

Ecotourism in the Arab World: A Bibliometric Analysis of Trends, Gaps, and Research Prospects

Boussadia zahia ¹ ♦, Rindawati Maulina ², Ziane Berroudja Ali ³, Ahmed Salmi ⁴

¹ Tissemsilt university,(Algeria), boussaadia.zahia@univ-tissemsilt.dz

 ORCID: <https://orcid.org/0009-0007-4947-8098>

² The central bank of Indonesia, (Indonesia), rinda_maulina@bi.go.id

 ORCID: <https://orcid.org/0000-0003-4897-9935>

³ Tissemsilt university, (Algeria), ziane.berroudja@univ-tissemsilt.dz

 ORCID: <https://orcid.org/0009-0004-8105-551X>

⁴ Alger 3 university, (Algeria), ahmedsalmi94@gmail.com

 ORCID: <https://orcid.org/0009-0009-8636-2144>

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Abstract:

This paper analyzes the current state and research trends of ecotourism in the Arab world. Using a descriptive analytical method and bibliographic documentation, it aims to bridge existing literature gaps by reviewing relevant studies with a specific contextual focus on the region. To achieve this, we conducted a bibliometric review of ecotourism research in the Arab world published between 2000 and 2024. Data was systematically searched from Scopus, identifying, screening, and analyzing relevant literature using quantitative tools like VOSviewer software. After careful selection, 558 documents in English, French, and Arabic were included for analysis.

The findings offer valuable insights into future research opportunities in ecotourism, particularly within the Arab world. The study also highlights pioneering contributions, prominent authors, central themes, and emerging research challenges in the field.

Keywords: Ecotourism; Bibliometric analysis; Co-occurrence analysis; Co-citation analysis; Arab world; VOSviewer

♦ Corresponding author.



I- Introduction: (Times New Roman, size 12)

The Arab world is composed of many countries (Reisinger & Moufakkir, 2015). Spanning over 14 million square kilometers, with approximately 72% in Africa and the remainder in Asia, this region boasts a strategic location bordering the Mediterranean Sea, the Red Sea, and the Arabian Gulf (Mustafa & Al-Hajj, 1995). This vast region holds undiscovered tourism treasures, reflecting unparalleled natural and cultural richness. Its diverse landscapes, from expansive deserts and rugged mountains to breathtaking beaches (Islam, 2024), Beyond its rich environmental diversity and natural allure, the Arab world is characterized by its welcoming communities, distinct traditions, and affordability compared to other global destinations. It also provides rare opportunities, such as observing endangered wildlife or camping in protected reserves. Therefore, this diversity represents a valuable opportunity to develop ecotourism as a sustainable form of tourism that preserves natural resources and enhances the local economy.

With increasing interest in sustainability, nature conservation, and tourism growth both domestic and international in Arab countries, the term “ecotourism” has emerged. Consequently, it became a distinct form of tourism in the 1980s (Yang et al., 2025). According to Cambridge University Press & Assessment (2025), Ecotourism is defined as 'holidays and travel that involve causing less damage to the environment than usual and that make people aware of the need to protect the environment.' More specifically, it refers to 'the business of organizing holidays to places of natural beauty in a way that helps local people and does not damage the environment.'

The temporal dimension adds further depth to this investigation. The period from 2000 to 2024 represents a transformative era for ecotourism in the Arab world, marked by rising environmental awareness, policy reforms, and evolving tourism practices. Numerous nations within the region have worked to enhance their tourism development and redesign their strategies to better leverage their natural resources, biological diversity, and cultural heritage (Mohamed Ghali & Hassan Ebadjouri, 2021). Notably, The United Arab Emirates ranks first in the Arab Tourism Sustainability Index released in 2015 by the Arab Tourism Organization, followed by Qatar and Tunisia (Boukhari & Ayachi, 2017). Yet, despite these advances, environmental protection continues to face considerable obstacles, prompting Belmiliani and Maydoun (2009) to call for a unified regional initiative and increased support for purposeful scientific research. Without such coordinated efforts, knowledge risks remaining static accumulated but underutilized rather than serving as a driver of innovation and change (Lim et al., 2024).

Driven by the growing interest in ecotourism, this study addresses a notable gap in the current body of knowledge: the absence of dedicated reviews focusing on ecotourism within the Arab region. Although research on ecotourism has expanded considerably over recent decades, no bibliometric analysis to date has specifically examined this geographical context. Therefore, the present research aims to provide a comprehensive examination of scholarly developments that implicitly or explicitly engage with the concept of ecotourism across Arab countries. To achieve this, we employ bibliometric analysis a method

increasingly recognized in business research for its effectiveness in managing large scientific datasets and producing high-impact insights (Donthu et al., 2024).

Our study provides an updated quantitative developments overview of scientific research on ecotourism within the Arab region. conducting a comprehensive quantitative analysis, and mapping collaboration networks among authors, institutions, and countries. This research contributes significantly to the theoretical development of ecotourism in the region by building on previous reviews and systematically charting past research progress and emerging patterns to better inform future directions. The analysis is anchored in a rigorous bibliometric methodology and structured around three guiding research questions:

RQ1 -What are the key bibliometric characteristics of ecotourism research in the Arab region, including influential authors, journals, institutions, countries, citation patterns, and emerging thematic clusters?

RQ2 -Which subject areas have been most explored in ecotourism literature across the Arab region, and how productive and collaborative are Arab countries in this field?

RQ3 -What gaps, future research opportunities, and strategic directions can be identified to advance ecotourism scholarship in the Arab region?

