



Latin American research on ecotourism and Peru's contribution: A bibliometric overview

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ABSTRACT

Objective. A bibliometric review of the scientific production in ecotourism in Latin America was carried out, with a focus on the contribution of Peru.

Design/Methodology/Approach. Bibliometric techniques were combined with a content analysis approach to collect and analyze the literature on ecotourism in Latin America. Articles from 1992 to 2024 were collected using the Scopus database, and VOSviewer software was used to perform a bibliometric analysis.

Results/Discussion. A total of 414 articles on ecotourism in Latin America were identified, with a diversity of thematic areas, including ecotourism and sustainable development; tourism, diseases, and dissemination; conservation and ecology; protected areas and marketing; and ecology and spatiotemporal analysis. The analysis revealed low collaboration between authors and the need to diversify the topics investigated in Peru. In addition, there has been an increase in the number of publications in recent years, indicating a growing interest in ecotourism research in the region.

Conclusions. Scientific production in ecotourism in Latin America shows growth but with low collaboration and a need for diversification. In Peru, opportunities for improvement were identified, such as increasing research and promoting international collaboration to increase its visibility and impact.

Keywords: ecotourism; bibliometrics; scientific production; Latin America, Peru.

Received: 14-02-2024. **Accepted:** 28-05-2024. **Published:** 08-06-2024

Editor: Adilson Luiz Pinto

How to cite: Martell-Alfaro, K., Torres-Reátegui, W., Reátegui-Villacorta, K., Barbachan-Ruales, E. A., & Orbe, R. C. (2024). Latin American research on ecotourism and Peru's contribution: A bibliometric overview. *Iberoamerican Journal of Science Measurement and Communication*; 4(2), 1-10. DOI: 10.47909/ijsmc.114

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1. INTRODUCTION

TOURISM is a powerful transformative force that plays a crucial role in the global economy and the development of communities around the world (Baydeniz *et al.*, 2024; El Archi & Benbba, 2024; Rubio Oliveira, 2022). It provides opportunities for recreation and relaxation and plays a key role in generating income, creating employment, and fostering social and cultural development (El Archi *et al.*, 2023). Tourism has become one of the most important and fastest-growing economic sectors in an increasingly interconnected world, contributing significantly to many countries and regions' Gross Domestic Product (GDP) (Avci *et al.*, 2024). In addition to its direct economic impact, tourism promotes the conservation of cultural and natural heritage, fosters cultural exchange, and strengthens ties between local communities and visitors (Farrukh *et al.*, 2023).

In this context, ecotourism has emerged as a sustainable and responsible form of travel that seeks to preserve and appreciate local nature and culture while generating economic and social benefits for host communities (Khaledi Koure *et al.*, 2023; Mthombeni *et al.*, 2024). With its wealth of unique ecosystems and cultural diversity, Latin America has witnessed a growing interest in ecotourism (Morante-Carballo *et al.*, 2023). This research aims to explore the scientific production of ecotourism in Latin America, with a special focus on the contribution of Peru, from an interdisciplinary perspective. We seek to understand the current state of ecotourism research in the region and identify the most developed areas of research in Peru. When we bring together the study of tourism in general with a specific focus on ecotourism, we better understand how this form of travel contributes to sustainable development and the conservation of natural and cultural resources in Latin America (Higgins-Desbiolles, 2018).

Despite the growing importance of tourism and ecotourism in the global and local context, there is a gap in our understanding of the contribution of Peruvian universities in the generation of knowledge in this area (Navarro-Drazich *et al.*, 2023) as the study they did (Quintero-Quintero *et al.*, 2022) in Colombia. First, we are largely unaware of the scope and quality of

the research conducted by these institutions and their contribution to scientific production in ecotourism through the publication of academic articles. This lack of knowledge about the research work of Peruvian universities limits our ability to understand the landscape of ecotourism research in the country fully and, therefore, to identify areas of opportunity and collaboration.

On the other hand, it is important to recognize the need to increase Peru's contribution to the world's scientific production in ecotourism through the publication of high-impact articles. The dissemination of relevant and novel research through academic publications not only enriches the body of knowledge in this area but also promotes international recognition of Peru as an important player in the field of ecotourism (Cavalcante *et al.*, 2021; García Estrella *et al.*, 2021). However, this objective requires a greater commitment on the part of Peruvian universities and their teachers, who must be aware of the importance of their contribution and be motivated to carry out high-quality and relevant research in this field.

This research adopts a unique approach that combines bibliometric elements with a critical review of the literature in the field of ecotourism in Latin America, focusing especially on the contribution of Peru. This mixed approach allows us to analyze the existing scientific production in ecotourism in the region and identify emerging trends and knowledge gaps that could guide future research and policies in this field. By integrating the quantitative analysis of academic production with a qualitative assessment of its relevance and contribution, we hope to offer a comprehensive and updated view of the state of ecotourism in Latin America, particularly emphasizing the Peruvian context.

