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MARITIME TOURISM TRANSPORTATION MANAGEMENT AND DEVELOPMENT IN MALAYSIA: A BIBLIOMETRIC ANALYSIS

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SUMMARY

This study presents a bibliometric analysis of maritime tourism transportation management and development, emphasizing Malaysia's contribution to global scholarship. Data were extracted from the Scopus database using title-based searches covering maritime tourism, island tourism, and transportation studies. A sample of 176 publications (1983–2022) was reviewed with Harzing Publish or Perish, VOSviewer, and Microsoft Excel and screened and validated through PRISMA. Findings reveal that there has been a consistent increase in the volume of publications since 2010 with Malaysia ranked as the top countries in the world (20.95%), aided by existing institutions like Universiti Sains Malaysia (USM) and Universiti Malaysia Terengganu (UMT). It is a moderately influential field with a moderate number of citations (1,785 citations, h-index = 23) and the concentration of themes in sustainability, tourism management, and ecotourism. New issues are emerging such as climate change, marine life, and green mobility, which have switched to sustainability and post-pandemic resilience. The results of the study indicate that Malaysia is emerging as an academic leader in maritime tourism, but also that the gap in research on the topic of transportation safety, digital transformation, and low-carbon mobility exists. This work has the advantage of providing the first detailed bibliometric mapping of the subject area that will help to inform policy, enhance regionalism, and align the maritime tourism strategies of Malaysia with the Blue Economy and Sustainable Development Goals (SDGs 8, 13, 14).

Key words: *maritime tourism, transportation, maritime logistics, blue economy, sustainability, coastal mobility.*

INTRODUCTION

Maritime tourism has been an integral part in generating income for countries. Over the past three years, the world has experienced the impact of the pandemic, which has significantly affected the tourism sector. By performing this bibliographic analysis, Certain countries manage and constantly develop their tourism aspects to ensure it is sustainable and will probably endure the challenges faced presently or in the near future. This bibliographical analysis will answer the following research questions. 1) How many scientific outputs produced related to this issue from 1983-2022? 2) Which authors contributing towards the researches been performed related to this issue? 3) Which institutions involved in researches related to Maritime tourism? 4) Which country highly contributed towards the scientific outputs? 5) What source titles linked towards the researches?

Maritime tourism transportation plays a pivotal role in the broader blue economy, which emphasizes the sustainable use of ocean resources to promote economic growth, improve livelihoods, and preserve ocean ecosystems. As the world transitions into a post-pandemic phase, the maritime tourism sector has become a key driver of sustainable tourism development. It facilitates access to coastal destinations, contributes to the local economy, and supports the achievement of critical Sustainable Development Goals (SDGs). It is interesting to note that SDG 8 (Decent Work and Economic Growth), that facilitates inclusive and sustainable economic growth, and SDG 14 (Life Below Water), that supports the conservation and the sustainable use of the oceans, seas, and marine resources, are directly connected with the development of maritime tourism [33]. The flexibility of this sector to respond to new issues, including sustainability and post-pandemic resilience, makes it an instrumental factor in socio-economic recovery and environmental management in coastal areas of the world.

The significance of maritime tourism transportation, especially in such countries as Malaysia, cannot be overestimated. The country has a rich coastline, islands, and marine resources and many maritime transport systems contribute to the development of his domestic and international tourism. This paper identifies the necessity of sustainable sea travel in the process of linking islands and coastal resorts, enabling the smooth passage of tourists, as well as ensuring sustainability and environmental friendliness to climate change. This study offers a dedicated bibliometric review of maritime tourism transportation in Malaysia, an area where systematic evidence remains limited. Although the previous literature has concentrated on such broad areas as tourism sustainability and island tourism, the current study will narrow down to the operational side of the maritime transport: its efficiency in logistics, the safety of vessels, and the digital transformation. Through the case of Malaysia, which is among the top maritime tourism regional powers, the study provides unique information on the importance of sustainable maritime mobility and eco-friendly innovations, which have been relatively underexplored in extant bibliometric research.

Key Contribution

- This research presents the bibliometric review of the maritime tourism transportation in Malaysia with the determination of major trends, authors, institutions, and the theme of research.
- The study emphasizes the significance of scalable maritime mobility in sustainable tourism, and it conforms to the blue economy paradigm, concerned with environmentally friendly ships and autonomous technologies to decrease carbon footprints.
- The analysis reveals the contribution of maritime tourism to SDG 8, which consists of development of local economies and employment, as well as the implementation of SDG 14, which implies the sustainability of maritime tourism and protection of marine ecosystems.

The paper is divided in the following way: Section 2 will provide a literature review of the maritime tourism with an emphasis on the contribution of transportation in the development of tourism and the problems that are faced in Malaysia. Section 3 describes the methodology, such as data sources, search strategy and the analysis tools. Section 4 displays the bibliometric results of the review of trends in publications, and citation features, and thematic orientations. Section 5 presents the findings, including the gaps in the research and providing the policy options to sustainable maritime tourism. Section 6 sums up on the main findings and gives future research directions.

