trinity Saint David, United Kingdom are among the writers who have published more than eight articles in this field of study.

The table also shows Scott, D from the University of Waterloo, Canada as the author with the most citations (368). Followed by Lück, M. affiliated with Auckland University of Technology, Canada and Anfuso, G. affiliated with Universidad de Cadiz, Spain which has 171 total citations.

Publishing Activity by Institutions

Table 7 depicts 23 institutions from different countries, which have been identified as the most significant institutes in the field of marine and coastal tourism research, with at least seven publications. The most dominant institutions are James Cook University in Australia and IPB University in Indonesia where 14 articles on marine and coastal tourism were published, followed by the University of Washington, North-West University and Griffith University, Australia.

Table 7: Most significant institutes in the field of marine and coastal tourism research, with at least seven publications

Institutions	Country	Total Publications	Percentage (%)
James Cook University	Australia	14	6.36
IPB University	Indonesia	14	6.36
University of Washington	United States	12	5.45
North-West University	South Africa	12	5.45
Griffith University	Australia	12	5.45
Clemson University	United States	11	5.00
Michigan State University	United States	11	5.00
Universitas Diponegoro	Indonesia	11	5.00
Wageningen University & Research	Netherlands	10	4.55
University of Waterloo	Canada	10	4.55
Universitat Rovira i Virgili	Spain	9	4.09
Auckland University of Technology	New Zealand	9	4.09
Universidade de Aveiro	Portugal	9	4.09
Southern Cross University	Australia	8	3.64
University of Hawaiʻi at Mānoa	United States	8	3.64
Universidad de Cadiz	Spain	8	3.64
National University of Singapore	Singapore	8	3.64
Murdoch University	Australia	8	3.64
Universitas Padjadjaran	Indonesia	8	3.64
Universidad de la Laguna	Spain	7	3.18
Oregon State University	United States	7	3.18
University of Tasmania	Australia	7	3.18
Universiti Malaysia Terengganu	Malaysia	7	3.18

Citation Network Analysis

Citation network analysis has been performed to answer RQ2 (What topics in marine and coastal tourism research have received much attention in the literature?).

Figure 2 illustrates the co-citation analysis in marine and coastal tourism. The various colours depict the author grouping depending on co-citation patterns in existing references and collaboration between authors.

Keywords Analysis

Keyword analysis has been done to answer RQ3 (Which themes involving marine and coastal tourism are the most popular among scholars?).

According to Kumar *et al.* (2019), the justification for performing co-occurrence and keyword analysis is to adequately signify the article's contents based on the author's keyword. The connection indicators appear between two theories when two different keywords exist in an article referring to keyword co-occurrence.

RQ3 (Whose themes involve marine and coastal tourism are the most popular among scholars?) emphasises acknowledging common topics among researchers involved in marine and coastal tourism. Keyword and co-occurrence analysis have been used to depict RQ3. Other scholars have done keyword and co-occurrence analyses to determine the implementation and

indication of innovations and information development.

Another keyword is that the words used in the marine and coastal tourism study, despite their modest size. It is worth mentioning that every word in Figure 3 is a currently popular keyword in marine and coastal tourism research. As a result, we may predict that further marine

tourism research will concentrate on these keywords.

Table 8 portrays the top keywords used in the published marine and coastal tourism article. The trending keywords such as coastal tourism, tourism, tourism development, coastal zone, marine tourism, sustainable development and

Figure 2: Co-citation analysis using fractional counting with the author's minimum number of citations is 20. The name of the authors is written inside the circles

Figure 3: Wordsift visualization of the top author keywords extracted from an article on marine and coastal tourism that was recently published. The total frequency distribution for the keywords is shown by the size of each word

Table 8: Top keywords used in marine and coastal tourism

Author Keywords	Total Publications (TP)	Percentage (%)
Coastal tourism	188	5.06
Tourism	176	4.74
Tourism development	128	3.45
Coastal zone	114	3.07
Marine tourism	99	2.66
Sustainable development	96	2.58
Ecotourism	84	2.26
Tourist destination	81	2.18
Coastal zone management	78	2.10
Tourism management	74	1.99
Coastal zones	69	1.86
Climate change	65	1.75
Beaches	51	1.37
Sustainability	50	1.35
Marine environment	44	1.18
Spain	39	1.05
Economics	38	1.02
Environmental protection	37	1.00
Beach	36	0.97
Environmental management	35	0.94

ecotourism have the highest frequency of use in marine and coastal tourism publications.