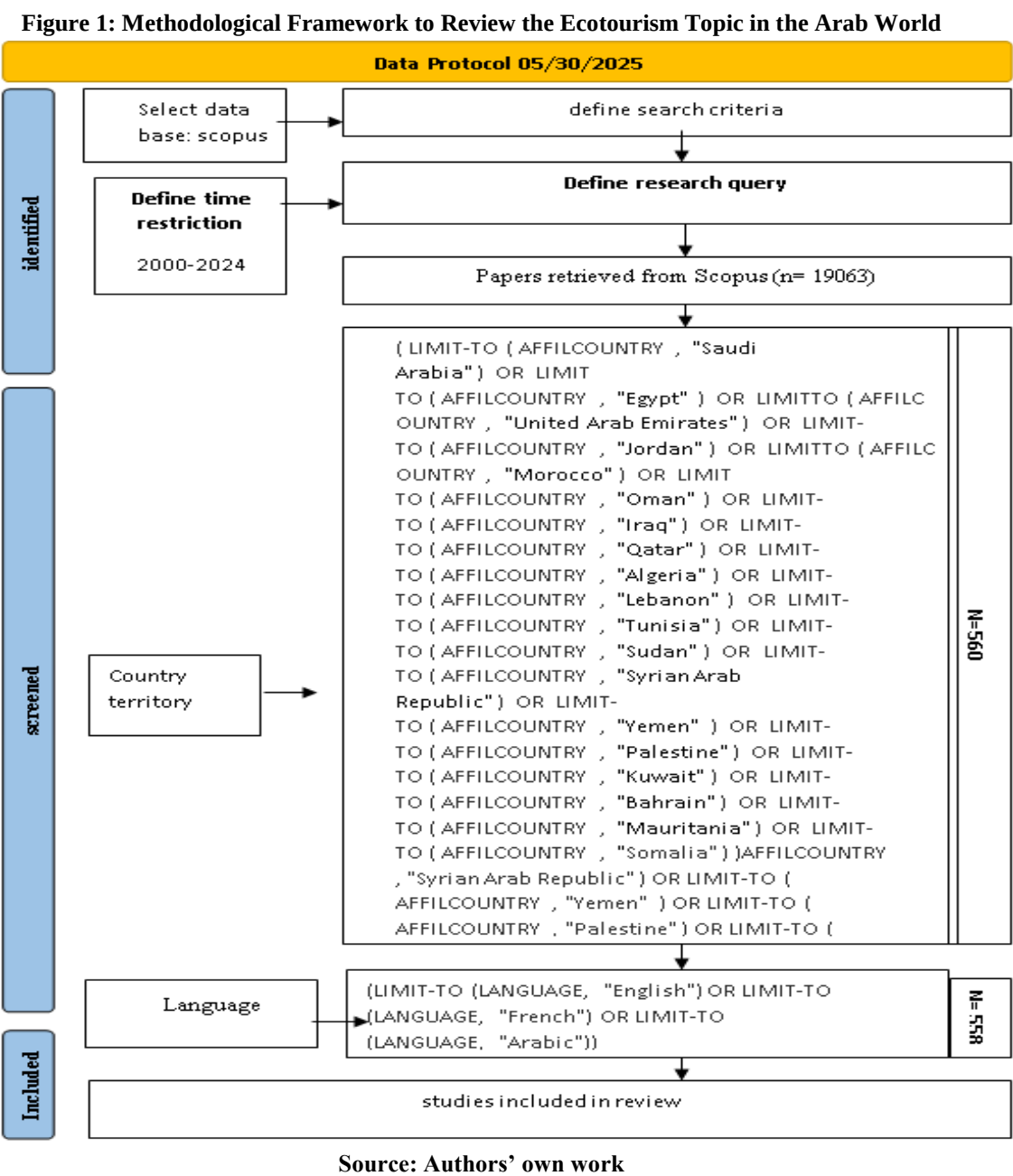
The results of this research will practically contribute to formulating sustainable environmental tourism policies in Arab countries, by identifying gaps and directing investments towards natural resources, thereby enhancing local social and economic development and protecting environmental heritage. This paper also offers a three-part contribution. First, it analyses the recent academic literature on the progress of ecotourism research in Arab countries. Second, it addresses future directions for ecotourism research. Third, from a methodological standpoint, this article employs a more integrated and systematic bibliometric review of the literature. According to (Nordin & Jamal, 2020), this bibliometric methodology is particularly effective for presenting leading research trends in terms of publications, authors, affiliations, and citations in journals or proceedings, while also suggesting future research opportunities.

1. Research Methodology

This study employed bibliometric analysis, a popular approach for analyzing large volumes of data to track and draw insights from a field or discipline's development (Dube, 2024). In recent years, bibliometric analysis has become a more commonly used method across several disciplines, including tourism and hospitality (Rehman et al., 2022). More importantly, the popularity of bibliometric analysis in business research is not a fad but rather a reflection of its utility for handling large volumes of scientific data, and producing high research impact (Donthu et al., 2024) In this study, we consulted the scopus database, which is compatible with other bibliometric analysis tools like VOSviewer (Dube, 2024).

Adopting Maulina et al. (2023), this research applied the PRISMA framework through three main steps. The identification phase involved retrieving relevant articles using "ecotourism" and "sustainable tourism" As keywords. Given limited ecotourism coverage in the Arab world, we began our search from 2002, when the Scopus database became active, and continued through 2024 (as 2025 is not yet complete). The second step, the screening phase, narrowed the scope to ultimately include articles specifically focusing

on Arab countries and published in Arabic, English, or French. This process identified 558 academic studies for analysis in the next phase (Figure 1). VOSviewer was then used to conduct a powerful bibliometric analysis of these papers, visualizing research trends to propose future directions, though its reliance on Scopus data limits the study.