LITERATURE REVIEW

The Role of Transportation in Tourism Development

Transportation is also among the most basic enablers of tourism development to connect the origins with destinations and movement that supports the experiences of traveling. According to [26], effective transportation networks not only increase accessibility but also affect tourism demand, regional competitiveness and sustainability of destinations. Transportation quality is a determinant factor of the entire tourism experience in the service delivery aspect. The comfort, safety, and reliability of transport networks between attractions, accommodation, and urban centers usually determines the satisfaction of tourists [25].

Some research papers have underscored the fact that destination image and tourist loyalty is directly influenced by the quality of transportation service [3][21]. When transport operators have the knowledge about multidimensional nature of service quality, such as tangibility, responsiveness and reliability, they are able to enhance operational efficiency and customer satisfaction, which translates to repeat visitation and eventually word of mouth promotion [22]. On the part of the customer, quality transport services will help to create a pleasant and smooth traveling experience, thereby raising the perceived value of the full tourism package [17].

Types of Tourism Transportation

The transportation of tourism involves various means that include land, air and water transport all of which play a distinct role in the accessibility of destinations and satisfaction to the tourists [32]. The most widespread transportation is land transport (cars, buses, trains), which is flexible and economical in the short and middle distances of movement [10], [27]. Air transportation, in its turn, is an essential connection between destinations that are geographically quite distant, especially in the context of international tourism markets [28].

But in the case of islands and coastal resorts, maritime transportation is also no less, and even more important. Although much has been written on the air and land mode of transportation, the maritime aspect of tourism transportation with the focus on small and medium vessels has received a relatively scarce amount of scholarly coverage [19]. Although there is a good literature on cruise tourism. smaller-scale activities like ferries, water taxis, and island-hopping boats underpin the work of the maritime tourism industry in most developing seaside destinations, including Malaysia [2][23].

Maritime Tourism Transportation in Malaysia

The geography of Malaysia is distinguished by a long coastline, several islands, which makes maritime transportation a necessity in terms of mobility in tourism and communication between locations. Kelantan, Terengganu, Pahang, and Mersing district of Johor are part of the East Coast Economic Region (ECER), a major sea tourism route [1]. The region also has some attractions in the form of islands, including Redang, Tioman, Rawa, Kapas, and Sibu, which attract both domestic and international tourists with the aim of recreational activities related to the sea, snorkeling, and diving [5][11]. Majority of the tourism transport in ECER is based on small and medium vessels which serve as ferries or personal boats to transport people to and out of the islands and also on excursions [34]. These are vessels that are very important to the tourism supply chain and are usually put to test when it comes to matters regarding safety standards, service provision, and environmental concerns. A high service quality in such operations is important since the maritime transport has direct effects on the initial and final impressions of the travel experience by tourists [3]. Although they are important, the research shows that both these international and domestic tourist satisfaction rates are lower than the optimum with 72.4% of international tourists and 89% of domestic tourists being satisfied with the maritime transport services available in Malaysia [29]. This gap demonstrates that it is necessary to have a comprehensive framework of Maritime Tourism Transportation Service Quality (MTTSQ) that would combine all aspects of safety, efficiency, environmental responsibility, and customer satisfaction [18], [23]. This kind of framework would not only improve the standards of operation but also help in the sustainability of the coastal tourism practices that are in line with the national tourism strategy of Malaysia [13].

Research Gap and the Need for Bibliometric Analysis

Although the relationship between transportation and tourism has been extensively researched within developed and emerging economies, the mapping of maritime tourism transportation studies in Malaysia has not been done systematically. Available literature is more inclined to case-based assessment, a measure of the quality of the services or a localized study without offering a globalized perspective of the development of research and patterns of collaboration during the years. In the existing literature on maritime tourism transportation, the main areas of concern are tourism management and its environmental effects, without examining important operational areas underexplored. There are certain gaps that are defined as the efficiency of logistics, the safety of vessels, and the use of digital technologies in the passenger mobility systems. Also, although the practice of cruise tourism has been thoroughly studied, more minor services such as ferries and water taxis are still neglected. Research to unite transportation logistics, sustainability, and digital transformation is required to fill these gaps and help achieve resilience after the pandemic.

Bibliometric analysis provides a methodological approach to addressing this gap. It allows one to quantitatively analyze the publication patterns, authorship, institutional contributions, and thematic changes in a field of research. Through bibliometric methods on Scopus database, this paper will establish the status of Malaysia in the maritime tourism scholarship worldwide and point out the areas where future studies and policy should focus on. The strategy would not only contribute to improved academic knowledge but also facilitate the development of evidence-based strategies in managing and developing maritime tourism to the Malaysian coastal and island destinations.

METHODS

Research Design

This research paper is based on a quantitative bibliometric methodology aimed at analyzing the development, form, and intellectual process of research in the field of maritime tourism transportation management and development on the example of Malaysia. The bibliometric analysis is a useful tool that helps assess the level of scientific productivity and analyze the work of authors, institutions, and countries in a given field of research [4]. The methodology offers an objective perspective of the way maritime tourism transportation is emerging as a research topic and assists in determining the major contributors, thematic focus, and emerging trends.

