

# Global Research on Ecotourism Policy: A Novel Bibliometric Analysis of Trends and Research Gaps

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**Abstract.** Ecotourism policy faces challenges in balancing tourism growth with environmental conservation, making it essential to understand existing research trends and gaps. This research aims to map the trend characteristics of global literature related to ecotourism policy. By employing bibliometric analysis methods and data visualization using the VOSviewer tool, this study provides comprehensive insights into trends, research foci, and the interactions among concepts within ecotourism policy literature. These insights open avenues for identifying research gaps and guiding future studies in this field. Data extracted from selected databases indicate a growing research interest in ecotourism policy, underscored by a multidisciplinary approach. The study also highlights frequently cited contributions that have significantly influenced academic literature on the subject. Additionally, global collaboration in this domain is evident, with notable contributions from countries such as Indonesia, the United States, China, and Australia. Despite the progress, substantial research gaps remain, particularly concerning environmental management, economic development, and climate change, underscoring the necessity for further investigation to bridge these gaps. Future research should aim to provide more targeted policy strategies and practical measures for sustainable ecotourism development, ensuring a balance between tourism growth and environmental conservation.

## 1 Introduction

Ecotourism is a travel approach that changes the paradigm, where exploration is harmoniously aligned with environmental conservation and community empowerment. It reflects a philosophy encouraging tourists to immerse themselves in the natural landscape and cultural heritage while promoting respect and responsibility for the ecosystem and local people [1, 2]. In contrast to conventional tourism which often exploits resources and disrupts fragile environments, ecotourism emphasizes sustainable practices, minimal environmental impact, and meaningful engagement with local culture [3,4]. Through ecotourism, individuals not only embark on enriching journeys but also contribute to the conservation of

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biodiversity, the protection of endangered species, and the socio-economic well-being of host communities [5-7]. Meanwhile, through education, awareness and conscious decision-making, ecotourism catalyzes positive change, cultivating a deeper connection between people and nature while paving the way to a more sustainable future [8, 9].

Tourists can experience the beauty of nature directly in ecotourism programs while gaining a deeper understanding of the need for environmental protection [8, 10, 11]. Continuing to maintain awareness of the importance of conserving nature, ecotourism also encourages awareness about climate change, loss of biodiversity and other environmental problems that hinder planetary sustainability [12, 13]. Apart from that, ecotourism is also an important means of expanding economic opportunities for local communities, providing employment opportunities, and improving infrastructure and public services in tourist areas [12, 13]. Integrating the values of conservation, education and sustainable economic development, ecotourism has great potential to bridge the gap between development and environmental conservation, creating a balanced environment between humans and nature [14, 15].

On the other hand, the need for policies that support ecotourism is very important in promoting efforts to preserve the environment and develop sustainable tourism. These policies may include regulations that limit access to sensitive areas, regulate visitor numbers, and direct the use of tourism funds for conservation and local community development. [16, 17]. In addition, policies can also set standards for tourism operators to ensure that their activities comply with sound ecological and social principles. With strong policies, the government can provide direction and support to the tourism industry to move towards more sustainable practices. This also helps reduce conflicts between environmental interests, the needs of local communities, and the tourism industry [18, 19]. Through synergy between progressive policies and responsible ecotourism practices, we can achieve a good balance between nature conservation and economic development, while ensuring environmental sustainability for future generations.

Some common policies implemented to support ecotourism practices involve the establishment and enforcement of strict environmental regulations [18]. For example, establishing conservation areas with restrictions on access and certain tourist activities to protect fragile ecosystems [20, 21]. In addition, the allocation of tourism funds to conservation and local community development projects is often mandatory, ensuring that the economic benefits of tourism are also channeled back to local communities [22]. Some countries also set visitor quotas, ensuring that environmental and social burdens do not exceed the capacity of a given region [22, 23]. Additionally, the involvement of local communities in decision-making and their economic empowerment is often integrated into policies to ensure long-term sustainability [24-26]. Overall, these policies focus not only on nature protection but also on balanced social and economic development, making ecotourism an integrative instrument for conservation and sustainable development.