The analysis of top keywords used in marine and coastal tourism publications discovered some reconnoitring prevalent issues and trends. The most frequent keyword in the publications was coastal tourism (5.06%), enlightening a solid connection between coastal and tourism. The second-highest keyword was tourism (4.74%). Tourism development (3.45%) also appeared in most marine and coastal tourism studies. The keyword coastal zone (3.07%) has come to the attention of scholars in marine and coastal tourism research in line with the above. Other than that, the keyword marine tourism (2.66%) was used in 99 marine and coastal tourism publications.

Authorship and Co-occurrence Analysis

RQ4: What is the tendency to collaborate involving marine and coastal tourism?

RQ5: What is the intellectual arrangement of current research in marine and coastal tourism?

According to Benedetti-Cecchi *et al.* (2018), the collaboration of researchers is the prominent official manner of intellectual linked in the field of the research study. Palacios-Callender and Roberts (2018) agree that collaboration among scholars worldwide will include developing countries in the establishment flow of knowledge. A developed country usually guides this process. The current collaborations and identifying the most influential authors were

based on marine and coastal tourism to portray RQ4 and RQ5. Figure 4 shows the study using VOSviewer software to conduct a co-authorship analysis, which digs deeper into the authors' collaboration. The analysis relies on two minimal citations from influential authors and is calculated using fractional counting.

Figure 5 maps the bibliographic coupling with sources analysis based on a timeline view using VOSviewer software. The journals that published marine and coastal tourism articles over the years are based on hues of green. Figure 5 represents year 2020, marine and coastal tourism research articles were published in journals represented by the colour yellow.

Citation Analysis

As of November 1st, 2020, the citation metrics for the extracted articles are shown in Table 9. As shown in Table 9, there are 11,583 citations reported in 42 years (1978-2020) of marine and coastal tourism research for a total of 969 publications, with an average of 275 citations per year. This citation measures were created by loading a RIS formatted file from the Scopus database into Harzing's Publish and Perish software, which then displayed the raw citation metrics.

The top 20 most mentioned articles are listed in Table 10 above as per the Scopus database by justifying the number of times the document is cited. The manuscript titled *The Impact of Tourism and Personal Leisure Transport on Coastal Environments: A Review* by Davenport (2006) has acknowledged the topmost number of citations based on 416 citations and an average of 29.71 citations per year. The second most cited article was *Tourist Development Second Edition* by Pearce (1989) has received 351 citations and 11.32 citations per year. Then, the article *Applying the Ecosystem Services*
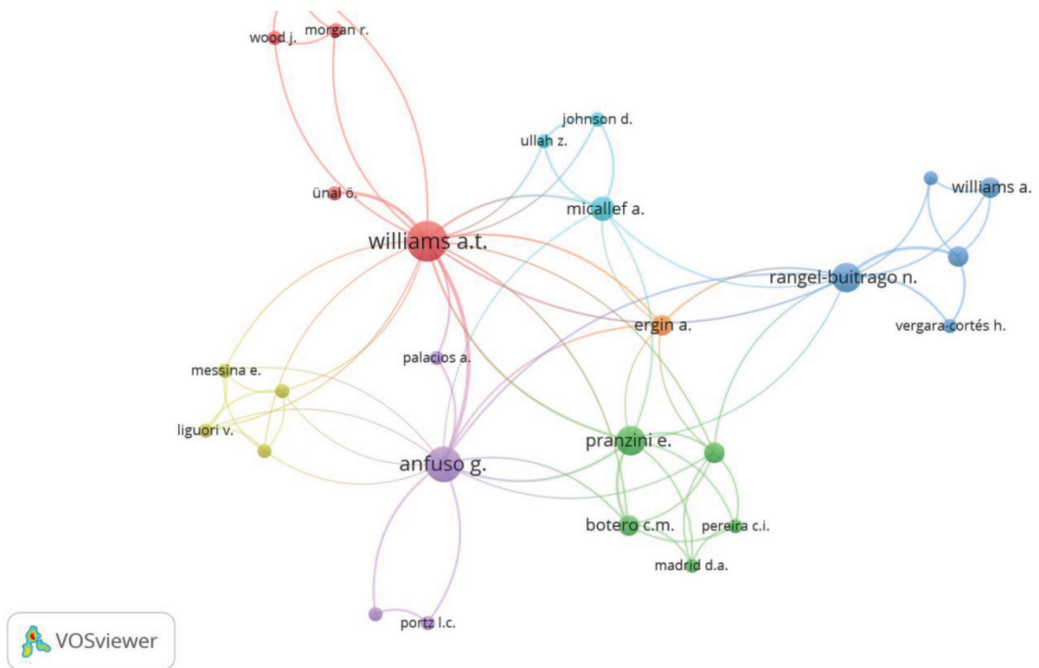