Data Source and Search Strategy

The Scopus database was used as the source of data in this study due to its inclusion of an outreach of peer-reviewed journals, conference proceedings, and book chapters that cut across the disciplines found in the study of tourism, transportation, and maritime. The search was made on 1 April 2022, a mixture of keywords was used that was aimed at addressing research related to maritime tourism, island. Malaysian tourism, and transportation management. The search query used in Title field was:

TITLE ("island" AND "tourism" AND "Malaysia") OR TITLE ("Malaysia" AND "East Coast" AND "tourism") OR TITLE ("Malaysia" AND "Tourism") OR TITLE ("Tourism Island" AND "Malaysia")

No limit was placed on the year of publication, type of document or language so as to include all of them. The first query produced 176 results, and they were screened and evaluated in terms of their eligibility using the predetermined inclusion criteria.

Screening and Selection Process

The retrieved documents were filtered through to make the documents relevant to the field of maritime tourism transportation and other related topics like the island tourism, the logistics of the marine, destination management, and coastal sustainability. Non-research materials, editors and other publications that had no relation to tourism transportation were avoided. After a thorough review, 28 records were removed for bibliometric analysis.

The methodology of the selection process was based on the Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) protocol [14], which provides transparency in the methodology. The entire process—including identification, screening, eligibility, and inclusion is illustrated in Figure 1, which presents the flow diagram of data selection.

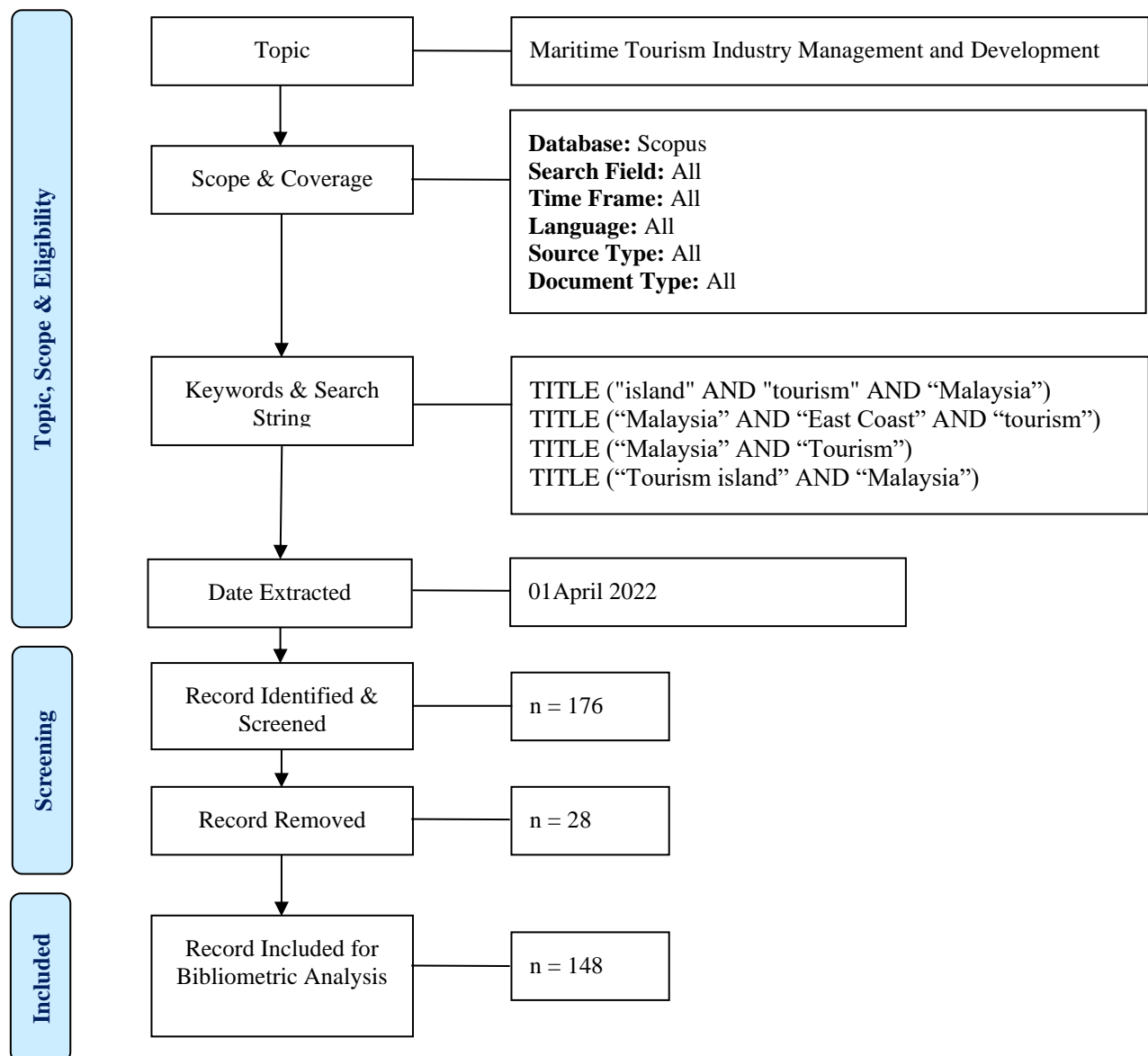


Figure 1. Flow diagram of the search strategy.