Although ecotourism is just one element of sustainable tourism-defined by Rariel (2024) as "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities,"-research on ecotourism in the Arab world has been very scarce on the Scopus database. This scarcity led us to include "sustainable tourism" as a keyword in our study.

1. Bibliographic data were then exported in RIS format to Zotero, a free and open-source reference management software. Zotero allows researchers to collect,

organize, and manage academic sources, supporting metadata import from databases and export in various formats for other tools. After organizing the data in Zotero, it was re-exported in a compatible format for VOSviewer (version 1.6.20). This software tool is designed to construct and visualize bibliometric networks, such as citation, co-authorship, and keyword co-occurrence, helping identify patterns and trends in scientific research. Adopting García Alcaraz et al., (2023) this study used a combination of graphs generated by VOSviewer software and others illustrated in Excel for clarity. After cleaning the database, the data were analyzed using VOSviewer v 1.6.20, focusing on the following steps: Identify the main authors, institutions, and countries researching ecotourism in the Arab world.

2. Recognize the primary keywords used by authors and editors in ecotourism documents concerning the Arab world.
3. Define the most cited documents, journals, authors, institutions, and countries
4. Analyze co-citations for references, sources, and authors.

2. Result and discussion:

The bibliometric analysis of 558 documents on ecotourism and sustainable tourism in the Arab world between 2000 and 2024 provides a comprehensive overview of how this research field has evolved over time, who is driving it, and which themes and contexts have received most attention. Overall, the findings reveal a growing yet still uneven and relatively immature body of literature that is geographically concentrated and thematically fragmented. This section discusses the main results in light of the research questions and the broader tourism and sustainability debate.

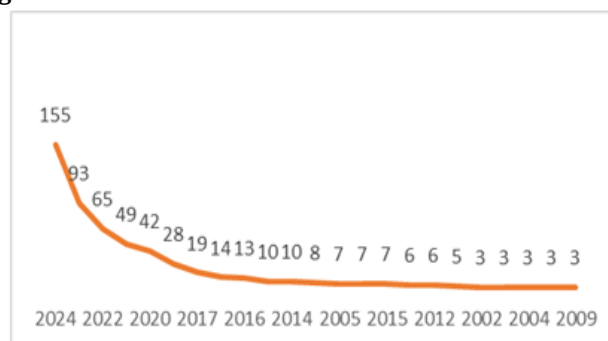
2.1 Number of Publications and Distribution Per Year (trends):

The annual distribution of scientific publications is crucial for scholars to monitor the progression and advancement of scientific knowledge throughout time (Rahmat et al., 2024). As Figure 2 illustrates, scientific publications on ecotourism in the Arab world have shown a significant upward trajectory, particularly in recent years. A noticeable increase began to from 2016 onward, becoming especially pronounced from 2020. This culminated in a sharp surge in 2024, which recorded 155 publications-a record high that nearly doubles the previous year. This rapid growth suggests that ecotourism in the Arab World is a relatively new and emerging field of study, having only gained prominence in the early 2000s.

This acceleration can be interpreted as the result of several converging dynamics. First, many Arab countries have incorporated sustainability into their national tourism strategies and long-term development visions, which has stimulated interest in ecotourism as a policy and research priority. Second, the global push toward environmentally responsible tourism and the growing attention to climate change and biodiversity loss have contributed to placing ecotourism higher on the academic agenda. Finally, the post-COVID-19 context has revived debates on resilience, diversification, and sustainable recovery in tourism, encouraging researchers and policymakers in the Arab world to reconsider nature-based tourism as both an economic opportunity and an environmental responsibility.

At the same time, the relatively small total number of documents over almost a quarter of a century suggests that, despite recent progress, ecotourism research in the Arab world is still underdeveloped compared with the size of the region, its environmental richness, and its tourism potential. This confirms the existence of a significant knowledge gap and underlines the need for more systematic and long-term research programmes.

Figure 2: Research Trends of Ecotourism in the Arab world



Source: Authors' own work based on the Scopus database

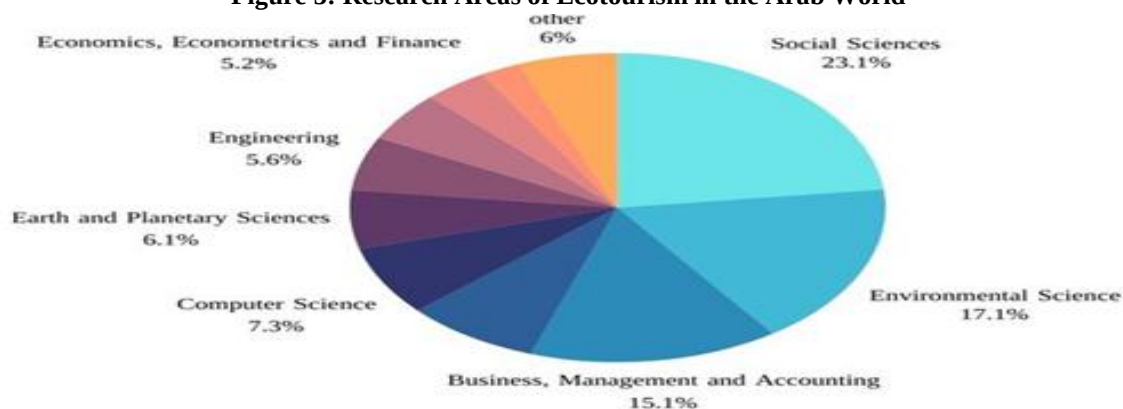
2.2 The emerging literature clusters eco-tourism research in the Arab world

Subject area category:

Approximately 23.1% of the documents are majority about Social Science category, indicating a strong scholarly focus on the societal, behavioral, cultural and dimensions of ecotourism. Furthermore, around 17.1% are about Environmental Science, concentrating on topics like natural resource management, biodiversity conservation, and climate change. As many as 15.1% of the documents are computer science category. Other contributing disciplines, such as Earth and Planetary Sciences, Engineering, economics, econometrics and finance, indicate an emerging interest in leveraging technology, geospatial analysis, and infrastructure planning to support ecotourism practices (Figure 3).