Despite the numerous studies on ecotourism, a critical gap in policy analysis, specifically focused on this issue, remains. The existing literature predominantly delves into the ecological and social impacts of ecotourism, underscoring the need for comprehensive studies on policy frameworks. This gap is not just a void in the literature, but a crucial area that demands immediate attention and rigorous research.

This research aims to fill this knowledge gap by systematically investigating the relationship between ecotourism practices and the policies that govern them. This report seeks to answer important questions about how policies can support or hinder the effectiveness of ecotourism initiatives. By analyzing the interconnections between policy frameworks and ecotourism practices, this study will provide deep insights into how regulations affect environmental management, community engagement, and long-term sustainability.

Moreover, this research makes a unique contribution to the field by employing bibliometric analysis to map global trends in ecotourism policy. This approach allows for a quantitative assessment of how various aspects of policy interact with critical issues such as economic development and adaptation to climate change. By elucidating these relationships, this study aims to provide actionable insights for policymakers, practitioners, and stakeholders to encourage the development of more effective and integrated policies that support sustainable ecotourism practices.

## **2 Method**

In this bibliometric analysis, data sources were drawn from the SCOPUS database to identify and analyze literature related to ecotourism policy. SCOPUS was chosen because it is one of the leading databases that encompasses scientific journals across various disciplines. The strengths of SCOPUS lie in the quality and quantity of the data provided, allowing researchers to access articles that have undergone peer review and have a significant impact in their fields. The search was focused on the keyword "ecotourism policy" without restrictions on publication year, document type, or author affiliation. As a result, 42 relevant documents were collected, covering various aspects of ecotourism policy from a global perspective.

This bibliometric analysis will reveal research trends, collaboration patterns among authors, citation networks, and the geographical distribution of existing studies. By understanding the structure and dynamics of related literature, this analysis will provide important insights into how ecotourism policy issues have been discussed in academic literature and identify research gaps that can be further explored for policy development and future research.

The data from the 42 collected documents will then be transferred to the VOSviewer tool to map research topics influencing discussions on ecotourism policy. VOSviewer was chosen for its ability to provide intuitive and interactive network visualizations, making it easier for researchers to understand the relationships between keywords, topics, and concepts that emerge in the literature. This tool enables in-depth visual analysis, helping to identify dominant research topic clusters and reveal critical patterns in the literature on ecotourism policy.

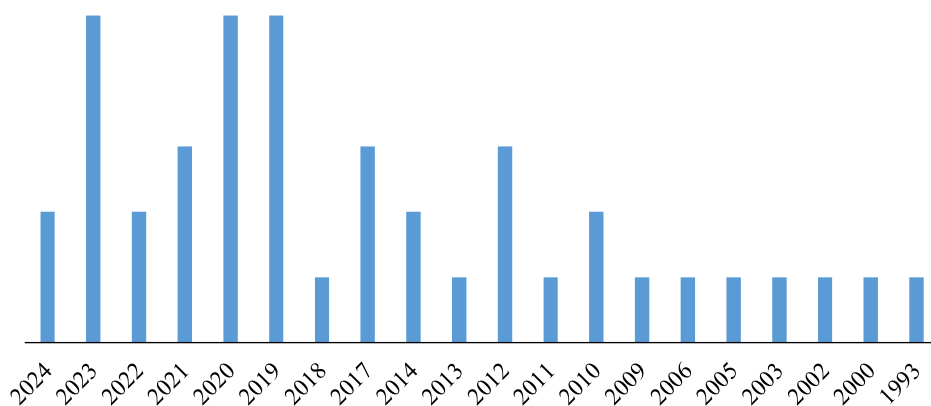
By mapping research areas, the analysis can identify clusters that may have yet to be thoroughly explored and guide the direction of future studies in this field. Data validation is a crucial step in the bibliometric analysis process, determining the reliability and validity of the information used in the research. In this context, data validation can be performed in several ways, such as re-verifying the analyzed documents, checking the consistency and accuracy of the keyword and research topic classifications generated by VOSviewer, and comparing findings with other relevant literature and studies. By conducting thorough data validation, researchers can ensure that the bibliometric analysis is based on accurate and trustworthy information, thereby strengthening the results and conclusions drawn from the study.