Figure 4: Network visualization map of the co-authorship using fractional counting with the author's minimum number of citations is 2. The different colours, size of both the circle and font size and viscidness of linking lines represent the potency of the relationship among the authors in marine and coastal tourism study - the same colour represents connected authors that are typically involved marine and coastal tourism research
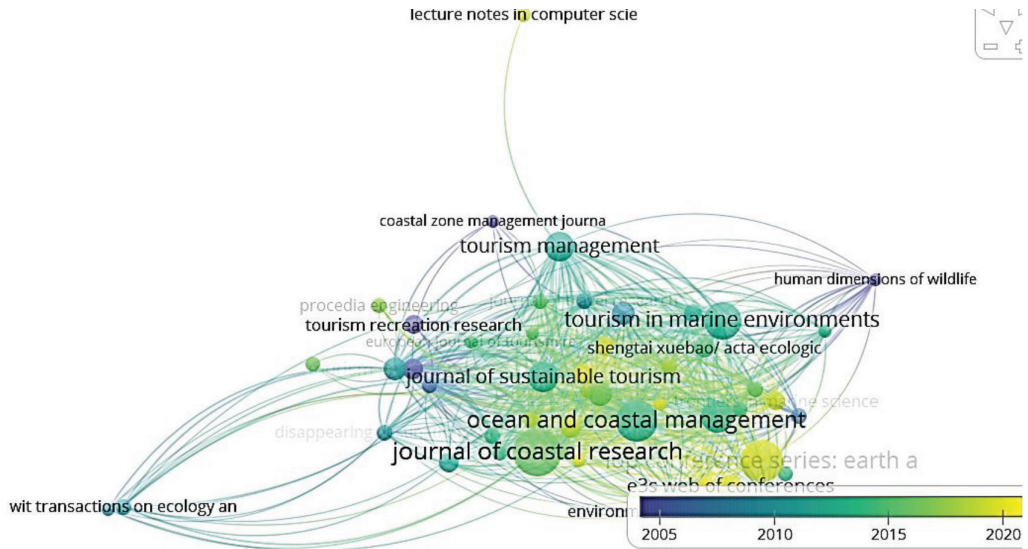
Figure 5: The colour display of published journals varies from blue (2005) to yellow (2020). Bibliographic coupling is based on a timeline view with sources represents based on the influential sources with three minimum numbers of documents and one minimum number of citations, which is determined by fractional counting

Table 9: Citation metric in marine and coastal tourism research

Metric	Data
Papers	969
Citations	11583
Years	42
Cites/year	275.79
Cites/paper	11.95
Cites/author	5688.3
Papers/author	478.12
Authors/paper	2.89
h-index	53
g-index	84

Concept to Poverty Alleviation: The Need to Disaggregate Human Well-being written by Daw *et al.* (2011) has received 312 citations and an average of 34.67 citations per year.