Source: Zakaria et al. (2020), Moher et al. (2010)

Data Analysis Tools

The bibliometric data were exported in BibTeX format and analyzed using three software applications:

- Harzing's Publish or Perish (PoP) — used to compute citation-based indicators such as the number of publications, total citations, average citations per year, *h-index*, and *g-index*.
- Microsoft Excel — used for descriptive statistics and tabular organization of data (e.g., document types, languages, and source titles).
- VOSviewer (Version 1.6.19) — It is applied to visualize and map networks of bibliometric relationships such as co-authorship, co-citation, and keyword co-occurrence networks.

These tools provided an opportunity to have a multi-dimensional vision of the maritime tourism research environment which brought out collaboration networks as well as thematic focus.

Limitations

Despite the wide coverage of the Scopus database, there is a possibility that some of the region or local publications that are local to the context of maritime tourism in Malaysia are not captured by the database. Moreover, bibliometric analysis is quantitative oriented and leaves out qualitative contents like theoretical contribution or methodological advances. Therefore, while the results offer an accurate overview of research trends, they should be complemented by qualitative or systematic review approaches in future studies to achieve a more comprehensive understanding of this research field.

RESULTS

Document Profile

The bibliometric analysis also revealed 176 publications on maritime and island tourism out of which 105 (70.95) were journal articles, 17 book chapters (11.49), and 15 conference papers (10.14). Review articles and editorials were a small percentage (less than 3).

This journal article prevalence highlights the intellectual maturity of maritime tourism research as empirical and conceptual research have increasingly been more common since 2010. The low percentage of the conference papers shows that there is a possible field of expansion in the publication of the research using the means of the academic symposia and international conferences.

Documents Profiles

Table 1. Document Type

Document Type	TP	%
Article	105	70.95%
Book Chapter	17	11.49%
Conference Paper	15	10.14%
Book	4	2.70%
Review	4	2.70%
Editorial	2	1.35%
Note	1	0.68%

Table 1 shows the spread of the types of documents in the analyzed publications. The dataset consists of journal articles, most of which constitute 70.95% of the total publications. Others comprise book chapters (11.49%), conference papers (10.14%), smaller proportions of books, reviews, editorials, and notes.

Source Type and Language Distribution

Out of the analyzed documents, 75.68% were published in academical journals, next were books (14.86%), and conference proceedings (7.43%). This establishes the fact that peer-reviewed journals are still the most preferred platform through which maritime tourism research can be disseminated. In terms of language, English dominated (99.32%), with only one publication (0.68%) in Croatian, reflecting the global nature and accessibility of English-language research in this field.

Table 2. Source Type

Source Type	TP	%
Journal	112	75.68%
Book	22	14.86%
Conference Proceeding	11	7.43%
Book Series	3	2.03%

Table 2 shows that the majority of the references are from journal articles, comprising 75.68% (112 sources). Books make up 14.86% (22 sources), while conference proceedings account for 7.43% (11 sources). Book series contribute the least, representing 2.03% (3 sources) of the total references.

Table 3. Languages

Language	TP	%
English	147	99.32%
Croatian	1	0.68%

Table 3 indicates the language distribution of the analysed publications. They are published in English (99.32) and a small percentage, 0.68, in Croatian.

Subject Area Distribution

The subject category analysis showed that the most prevalent ones were Social Sciences (57.43) and Business, Management and Accounting (52.70), which demonstrates that the policy, management, and service quality dimensions of maritime tourism were highly considered. The Environmental Science (28.38) and Earth and Planetary Sciences (8.11) were also very important shares and highlight the environmental implication of the coastal and marine tourism activity. The lower contributions were witnessed in Engineering (8.11%), Economics (8.78%), and Energy (6.08%) with increasing interdisciplinary integration to the maritime tourism research ecosystem.

Table 4. Subject Area

Subject Area	TP	%
Agricultural and Biological Sciences	9	6.08%
Arts and Humanities	4	2.70%
Business, Management and Accounting	78	52.70%
Chemical Engineering	2	1.35%
Computer Science	8	5.41%
Decision Sciences	3	2.03%
Earth and Planetary Sciences	12	8.11%
Economics, Econometrics and Finance	13	8.78%
Energy	9	6.08%
Engineering	12	8.11%
Environmental Science	42	28.38%
Mathematics	1	0.68%
Medicine	2	1.35%
Multidisciplinary	1	0.68%
Pharmacology, Toxicology and Pharmaceutics	1	0.68%
Physics and Astronomy	1	0.68%
Psychology	1	0.68%
Social Sciences	85	57.43%

Table 4 shows the allocation of the subjects in the reviewed publications. The biggest percentage, 57.43, is under Social Sciences and the second biggest percentage is 52.70, which is under Business, Management, and Accounting. Others that feature prominently are Environmental Science (28.38%), Earth and Planetary Sciences (8.11%), and Economics (8.78%). Smaller investments can be noted in such fields like Engineering, Computer Science, and Agricultural and Biological Sciences, which shows the interdisciplinary character of maritime tourism studies.