While this multidisciplinary approach addresses social and conservation dimensions, the limited representation of technical fields reveals a significant gap: digital technologies, GIS, and smart solutions remain underutilized in Arab ecotourism research and practice.

Figure 3: Research Areas of Ecotourism in the Arab World

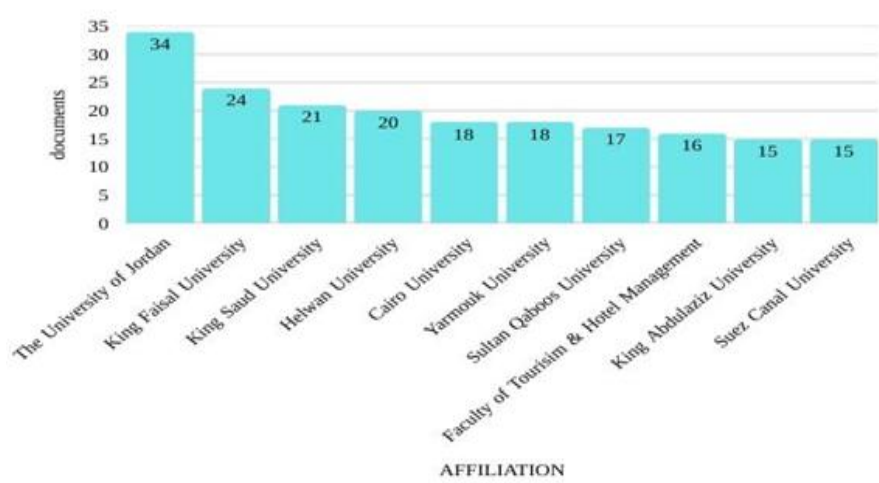


Source: Authors' own work based on the Scopus database

2.3 Top 10 affiliation category:

Figure 4 shows the top 10 affiliations according to the number of publications on ecotourism in Arabic countries. The universities affiliated with the authors have benefited from this research work. The University of Jordan leads the list with 34 documents. The University of Jordan places special emphasis on environmental studies within the field of tourism, given Jordan's rich and diverse ecological landscape, which includes notable sites such as Wadi Rum, Aqaba Gulf, Petra, and the Dead Sea. It is followed by king Faisal University with 24 documents, it participates in numerous research projects related to environmental resource management and sustainable tourism in Saudi Arabia. King Saud University (21) documents, has also focused on activating the role of community partnership by adopting several research chairs dedicated to environmental interests to support studies that contribute to the conservation and stewardship of the local environment (*King Saud University and Community Service - Environment | Office of Community Relations*, 2023). Helwan university (20) documents, It is one of the leading Egyptian universities in the field of tourism and hotel management overall, with a focus on supporting eco-tourism in Fayoum and Siwa. The university also offers specializations in sustainable tourism and environmental planning. Furthermore, an Environmental Protection Unit was established within the college in 2011. Following this, Cairo University in Egypt and Al-Yarmouk University in Jordan each have 18 relevant files. Sultan Qaboos University, with 17 files, is a key supporter of the ministry, particularly in scientific research related to tourism and hospitality (Khalsa bint Ahmed Al-Amriya, n.d.). Notably, Oman ranked first globally in ecotourism in 2010 (Sultan Qaboos University, 2021). Helwan University's Faculty of Tourism and Hotel Management has 16 documents, specifically focusing on ecotourism. Lastly, King Abdulaziz University in Saudi Arabia and Suez University in Egypt each contribute 15 documents. Overall, universities in Saudi Arabia, Egypt, and Jordan are observed to be leading academic institutions in the Arab world, significantly advancing the field of ecotourism (Figure 4).

Figure 4: Number of Articles Published by Institutions

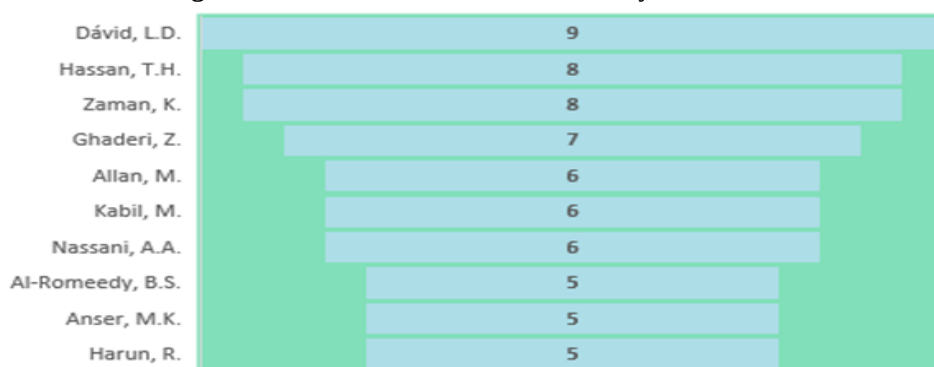


Source: Authors’ own work based on the Scopus database

2.4 Authors category:

A total of 158 authors have published on ecotourism in the Arab world. The top ten authors are presented below in Figure 5. Dávid, L.D. from the Doctoral School of Economic and Regional Science, Hungarian University of Agriculture and Life Sciences (MATE), leads this research area with 9 documents and 322 citations. T.H. Hassan from King Faisal University, Department of Social Studies, College of Arts, Al Ahsa, Saudi Arabia, and K. Zaman from the Department of Economics, University of Wah, Pakistan, each have 8 papers with 72 and 325 citations, respectively. Other significant contributors include Z. Ghaderi from the Department of Tourism, College of Arts and Social Science, Sultan Qaboos University, Oman, who has 7 documents and 92 citations. Following them are researchers with 6 papers each: M. Allan (21 citations) from the Department of Tourism Management, Faculty of Archaeology and Tourism, The University of Jordan, Amman, Jordan; M. Kabil (208 citations) from the Faculty of Urban and Regional Planning, Cairo University, Egypt; and A.A. Nassani (299 citations).