## **3 Findings and discussion**

### **3.1 Ecotourism policy: global research mapping**

Understanding the trends and characteristics of global literature is important in the realm of research on ecotourism policy. This section reviews the number of documents accumulated

per year, the dominant subject area, as well as the author's country affiliation to provide a comprehensive picture of the development of knowledge and interest of researchers around the world in this topic. By understanding these dynamics, this study identifies research trends, as well as tracks the different contributions of countries participating in discussions on ecotourism policy.



**Fig. 1.** Number of Documents on Ecotourism Policy Based on Year of Publication (Source: Scopus, 2024)

**Table 1.** Number of documents regarding ecotourism policy based on subject area

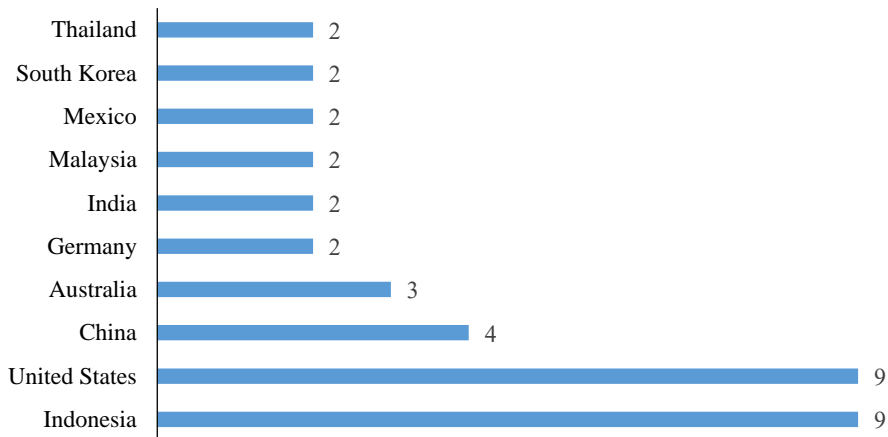
Subject area	Documents
Environmental Science	23
Social Sciences	20
Business, Management and Accounting	15
Economics, Econometrics and Finance	6
Earth and Planetary Sciences	5
Energy	4
Agricultural and Biological Sciences	3
Arts and Humanities	1

Source: Scopus, 2024

Figure 1 displays the number of documents on ecotourism policy by year of publication. The data shows variations in the number of documents from year to year. The trend shows an increase in research interest in this topic, with a peak occurring in 2023 with 5 documents, followed by 2020, 2019, and 2017 with 5, 5, and 3 documents respectively. Although there have been fluctuations in the number of documents from year to year, the overall trend shows that ecotourism policy has been gaining burgeoning attention in the academic literature, with a significant increase in publications over recent years. This finding reflects a growing

interest in understanding policy implications for ecotourism practices and environmental conservation efforts globally.

Table 1 presents the number of documents on ecotourism policy by subject area in the academic literature. The data shows that the subject area of Environmental Science dominates with 23 documents, indicating a strong focus on the environmental implications of ecotourism policy. Followed by Social Sciences with 20 documents, which reflect interest in social and cultural aspects of ecotourism policy. Furthermore, the subject area Business, Management and Accounting (Business, Management and Accounting) shows significance with 15 documents, highlighting the importance of managerial and economic aspects in the context of ecotourism policy. Although other subject areas such as Economics, Earth and Planetary Sciences, and Energy also recorded significant contributions, the data shows that ecotourism policy is widely debated and studied in a variety of disciplines, reflecting the complexity and relevance of this topic in a multidimensional context.