Publication Trends Over Time

The time distribution of the publications demonstrates the constant increase in research activity during 2010 and 2021 that covers close to a quarter of the total amount of publications. The years 2020 and 2021 represent a peak, as sustainable tourism and maritime resilience have become a topic of academic interest due to and after the COVID-19 pandemic. On the other hand, the early years (1980s/1990s) showed a lack of scholarly interest which was due to the fact that the research into maritime tourism was still in its infancy.

Table 5. Year of Publication

Year	TP	%
2022	2	1.35%
2021	20	13.51%
2020	16	10.81%
2019	10	6.76%
2018	7	4.73%
2017	7	4.73%
2016	8	5.41%
2015	10	6.76%
2014	6	4.05%
2013	7	4.73%
2012	14	9.46%
2011	8	5.41%
2010	5	3.38%
2009	5	3.38%
2008	5	3.38%
2007	2	1.35%
2006	2	1.35%
2005	2	1.35%
2004	1	0.68%
2003	1	0.68%
1999	3	2.03%
1993	1	0.68%
1992	2	1.35%
1986	1	0.68%
1984	1	0.68%
1983	2	1.35%

As shown in the table 5 above, the year 2010-2021 contributed the most in term of number of publications with the total of 24.32% and several years contributed the least with only 0.68% contributions.

Figure 2 illustrates the number of publications in maritime tourism transportation research from 1983 to 2022. The rise is consistent, with peaks in 2020 and 2021, but it suggests a high volume of publications, which could be because of the increased academic and policy interest in sustainable maritime tourism and post-pandemic recovery. The fact that the number is growing rapidly over the past few years shows the growing relevance of the sector in the global research arena.

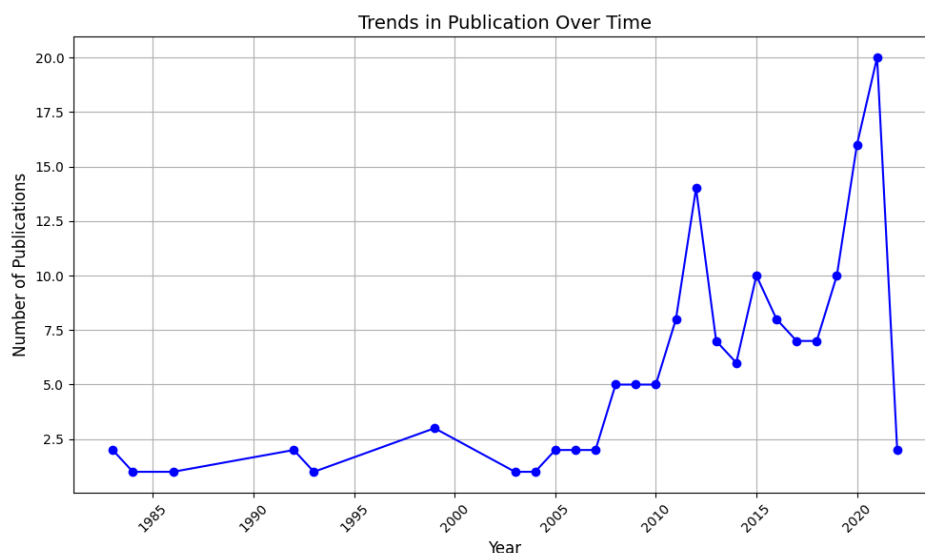


Figure 2. Trends in Publication Over Time

Authorship and Institutional Productivity

Table 6. Most Productive Authors

Author Name	TP	%
Mohamed, B.	8	5.41%
Carlsen, J.	6	4.05%
Butler, R.	4	2.70%
Hoti, S.	4	2.70%
Omar, S.I.	4	2.70%
Shareef, R.	4	2.70%
Chia, K.W.	3	2.03%
Graham, S.C.	3	2.03%
Ho, J.A.	3	2.03%
Lew, A.A.	3	2.03%
Marzuki, A.	3	2.03%
McAleer, M.	3	2.03%
Meyer-Arendt, K.J.	3	2.03%
Nordin, A.O.S.	3	2.03%
Ramachandran, S.	3	2.03%
Adrianto, L.	2	1.35%
Ahmad, K.N.	2	1.35%
Almeida-Santana, A.	2	1.35%
Awang, K.W.	2	1.35%
Bengen, D.G.	2	1.35%
Brown, K.G.	2	1.35%
Chen, P.H.	2	1.35%
Cheng, T.M.	2	1.35%
DeLacy, T.	2	1.35%
Dominey-Howes, D.	2	1.35%
Hazmi, N.	2	1.35%
Ismail, F.	2	1.35%
Ismail, N.	2	1.35%
Jiang, M.	2	1.35%
Kuo, N.W.	2	1.35%
Kurniawan, F.	2	1.35%
Lee, T.J.	2	1.35%

Authorship was analysed, with Mohamed, B. and Carlsen, J., having the most prolific contribution of almost 9.46 percentage of total publications. Additional contributors to the research on the topic of island tourism and destination management include Omar, S.I., Marzuki, A., and Lew, A.A., who have contributed significantly to the topic.