Figure 5: Number of Articles Published by Institutions



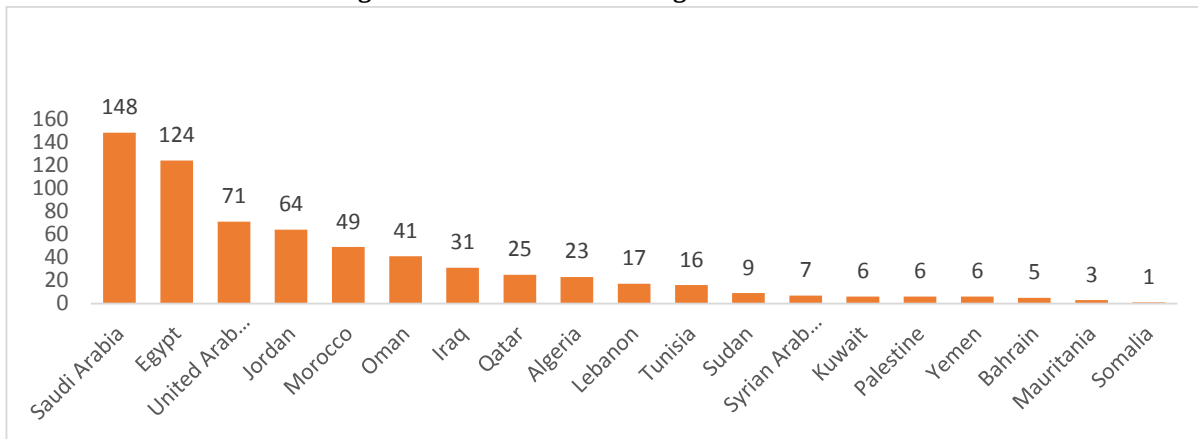
Source: Authors' own work based on the Scopus database

2.5 Country Category:

Although the advanced search in the Scopus database was configured to include only Arab countries through the affiliation country filter, some records associated with non-Arab countries still appeared in the results. This can be attributed to several factors, including authors having multiple institutional affiliations (both Arab and foreign), or the presence of international collaborative research involving researchers from both Arab and non-Arab institutions. Additionally, Scopus records all listed affiliations without distinguishing between primary and secondary ones, which may lead to the inclusion of studies not strictly affiliated with the target countries. Therefore, these entries were manually removed during the data cleaning phase using Excel, to ensure that only Arab countries were retained for accurate ranking and analysis.

The Kingdom of Saudi Arabia (KSA) dominates the number of studies on ecotourism conducted over the period in question, followed by Egypt, United Arab Emirates, Jordan, Morocco, Oman, Iraq, Qatar, Algeria, Lebanon, Tunisia, Sudan, Syrian Arab Republic, Kuwait, Palestine, Yemen, Bahrain, Mauritania and Somalia figure 6, with Figure 7 shows the relationships between the countries, which have been integrated into 5 clusters as seen in Table 1.

Figure 6: Countries Publishing on Ecotourism



Source: Authors' own work based on the Scopus database

Table 1: Clustering by Country Category Publishing on Ecotourism

Cluster1	Cluster2	Cluster3	Cluster4	Cluster5
Jordan	Algeria	UAE	KSA	Qatar
Iraq	Tunisia	Oman	Egypt	Lebanon
Palestine	Sudan	Kuwait	Morocco	Syria
Yemen				
Bahrain				

Source: Authors' own work

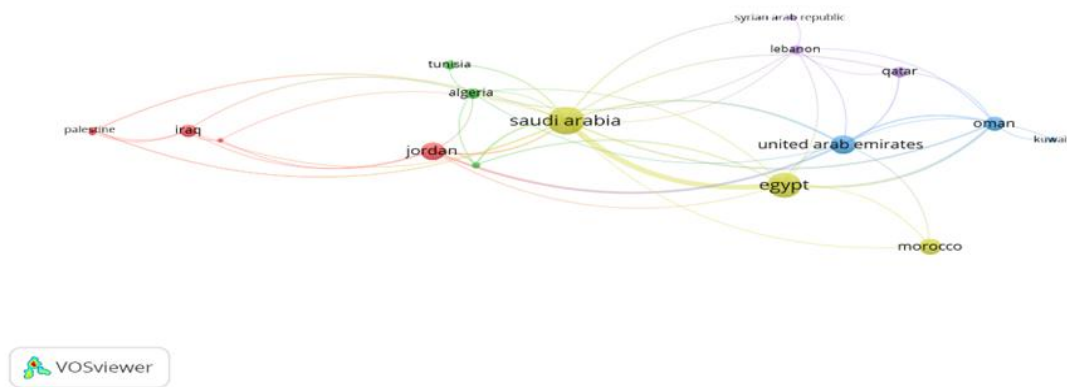
2.6 Citation countries category:

The classification of Arab countries into five clusters based on ecotourism research reveals notable disparities influenced by political, economic, and policy factors.