**Fig. 2.** Number of documents about ecotourism policy based on author's country affiliation (Source: Scopus, 2024)

Figure 2 depicts the number of documents on ecotourism policy by author's country affiliation. The data shows that Indonesia and the United States have equally strong contributions with 9 documents each, indicating the significant interest and involvement of both countries in ecotourism research and policy development. Furthermore, China, Australia, and several other countries such as Germany, India, Malaysia, Mexico, South Korea, and Thailand, also have quite diverse contributions, although on a smaller scale. This reflects a growing global interest in ecotourism policies and collaborative efforts involving countries in addressing challenges and opportunities in the context of sustainable tourism. These differences in countries' involvement may also reflect policy priorities and differences in research and development capacity in the field of ecotourism at the national level.

From mapping global research on ecotourism policy, it can be concluded that this topic is the subject of increasing attention in the academic literature. The increasing trend in the number of documents per year as well as the distribution of documents by subject area and author's country affiliation demonstrate the complexity and relevance of this topic in a multidimensional context. The implication is that a better understanding of ecotourism policies is needed to guide sustainable tourism practices and environmental conservation efforts. By developing appropriate policies, cross-country collaboration, and integrating

environmental, social, and economic aspects, more effective steps can be taken to maintain a balance between tourism development and environmental sustainability for future generations.

### 3.2 Ecotourism policy: document mapping contributes according to the number of citations

Analysis of the contribution of ecotourism policy documents based on the number of citations is an important effort to understand the impact and relevance of literature related to ecotourism policy in academic and practical contexts. By highlighting the most cited documents, this research aims to identify the most influential works in the ecotourism policy literature and trace their influence in the development of related thought and practice. Through this approach, this research not only provides insight into significant intellectual contributions but also describes the dynamics and flow of knowledge in the ecotourism policy domain in more depth.

**Table 2.** Number of documents about ecotourism policy that are frequently cited

Documents' Title	Year	Citation
Modernization theory, ecotourism policy, and sustainable development for poor countries of the global South: perspectives from Nepal	2017	40
Promoting ecotourism in the buffer zone areas of Nanda Devi Biosphere Reserve: An option to resolve people—policy conflict	2000	37
Why tour guiding is important for Ecotourism: Enhancing guiding quality with the Ecotourism promotion policy in Japan	2011	31
Ecotourism and Minimum Impact Policy	1993	24
The impact of ecotourism on ecosystem functioning along main rivers and tributaries: Implications for management and policy changes	2022	15

Source: Scopus, 2024

Table 2 displays the number of frequently cited documents on ecotourism policy, providing valuable insight into the works that have had a significant influence on the academic literature. This data allows researchers and policymakers to identify key sources of knowledge and thinking in the ecotourism policy domain as well as understand research trends that may influence the development of sustainable tourism policies and practices. By paying attention to the most frequently cited documents, we can identify the most influential contributions in shaping insight and policy in the field of ecotourism, which in turn can lead to more effective efforts in maintaining environmental and social sustainability in the tourism industry.

The first document highlights that ecotourism policies implemented with a modernization approach tend to fail in improving the socio-economic conditions of rural communities in Nepal and poor countries in the global South. Although popular as a strategy for sustainable development, ecotourism often does not meet expectations in improving the welfare of local communities. This research shows that this failure is largely caused by a modernization approach that leads to the development of ecotourism which is similar to conventional mass tourism. These findings emphasize the need to shift focus from ecotourism guided by economic principles towards participatory, community-based forms of sustainable development [17]. The implication is that ecotourism policies must pay more attention to local control and community participation in tourism management, thereby ensuring more equitable and sustainable economic, social, educational, and environmental benefits.