At institutional level, Universiti Sains Malaysia (USM) and The University of Western Australia (4.05% and 3.38% respectively) published the most number of papers respectively (12 and 4.05). This is in line with the increasing academic leadership in the area by Malaysia based on international partnerships with major universities mostly in Australia, Britain and Taiwan.

Based on the table 6 above, Mohamed B and Carlsen J considered as top two most active author publishing articles related to the topic. Their contribution amounted to 9.46% and several authors have similar contributions towards the field.

Table 7. Most productive institutions with minimum of four publications

Institution	TP	%
Universiti Sains Malaysia	12	8.11%
The University of Western Australia	6	4.05%
Curtin University	5	3.38%
Universiti Malaysia Terengganu	5	3.38%
Universiti Teknologi MARA	4	2.70%
University of Prince Edward Island	4	2.70%
Universidad de Las Palmas de Gran Canaria	4	2.70%
Universiti Putra Malaysia	4	2.70%
Strathclyde Business School, United Kingdom	4	2.70%

Table 7 highlights the most productive institutions in maritime tourism research. Universiti Sains Malaysia is also the most prolific with 8.11% of the publications, then The University of Western Australia (4.05%) and Curtin University and Universiti Malaysia Terengganu (both 3.38%). Other colleges with a share of 2.70% are Universiti Teknologi MARA, University of Prince Edward Island, Universidad de Las Palmas de Gran Canaria, Universiti Putra Malaysia and Strathclyde Business School.

Geographical Distribution of Publications

Malaysia was the leader in the number of publications (31, 20.95%), next in rank were Australia (14.19%), China (9.46%), and the United States (9.46%). The findings prove the central role of Malaysia in maritime tourism research in Southeast Asia due to the high participation of the country in the study of coastal and island tourism in terms of academic and institutional participation. Nevertheless, there is still a relatively low rate of collaboration with neighboring countries like Indonesia and Thailand which can imply some improvement in regional research collaborations.

Table 8. Top 10 Countries contributed to the publications

Country	TP	%
Malaysia	31	20.95%
Australia	21	14.19%
China	14	9.46%
United States	14	9.46%
United Kingdom	12	8.11%
Taiwan	10	6.76%
Canada	7	4.73%
Spain	7	4.73%
New Zealand	6	4.05%
Indonesia	5	3.38%

Table 8 illustrates the geographical distribution of publications in maritime tourism research. Malaysia is the top in the publications with 20.95 % followed by Australia with 14.19 % and China and the United States with 9.46 % respectively. Other contributory nations are United Kingdom (8.11%), Taiwan (6.76%), Canada and Spain (4.73% each) with New Zealand and Indonesia making smaller contributions.

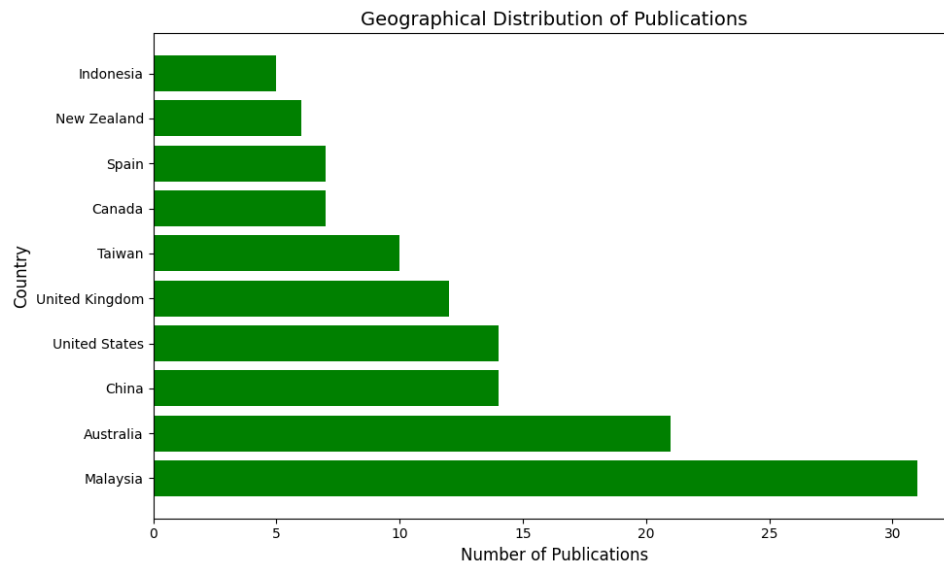


Figure 3. Geographical Distribution of Publications

Figure 3 shows the geographical distribution of the publications on maritime transportation of tourism. It puts emphasis on Malaysia as the number one contributor and then other countries like Australia, China, United States and United Kingdom. The chart emphasizes Malaysia's prominent role in maritime tourism research, reflecting its strong academic involvement and leadership in the field, particularly within Southeast Asia.

Citation Metrics and Research Impact

The 176 documents collectively accumulated 1,785 citations, with an average of 12.06 citations per paper and an h-index of 23. The article with the highest number of citations (164) was published by Cheng and Wu (2015)[7] under the title How do environmental knowledge, environmental sensitivity, and place attachment affect environmentally responsible behavior? which indicates the popularity of sustainability-based research in the field of maritime tourism. The citation counts show an increase in the awareness of the maritime and island tourism research as an important part of the global tourism and environmental management research.