- **Cluster 1** (Jordan, Iraq, Palestine, Yemen, Bahrain): Shows limited research, likely due to instability and lack of supportive policies.
- **Cluster 2** (Algeria, Tunisia, Sudan): Exhibits moderate interest, hindered by economic constraints and lower prioritization.
- **Cluster 3** (UAE, Oman, Kuwait): Demonstrates growing focus driven by national sustainability visions.
- **Cluster 4** (Saudi Arabia, Egypt, Morocco): Leads in research activity owing to comprehensive tourism and environmental strategies.
- **Cluster 5** (Qatar, Lebanon, Syria): Has relatively limited research, affected by geopolitical issues and lower environmental diversity.

Saudi Arabia leads in publications, followed by Egypt and the UAE. A five-cluster pattern emerges, shaped by political stability, economic resources, and policy priorities. Many Arab countries with significant ecotourism potential remain under-researched, reflecting uneven regional capacity. These countries have made substantial efforts to position themselves as sustainable tourism destinations and to integrate environmental considerations into tourism planning. Their leadership in the research landscape is therefore coherent with their policy ambitions and investment capacities.

Figure 7: Semantic Network of Citation Countries

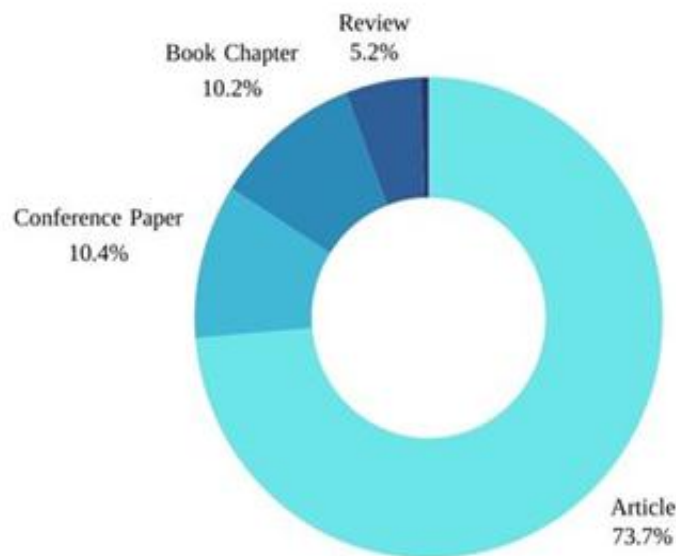


Source: Authors' own work based on the VOSviewer software

2.7 Type of publication category:

The distribution of the reviewed papers according to the type of publication is shown in Figure 8. Articles are the most common type of publication on ecotourism (73.7%), followed by conference papers (10.4%) and book chapters (10.2%) papers. Lastly reviews (5.2%).

Figure 8: Type of Publication



Source: Authors' own work based on the Scopus database

2.8 Source title category:

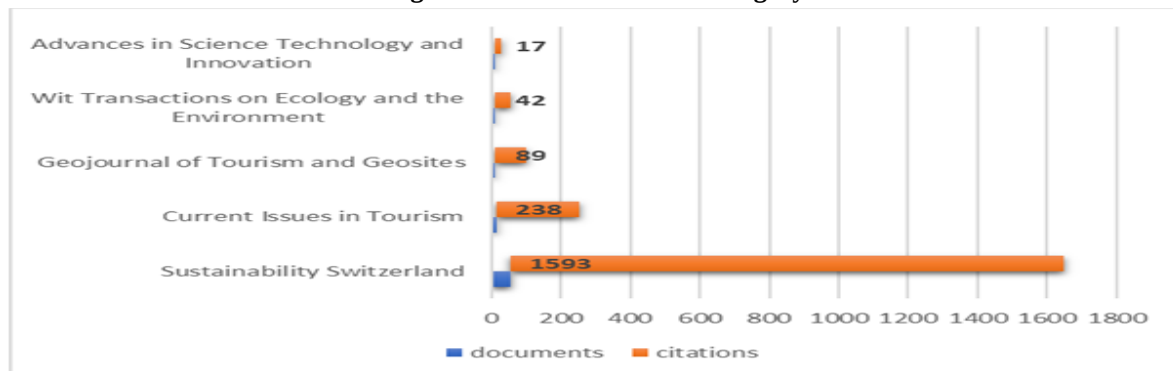
The top five journals, along with their citation scores, in terms of the number of reviewed studies published are listed in Table 2. These top three journals are the Journal of Sustainability Switzerland (60 publications), Geojournal Of Tourism and Geosites (15 publications), and Current Issues in Tourism (14 publications). As shown in Figure 9, the top five journals and the number of citations received by the articles published in each journal are displayed.

Table 2: Top 5 Journals in the field from a Sample of 558 Articles

Journal Name	N	Cite score	Publisher
Journal of Sustainability Switzerland	60	7.7	Multidisciplinary Digital Publishing Institute (MDPI)
Geojournal Of Tourism and Geosites	15	3.7	Editura Universitatii din Oradea
Current Issues in Tourism	14	15.5	Taylor & Francis
Advances in Science Technology and Innovation	12	0.6	Springer Nature
Ecology and The Environment	12	1.0	WIT Press