The second document highlights that the conflict between policies and local communities in the Nanda Devi Biosphere Reserve (NDBR) buffer zone area is mainly related to the prohibition of expeditions and tourism in the core zone. Conservation policies that tend to limit human access and activities have had serious impacts on local economies and created tensions between conservation authorities and local communities. Nevertheless, this research shows that the promotion of ecotourism in buffer zone areas has the potential to resolve this conflict by paying attention to environmental and local economic sustainability. Management strategies that lead to sustainable development and a balance between conservation and local economic development are important elements in formulating ecotourism policies in the area [27]. This underlines the need for a policy approach based on community participation and an emphasis on local economic benefits in supporting biodiversity conservation efforts.

The third document highlights the important role of tour guides in achieving policy and ecotourism goals in Japan. Although Japan's Ecotourism Promotion Policy requires the use of tour guides, it provides little justification for this. This research shows that tour guiding has a significant role in achieving policy and ecotourism goals by increasing tourists' understanding and experience of local ecosystems and culture. By providing training to tour guides through non-profit organizations and ecotourism promotion boards, Japan can strengthen current practices in line with existing policies and ensure the continued success of ecotourism in the country [28]. This shows the need to emphasize education and training to improve the quality of ecotourism experiences for tourists while preserving the environment and local culture.

The fourth document highlights the importance of minimum-impact policies in the context of ecotourism. Through their analysis, they show that implementing minimum impact policies is key to maintaining environmental sustainability and conserving natural resources in ecotourism destinations [28]. These findings provide an in-depth understanding of how such policies can help reduce the negative impacts of tourism activities on the environment, flora, fauna, and local culture. By taking this into account, this research strengthens the urgency of the need for strict and effective policies in regulating ecotourism practices to support sustainable tourism development and nature and culture preservation in tourist destinations.

The fifth document highlights the impact of ecotourism on ecosystem functions along main rivers and tributaries and its implications for management and policy change. This study reveals that tourism activities along riverbeds provide benefits for tourism and the economy, but require a balance between nature-based recreation and ecological function. Analysis of field data shows that the ecosystem function index tends to be higher than the recreational activity index around rivers, with the highest level of ecosystem function occurring around tributaries. The correlation between tourism parameters and ecosystem functions has various positive and negative relationships [29]. These findings emphasize the importance of developing progressive ecotourism policies and enforcing territorial restrictions to ensure the sustainable use of natural resources. High public awareness and encouragement for the government to adopt more advanced ecotourism policies are the keys to preserving the environment and ecosystem in river tourism destinations.

Overall, the documentation presented highlights the various challenges and potential in developing ecotourism policies and their impacts on local communities and the environment. These findings emphasize the need for a progressive, community participation-based and sustainability-oriented policy approach in managing tourism destinations. By emphasizing the importance of environmental protection, empowering local communities, and improving the quality of tourist experiences, ecotourism policies must integrate these aspects to support sustainable tourism development and nature conservation throughout the world. Thus, collaborative efforts from government, non-profit institutions, and society are key in achieving sustainable ecotourism policy goals.

The implication of mapping documents contributing according to the number of citations in the context of ecotourism policy is a better understanding of the most influential works in academic literature. This provides a strong foundation for researchers and policymakers to identify key sources of knowledge, understand research trends that may influence policy development, and find inspiration from the concepts and ideas that have been developed. By focusing on frequently cited works, policymakers can gain deeper insight into significant intellectual contributions and use them as a basis for developing more effective policies in maintaining environmental and social sustainability in the tourism industry. In addition, a better understanding of the impact and relevance of literature related to ecotourism policy can also strengthen the legitimacy of research, increase credibility within the scientific community, and facilitate cross-disciplinary collaboration to achieve sustainable policy goals.