Table 9. Most active source titles

Source Title	TP	%
Island Studies Journal	7	4.73
Tourism Management	6	4.05
Island Tourism Towards a Sustainable Perspective	5	3.38
International Journal of Culture Tourism and Hospitality Research	4	2.70
Journal Of Marine and Island Cultures	4	2.70
Sustainability Switzerland	4	2.70
Tourism Management Perspectives	4	2.70
Asia Pacific Journal of Tourism Research	3	2.03
Current Issues in Hospitality and Tourism Research and Innovations	3	2.03
Journal Of Sustainable Tourism	3	2.03

Table 9 shows Island studies journal considered as the most active source title with 4.73% contribution percentage and 7 total publications followed by tourism management with 4.05% contribution percentage and 6 total publications.

Table 10. Citation's metrics

Papers	148
Citations	1785
Years	39
Cites_Year	45.77
Cites_Paper	12.06
Cites_Author	865.19
Papers_Author	79.96
Authors_Paper	2.51
h_index	23
g_index	38

In Table 10, citation metrics of 148 papers are offered, where the total of citations is 1,785 in 39 years. The impact is moderate with an average number of citations per paper of 12.06 and the h-index of 23. The g-index stands at 38, which indicates a high increase in citation. The average number of authors per paper is 2.51, suggesting collaborative efforts in research.

Table 11. Top 10 highly cited articles

Author(s)	Title	TC	C/Y
T.-M. Cheng, H.C. Wu (2015)	How do environmental knowledge, environmental sensitivity, and place attachment affect environmentally responsible behaviour? An integrated approach for sustainable island tourism	164	23.43
N.-W. Kuo, P.-H. Chen (2009)	Quantifying energy use, carbon dioxide emission, and other environmental loads from island tourism based on a life cycle assessment approach	141	10.85
C.C. Lim, C. Cooper (2009)	Beyond sustainability: Optimising Island tourism development	72	5.54
T.-M. Cheng, C.-C. Lu (2013)	Destination Image, Novelty, Hedonics, Perceived Value, and Revisiting Behavioural Intention for Island Tourism	68	7.56
A. Marzuki, I. Hay, J. James (2012)	Public participation shortcomings in tourism planning: The case of the Langkawi Islands, Malaysia	59	5.9
K. de Albuquerque, J.L. McElroy (1992)	Caribbean small-island tourism styles and sustainable strategies	59	1.97
J. Carlsen (1999)	A systems approach to island tourism destination management	53	2.3
S.I. Ng, K.W. Chia, J.A. Ho, S. Ramachandran (2017)	Seeking tourism sustainability: A case study of Tioman Island, Malaysia	51	10.2
Z. Ghaderi, A.P. Mat Som, J.C. Henderson (2012)	Tourism crises and island destinations: Experiences in Penang, Malaysia	49	4.9
J. Kokkranikal, R. McLellan, T. Baum (2003)	Island tourism and sustainability: A case study of the Lakshadweep islands	48	2.53

Table 11 lists the top 10 most cited articles in maritime and island tourism research. Key topics include environmentally responsible behavior, energy use, sustainability strategies, and tourism crises in island destinations. The articles by [7] on sustainable island tourism and Kuo and Chen (2009) on the environmental loads in island tourism are notable ones. The works have had a major impact on the field as it has been cited up to 48-164 times.

Keyword and Thematic Analysis

The constructs that according to key-word co-occurrence, were the most used were Island Tourism, Tourism Development, Tourism Management, Sustainability and Ecotourism. This indicates that maritime tourism studies in Malaysia have been more inclined to sustainable developments, destination

competitiveness and management structures. The appearance of new keywords like the one concerning climate change, marine ecology, and tourism mobility shows that a gradual transition towards environmental and systems-oriented approaches occurs in the sphere in terms of priorities.

Table 12. Top author's keywords

Keywords	TP	%
Island Tourism	34	22.97%
Tourism	32	21.62%
Tourism Development	32	21.62%
Tourism Management	17	11.49%
Ecotourism	14	9.46%
Malaysia	14	9.46%
Sustainable Development	14	9.46%
Sustainability	12	8.11%
Tourist Destination	12	8.11%
Sustainable Tourism	11	7.43%

Table 12 shows the most common keywords used in the maritime tourism research with Island Tourism (22.97) and Tourism (21.62) having the most common keywords. Other significant themes are "Tourism Development" 9.46%, "Ecotourism" 9.46, "Sustainability" 9.46 and "Sustainable Development" 9.46 (each). These keywords reveal the sustainability, tourism management, and development with a good focus on Malaysia as a central topic.

Summary of Key Findings

Generally, the bibliometric findings indicate that the state of research on the topic of maritime tourism transportation management in Malaysia is growing in the field of scope and depth. The science is overtaken by management and sustainability motifs, which are backed by intense institutionalization, and the expansion of international cooperation. Nevertheless, it might be possible that further studies could shed light on the topics of transportation logistics, safety requirements, digitalisation, and environmental sustainability in the maritime tourism industry.