Source: Authors' own work

Figure 9:Source of Journal Category

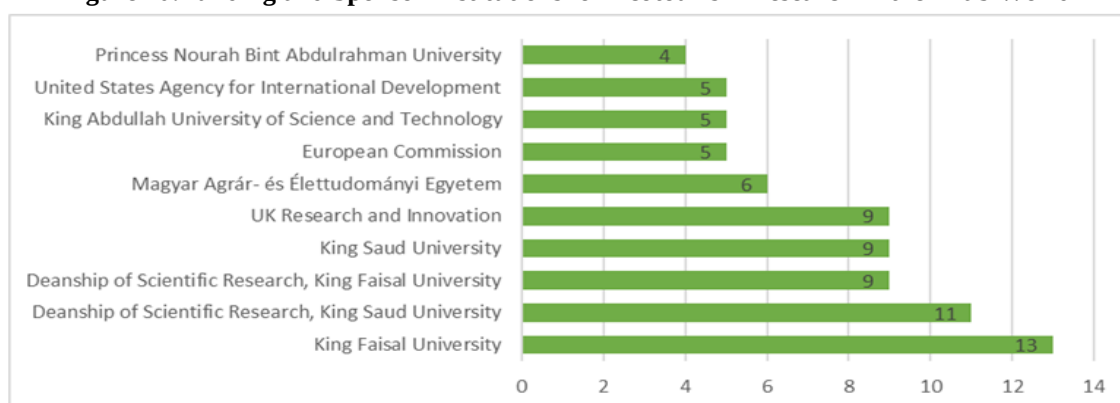


Source: Authors' own work based on the Scopus database

2.9 Sponsor category:

The design and application of ecotourism in Arabic world have been of interest to many organizations that have funded many research projects and, as a result, are recognized through publications, Figure 10 illustrates the main institutions that have funded this research topic, with the king Faisal University and deanship of scientific research, King Saud University leading the way.

Figure 10:Funding and Sponsor Institutions for Ecotourism Research in the Arab World



Source: Authors' own work based on the Scopus database

2.10 Analysis of References

2.1.10 Main Keywords: (co-occurrence all keywords:

Keyword co-occurrence is the analysis of how frequently specific keywords or terms appear together within academic publications. This method helps to map knowledge, identify research trends, and analyze the content by quantifying the pairing of keywords

Co-citation analysis is a bibliometric technique that examines and measures the relationships between two documents based on how often they are cited together by a third publication. This indicates that the two works have a conceptual connection or are frequently referenced together for further investigation. Additionally, co-citation analysis offers valuable insights into the intellectual framework of a specific field, the impact of particular works or authors, and emerging research trends or themes (Miah et al., 2024). Of the 558 papers identified in this analysis, only 108 have at least one citation, and 446 have not yet been cited, which may be because they have only recently been published (2024). Table 3 illustrates the top 10 most cited papers.

Table 3: Top 10 Relevant Authors Ordered by the Number of Publications and Total Citations.

Authors	Document	Citations
Brown A.C. (Brown & McLachlan, 2002)	Sandy shore ecosystems and the threats facing them: Some predictions for the year 2025	343
Sobaih A.E.E. (Sobaih et al., 2021)	Responses to COVID-19: The role of performance in the relationship between small hospitality enterprises' resilience and sustainable tourism development	247
Muresan I.C. (Muresan et al., 2016)	Local residents' attitude toward sustainable rural tourism development	215
Sharif A. (Sharif et al., 2020)	The role of tourism, transportation and globalization in testing environmental Kuznets curve in Malaysia: new insights from quantile ARDL approach	156
Abdou A.H. (Abdou et al., 2020)	A description of green hotel practices and their role in achieving sustainable development	141
Masud M.M. (Masud et al., 2017)	Community-based ecotourism management for sustainable development of marine protected areas in Malaysia	131
Nilashi M. (Nilashi et al., 2019)	Preference learning for eco-friendly hotels recommendation: A multi-criteria collaborative filtering approach	115
Maréchal L. (Maréchal et al., 2011)	Impacts of tourism on anxiety and physiological stress levels in wild male Barbary macaques	115
Abou-Shouk M.A. (Abou-Shouk et al., 2021)	Women's empowerment and tourism development: A cross-country study	107
Aman J. (Aman et al., 2019)	The influence of islamic religiosity on the perceived socio-cultural impact of sustainable tourism development in pakistan: A structural equation modeling approach	109

Source: Authors' own work

Overall, the table reflects a multidisciplinary and international research scope, combining environmental science, social science, technology, and business management. It indicates that ecotourism research is diverse and incorporates both theoretical and applied perspectives essential for advancing sustainability in tourism contexts.

2.3.10 Most-cited countries category:

Of the 22 countries in the Arab world, 17 were identified as having at least one document related to ecotourism. Saudi Arabia (KSA) and Egypt lead the list, with 2861 and 2202

documents respectively. Each of their papers averages 19.33 and 17.75 citations, respectively. These countries have truly been pioneers in ecotourism research (Table 4).

Table 4 :Most-Cited Countries for Ecotourism Research in the Arab

N	Country	Document	Citation
1	KSA	148	2861
2	EGYPT	124	2202
3	UAE	72	1118
4	Jordan	64	655
5	Morocco	49	812
6	Oman	42	962
7	Iraq	31	415
8	Qatar	25	486
9	Algeria	23	141
10	Lebanon	17	134
11	Tunisie	16	207
12	Soudan	09	71
13	syria	07	72
14	Kuwait	06	158
15	Yémen	06	23
16	Palestine	06	26
17	Bahreïn	5	12