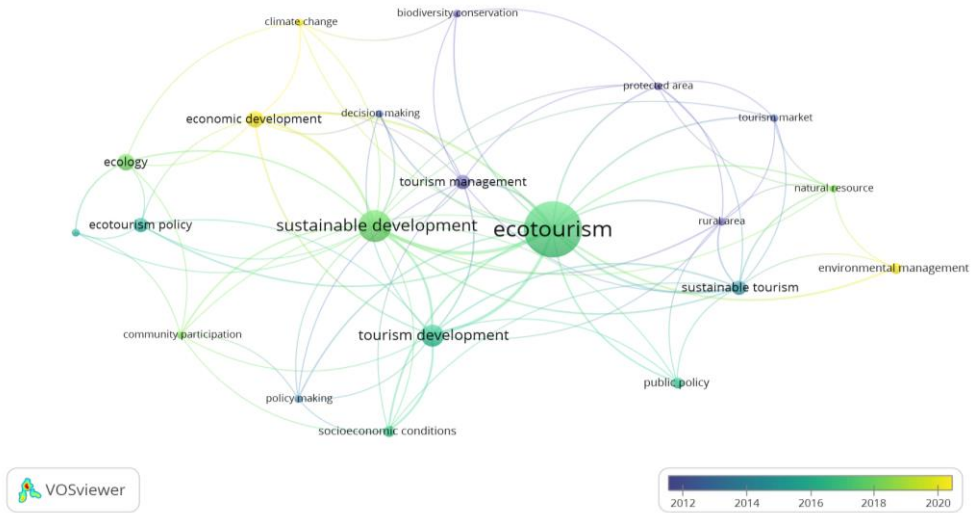
In general, citations are an important indicator in the academic world that shows how often a work or article is cited by other researchers in scientific literature [30, 31]. The benefits of citations in general are very broad because citations help measure the impact and relevance of research in the scientific community, as well as showing the network of interactions between various ideas and concepts. In addition, citations also facilitate the identification of key sources in a research field, help researchers find relevant literature, and highlight the author's contribution to the development of knowledge. Citations can also strengthen the legitimacy and credibility of research, influence currents of thought, and help form the basis for further research and policy [32-34]. Hence, citations not only reflect the influence of a work but also play an important role in advancing understanding and innovation across various disciplines.

### **3.3 Ecotourism policy: the mapping of the research topic**

Topic mapping is essential for understanding key trends and focuses in academic literature. This analysis provides a comprehensive picture of the various aspects studied and researched by academics and practitioners regarding ecotourism policies around the world. By understanding this topic map, researchers and policymakers can identify research priorities, development trends, and knowledge gaps that need to be filled to support sustainable tourism development. Figure 3 shows that the mapping of research topics on ecotourism policy is very diverse, but several topics, such as environmental management, economic development, and climate change, are still relatively new in research and require further discussion.

Environmental management policy in the context of ecotourism is a crucial aspect that aims to protect, maintain and manage natural resources and the environment where ecotourism destinations are located [29]. This approach includes monitoring and managing human activities in tourism destinations, protecting biodiversity and natural ecosystems, as well as reducing negative impacts on the environment such as pollution, habitat damage and natural degradation. Apart from that, environmental management policies also include implementing environmentally friendly practices, educating tourists and local communities about the importance of environmental sustainability, as well as sustainable infrastructure development. The main goal is to maintain a balance between tourism activities and nature conservation so that ecotourism can contribute positively to environmental conservation while providing economic and social benefits for local communities and other stakeholders. Thus, environmental management policies in the context of ecotourism are an important basis for maintaining the sustainability and integrity of ecosystems in tourism destinations.





**Fig. 3.** Mapping research topics on ecotourism policy (Source: Processed by researchers with VOSviewer, 2024)

Economic development policies in ecotourism (ecotourism) aim to stimulate local economic growth while maintaining environmental sustainability [35]. This involves building tourism infrastructure, promoting destinations, creating local jobs, developing small and medium enterprises, and managing tourism revenues to improve the welfare of local communities. These policies may also involve imposing taxes, price regulation, and other financial incentives to encourage investment in the tourism sector. In addition, economic policies in ecotourism emphasize the importance of fair and sustainable income for local communities, as well as their empowerment in taking part in the economic benefits of the tourism industry. By integrating balanced economic aspects with environmental sustainability, economic development policies in ecotourism aim to create a sustainable positive impact on regional economic growth while preserving the natural and cultural environment in tourism destinations.