However, when we consider the most significant article depending on the number of citations every year, these articles by Spalding *et al.* (2017) and Daw *et al.* (2011) are the most influential, with 38.33 and 34.67 citations per year, respectively.

Conclusion

To sum up, this paper addresses publication issues of bibliometric studies on marine and coastal tourism issues. First and foremost, the publication patterns have been examined by

Table 10: The top 20 papers with the most citation

No.	Authors	Title	Cites	Cites per Year
1	Davenport (2006)	The impact of tourism and personal leisure transport on coastal environments: A review	416	29.71
2	Pearce (1989)	Tourist development. Second edition	351	11.32
3	Daw *et al.* (2011)	Applying the ecosystem services concept to poverty alleviation: The need to disaggregate human well-being	312	34.67
4	Akis *et al.* (1996)	Residents' attitudes to tourism development: The case of Cyprus	272	11.33
5	Hall (2001)	Trends in the ocean and coastal tourism: The end of the last frontier?	264	13.89
6	Katsanevakis *et al.* (2011)	Ecosystem-based marine spatial management: Review of concepts, policies, tools, and critical issues	234	26.00
7	Richlen *et al.* (2010)	The catastrophic 2008-2009 red tide in the Arabian gulf region, with observations on the identification and phylogeny of the fish-killing dinoflagellate Cochlodinium polykrikoides	198	19.80
8	Wickens E. (2002)	The sacred and the profane: A tourist typology	181	10.06
9	Najjar *et al.* (2000)	The potential impacts of climate change on the mid-Atlantic coastal region	148	7.4
10	Agarwal (1997)	The resort cycle and seaside tourism: An assessment of its applicability and validity	139	6.04
11	Scott *et al.* (2012)	International tourism and climate change	134	16.75
12	Moreno and Becken (2009)	A climate change vulnerability assessment methodology for coastal tourism	130	11.82
13	Spalding *et al.* (2017)	Mapping the global value and distribution of coral reef tourism	15	38.33
14	Hawkins *et al.* (1994)	The growth of coastal tourism in the Red Sea: Present and future effects on coral reefs	111	4.27
15	Tovar-Sánchez *et al.* (2013).	Sunscreen Products as Emerging Pollutants to Coastal Waters	105	15.00
16	Topelko *et al.* (2005)	The shark watching industry and its potential contribution to shark conservation	104	6.93
17	Young *et al.* (2006)	Application of airborne LIDAR for seacliff volumetric change and beach-sediment budget contributions	103	7.36
18	Klein *et al.* (2004)	Tourism-generated earnings in the coastal zone: A regional analysis	99	6.19
19	Yüksel *et al.* (2005)	Centralized and decentralized tourism governance in Turkey	97	6.47
20	Blancas *et al.* (2010)	The assessment of sustainable tourism: Application to Spanish coastal destinations	90	9.00

analysing research productivity, document and resource type, a document used for publications. The study's findings contribute to various aspects, such as publication patterns in marine and coastal tourism.

Second, we identify the publishing activity by country, journal and author. Then, the paper addresses the most dominant studies and authors by representing a VOSviewer software used to perform various analyses, including co-citation analysis, co-authorship analysis and bibliographic coupling analysis. The annual publication activity and contribution of marine and coastal tourism research organizations are also shown in the research productivity.

Despite being one of the most detailed databases for showcasing all scholarly publications, the Scopus database does not represent all accessible resources. Only research publications from the well-known Scopus database have been used for this study. Alternative resources that could be used for the proposed study include Web of Science, ScienceDirect, Google Scholar and ProQuest.

Combining all these databases will provide more appealing and significant results. Aside from that, the results were exclusively based on precise keyword such as "marine tourism" and "coastal tourism". Other keywords could be used in future.

Moreover, different types of analysis can be used in future studies such as co-citation analysis. Despite these imperfections, this study contributes to the existing knowledge by presenting the current research pattern in the field of marine and coastal tourism.

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