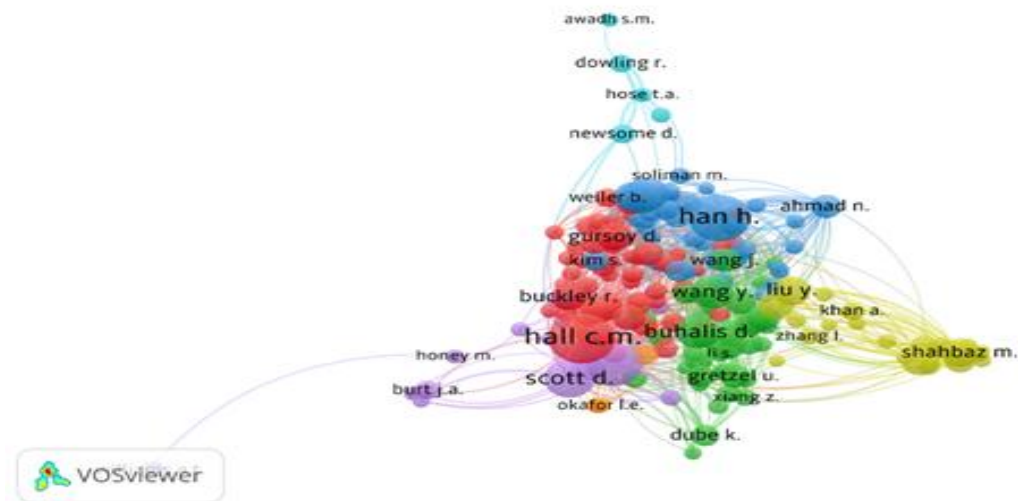
Source: Authors' own work

2.4.10 Co-citation Category:

Co-citation network analysis identifies how frequently two articles are cited together in other works. In these networks, nodes represent the papers, while links indicate citation relationships. The colors typically correspond to clusters of closely related documents. This type of analysis reveals the structure of research directions, shared ideas among authors, and key research leaders. It's used because it effectively helps understand which authors are frequently cited together, whether they build on each other's ideas, or engage in scholarly debate (Trabskaia et al., 2023).

In our study, out of 47,063 cited authors, 190 met the threshold of 20 minimum citations of cited references. The co-citation network on ecotourism is presented in Figure 13. The analysis revealed seven clusters of author citations, with each cluster representing a group of authors working in the same research field.

Figure 13:Co-citation Network Analysis



Source: Authors' own work based on the VOSviewer software

Conclusion

This study set out to provide a comprehensive bibliometric analysis of ecotourism research in the Arab world between 2000 and 2024. By examining 558 documents indexed in Scopus, it mapped the evolution of publication trends, the main subject areas, the most productive authors, institutions and countries, as well as the central themes and intellectual structure of the field. The findings offer an integrated overview of how ecotourism has been conceptualised and studied in the Arab context and highlight both achievements and persistent gaps.

First, the results show a clear upward trajectory in research output, particularly since 2016 and with a marked surge in 2024. This confirms that ecotourism and sustainable tourism have moved from the periphery to a more central position in the academic and policy debate in several Arab countries. However, when considering the long study period, the total number of publications remains modest. This suggests that ecotourism, despite its relevance for sustainable development, biodiversity conservation and rural livelihoods, is still an emerging and not yet fully consolidated research domain in the region.

Second, the analysis demonstrates that ecotourism research in the Arab world is geographically concentrated. Saudi Arabia, Egypt, the United Arab Emirates, Jordan, and a small group of other countries dominate publication output, while many Arab states contribute few or no studies. These disparities mirror broader differences in political stability, economic capacity, research infrastructure, and policy priorities. They also mean that the academic literature does not fully reflect the environmental and cultural diversity of the Arab world, leaving many potentially important ecotourism destinations under-represented.

Third, the findings indicate that a limited number of institutions and authors act as key hubs in the research network, and that some of the most influential contributors are based outside the Arab world. International collaborations have clearly enriched the field and facilitated the transfer of methodological and theoretical approaches. At the same time, the reliance on external expertise underscores the importance of further building local research capacities

and encouraging Arab scholars and institutions to take a more prominent role in defining research questions and shaping the regional ecotourism agenda.

Fourth, the thematic and keyword analyses reveal that the literature has so far focused primarily on broad issues such as sustainable development, environmental protection, tourism development, and destination management. While these are essential foundations, several critical aspects remain insufficiently explored. There is limited research on environmentally responsible tourist behaviour, on the role and empowerment of local communities, on economic valuation and cost benefit analyses of ecotourism projects, and on the integration of digital technologies and smart tools into ecotourism planning and management. The relatively low citation rates of many publications further suggest that the field is still in a formative stage and has not yet generated a large body of widely shared reference works.

Taken together, these findings have important implications for both research and policy. From a scientific perspective, they point to the need for more systematic, theory-driven and methodologically robust studies that go beyond descriptive case analyses. Future research should give greater attention to:

- ✓ the lived experiences, perceptions and behaviours of tourists and local communities in ecotourism settings;
- ✓ the design, governance and long-term impacts of specific ecotourism initiatives and protected areas;
- ✓ the economic contributions and trade-offs of ecotourism in national and local development strategies;
- ✓ the use of digital and smart technologies, including GIS, mobile applications and data analytics, to plan, monitor and communicate ecotourism products; and
- ✓ comparative and longitudinal studies that track changes over time and across different Arab countries and ecosystems.

From a policy and practice perspective, the results emphasise the importance of integrating research more closely into tourism and environmental decision-making. Policymakers in the Arab world can use bibliometric evidence to identify leading institutions and potential partners, benchmark their countries against regional peers, and detect neglected topics and destinations that require targeted support. Stronger regional cooperation, for instance through joint research projects, data-sharing platforms, or an Arab observatory for ecotourism, could help to reduce current imbalances and accelerate the development of a more coherent and impactful knowledge base.

In conclusion, the Arab world possesses exceptional natural and cultural assets that offer significant opportunities for ecotourism development. The present bibliometric analysis shows that the academic community has begun to recognise this potential, but also that much work remains to be done to build a mature, context-sensitive and policy-relevant body of research. By addressing the identified gaps and fostering closer collaboration between researchers, practitioners and policymakers, ecotourism can become not only a vehicle for sustainable tourism growth, but also a catalyst for environmental stewardship, community empowerment and inclusive development across the region.

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