DISCUSSION

The bibliometric results show that the study of maritime tourism transportation has changed proportionately in the scope and depth in the last forty years. The rising number of publications since 2010 is evidence of the academic and policy interest in the blue economy and the inclusion of maritime tourism as one of the main drivers of sustainable coastal development [8], [9]. The growth of the body of research in 2020/21 is related to the COVID-19 pandemic that provoked the new research directions in the study of tourism resilience, crisis management, and destination recovery [6], [20].

The prevalence of journal articles (70.95) and use of English publications (99.32) indicate the internationalization of scholarly research on maritime tourism. Nevertheless, the small share of conference papers (10.14) indicates that researchers have not been heavily involved in transnational academic cooperation and knowledge exchange. As [12] recommends, to improve the depth of innovation in the field of maritime and coastal tourism research and the significance of the policy, it is necessary to expand platforms of collaborative and multidisciplinary research.

Thematic concentration According to the present, the focus in the current scholarship is towards the managerial, service quality, and economic facets of maritime tourism as opposed to the technical, logistical, and environmental facets of the subject as the majority of the fields are dominated by the Social Sciences (57.43) and Business, Management, and Accounting (52.70) fields. Research papers like those by [13], [16] point out that sustainable maritime tourism needs integrated research models that involve management sciences and engineering, maritime transport logistics, and environmental safety. It is especially crucial concerning the interdisciplinary integration in Malaysia, where the transportation of tourism affects the accessibility of the islands, the experience of visitors, and the health of ecosystems directly [23].

The subsequent increase of the publications in the pandemic period also demonstrates the change of the scholarly discourse to sustainability and resilience. This is consistent with findings from global analyses showing that maritime and island destinations have increasingly incorporated resilience frameworks and climate adaptation strategies into their planning [24], [30]. The integration of sustainable transport, low-carbon mobility, and green ferry operations into coastal tourism policies is now viewed as essential to achieving carbon neutrality and improving destination competitiveness [16], [31].

The domination on publication volumes by the Malaysian leadership, through its various institutions notably Universiti Sains Malaysia (USM) and Universiti Malaysia Terengganu (UMT) is an indication of an emerging academic ecosystem in maritime tourism research. This compares with the finding of Hall (2020) noted that the coastal states in Southeast Asia are becoming new knowledge production hubs on sustainable marine tourism. Nevertheless, it is also marked by the lack of closer cooperation with other members of the region, ASEAN, which should be seen as the evidence of the necessity to establish more serious ties between the regions to solve common problems, including marine pollution, port accessibility, and safety of the visitors [15].

The citation performance (h- index = 23) and a cumulative number of citations (1,785) demonstrate the rising academic impact, but there is still the opportunity to increase the impact by conducting more comparative, cross-regional, and theory-related works. Less prominent works (e.g., Cheng and Wu, 2015) prioritize the concept of environmental behavior, place attachment, and sustainable tourism, which is an indication of a global investigation that Malaysia could capitalize on even more through its abundance of maritime and ecological biodiversity.

Lastly, the keyword co-occurrence analysis helps emphasize the fact that the field is conceptually intensive around the keywords: island tourism, tourism development, and sustainability. Nonetheless, the advent of such concepts as climate change, marine ecology, and tourism mobility is an indicator of a current paradigm shift to unified sustainability science [13], [16]. In the case of Malaysia, this change provides an opportunity to make its maritime tourism industry an example of sustainable transportation innovation and resiliency-based management.

CONCLUSION

The paper offers a bibliometric literature review of the subject of maritime tourism transportation management as applied to the case of Malaysia. Examining 176 publications through Scopus index, Malaysia is a regional powerhouse with 20.95% of the world research, with contributions from institutions such as Universiti Sains Malaysia (USM) and Universiti Malaysia Terengganu (UMT). This is an indicator of strategic maritime geography of Malaysia and its intentions to develop tourism along the coastlines. Academically, the research on maritime tourism has passed through the descriptive research to multidisciplinary research and much emphasis is given on sustainability, resilience and innovation. Nevertheless, major loopholes still persist in dealing with the logistics efficiency, safety of vessels, and digital revolution in the passenger mobility systems, and interdisciplinary interventions in maritime engineering, transport planning, economics, and social sciences are needed. Policy wise, it is important to align the maritime tourism strategies with the Blue Economy Roadmap and Sustainable Development Goals of Malaysia, especially SDG 8 (Decent Work and Economic Growth), SDG 13 (Climate Action), and SDG 14 (Life Below Water). To minimize emissions and destination accessibility, policymakers ought to advance the green operation of ports, environmentally friendly ferries, inter-island transportation integration, and others. Enhancing research industry relations will make Malaysia a leader in sustainable maritime tourism. Conclusively, the maritime tourism study in Malaysia has come to a critical stage. The future studies are to be concerned with digital maritime logistics, carbon-neutral mobility, and climate resilience frameworks to secure the sustainable growth. Moreover, technological issues, including the implementation of intelligent transport systems and energy-saving technologies, will become instrumental in ensuring that the negative environmental effects are limited and environmental and climate friendliness in the world tourism system are promoted by the industry.

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