Ecotourism policies that focus on climate change aim to reduce the negative impact of tourism on the environment and promote environmentally friendly practices [36]. This involves measures to reduce carbon emissions, promote environmentally friendly transport, limit access to environmentally sensitive areas, and raise awareness of climate change among visitors and local communities. Such policies may also include environmental rehabilitation programs, the use of renewable energy, sustainable water management, and the development of mitigation and adaptation policies to climate change [37]. By prioritizing environmental sustainability in policy development, the main objectives of climate change-focused ecotourism policies are to preserve biodiversity, reduce carbon footprints, and promote awareness of the importance of environmental conservation among tourists and local communities, thereby creating a positive impact in combating climate change globally.

The implication of mapping research topics on ecotourism policy is to emphasize the need for a holistic and sustainable approach to managing tourism destinations. By paying attention to aspects such as environmental management, economic development, and climate change, ecotourism policies must integrate various existing interests, including environmental sustainability, local community welfare, and cultural preservation. This implication emphasizes the importance of collaboration between government, non-profit institutions, academics and society in formulating effective and durable policies. Future discussions need to focus on developing policy implementation strategies that can overcome complex

challenges in the tourism industry, strengthen cross-sector cooperation, and increase awareness of the importance of sustainability in all aspects of tourism activities. Apart from that, the discussion can also consider the role of technology and innovation in facing increasingly complex environmental challenges as well as increasing the accessibility of information and education for all stakeholders to support the transformation towards more sustainable tourism globally.

The lack of available research on the three topics, namely environmental management, economic development, and climate change in the context of ecotourism policy, provides a strong impetus for further research. The lack of comprehensive information and understanding in these three areas shows that there is a knowledge gap that needs to be filled to deepen understanding of the impacts, challenges, and opportunities in managing tourism destinations sustainably. By encouraging further research on these three topics, a better understanding of how ecotourism policies can effectively integrate environmental, economic, and social aspects to achieve sustainability goals will be created. Future discussions and research are expected to provide new insights, practical strategies, and policy guidance to overcome the challenges faced in preserving the environment and promoting community welfare in ecotourism tourism destinations.

## **4 Conclusion**

The global mapping of ecotourism policy research reveals compelling trends and emerging dynamics in academic literature. There has been an increasing research interest each year, reflecting global awareness of the importance of sustainable tourism management. These findings also highlight the dominance of the fields of Environmental and Social Sciences, emphasizing environmental management and the socio-cultural impacts of ecotourism policies. Additionally, international collaboration in this research is reflected through contributions from countries such as Indonesia, the United States, China, and Australia. However, there are significant research gaps related to environmental management, economic development, and climate change, indicating the need for further research to address these knowledge deficits. Future discussions and research are expected to provide deeper insights, more targeted policy strategies, and practical steps to develop ecotourism sustainably, ensuring a balance between tourism development and environmental conservation.

The importance of understanding the most influential works in academic literature regarding ecotourism policy is also highlighted through the analysis of document contributions based on citation counts. From frequently cited documents, significant findings can be identified that enrich discussions and thinking in the field of ecotourism policy. These works emphasize the importance of participatory approaches, effective environmental management, local community empowerment, and balanced economic strategies in formulating sustainable tourism policies.

The practical implications of this research are highly significant for the development of ecotourism policies. First, policies that emphasize local community participation can not only enhance support for ecotourism initiatives but also ensure that local communities feel the economic benefits of tourism. This can be achieved through training and education programs that empower communities to participate actively in natural resource management. Second, policies that support sustainable environmental management, such as limiting visitor numbers in sensitive areas and developing eco-friendly infrastructure, can mitigate the negative impacts of tourism on ecosystems. For example, environmental taxes can be implemented to fund conservation and habitat restoration projects. Third, strategies that integrate scientific knowledge with local practices can lead to policies that are more responsive to climate change. By involving researchers and practitioners in the policy-

making process, the decisions made will be more adaptive to existing environmental challenges.

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