Our objectives were to address both quantitative and qualitative aspects of ecotourism studies in Latin America and Peru. First, we conducted a comprehensive bibliometric analysis of scientific production in the region, using recognized tools to identify publication patterns, collaboration, and citation patterns. Then, we conducted a critical review of the literature to assess the quality and relevance of the studies identified and identify priority areas for research and possible knowledge gaps. Finally, we integrate the findings of both

analyses to provide practical recommendations that will benefit the academic community and decision-makers in the field of ecotourism and conservation in Latin America and Peru.

METHODOLOGY

The methodology we used combines bibliometric techniques for quantitative data collection and analysis with a content analysis approach to assess the quality and relevance of the identified studies (Garrigos-Simon *et al.*, 2018; Merigó *et al.*, 2019). To compile the literature on ecotourism in Latin America, we used the Scopus database due to its broad coverage and access to a variety of scientific journals. We based the search strategy on the combination of key terms related to ecotourism and Latin American country affiliation. We limited the search to original articles to ensure the inclusion of relevant primary research in the analysis.

We conducted the search in March 2024 and obtained articles from 1992 to 2024, with the aim of collecting data covering a significant period of time. We included only full open-access articles to guarantee the results' availability for any interested researcher. It should be noted that the authors of this article are teachers with experience in areas related to tourism, administration, and accounting. This experience in various fields provided a multidisciplinary approach to the analysis of scientific production.

We used VOSviewer software to perform a bibliometric analysis of the selected articles (van Eck & Waltman, 2010). This analysis included co-authorship, co-word, and country collaboration network mapping (Hirsch, 2005; Small, 1973). We also conducted a review of the results to assess the quality and relevance of the identified studies (Merigó *et al.*, 2015). We took into account aspects such as the methodology used, the originality of the findings and the contribution to existing knowledge in the field of ecotourism. Finally, we integrate the findings of the bibliometric analysis and the critical review of the literature to offer a complete and updated view of the scientific production in ecotourism in Latin America, with a special focus on the contribution of Peru.

3. RESULTS AND DISCUSSION

3.1. Latin American Scientific Production

The results reveal a diversity of thematic areas that deal with ecotourism. We found 414 articles in different fields of study, such as Environmental Sciences (225), Social Sciences (183), and Agricultural and Biological Sciences (129) (Figure 1). This shows a significant interest in studying ecotourism from different disciplinary perspectives, which reflects the complexity and interconnection of this thematic area with other fields of knowledge.

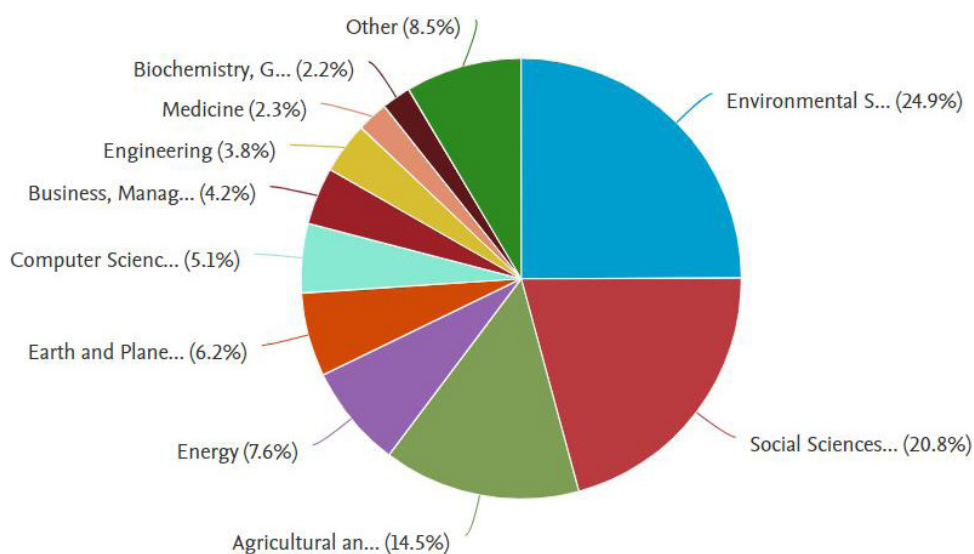


Figure 1. Distribution of Latin American scientific production in ecotourism according to area of knowledge.

In an analysis of the keywords used in the articles (Figure 2), we observed a wide variety of terms related to the subject matter under study. Some of the most frequent keywords include “Tourism,” “Sustainable Development,” “Conservation,” “Ecology,” and “Protected Areas.” The diversity of these key terms underscores the multidimensional nature of the

topic, which encompasses not only economic and tourism aspects but also environmental, social, and cultural aspects. This highlights the need for a holistic and collaborative approach in the management and promotion of ecotourism to ensure its long-term sustainability (Araya *et al.*, 2023; Cuevas Islas & Rosas Baños, 2022; Salazar-Sepúlveda *et al.*, 2022).

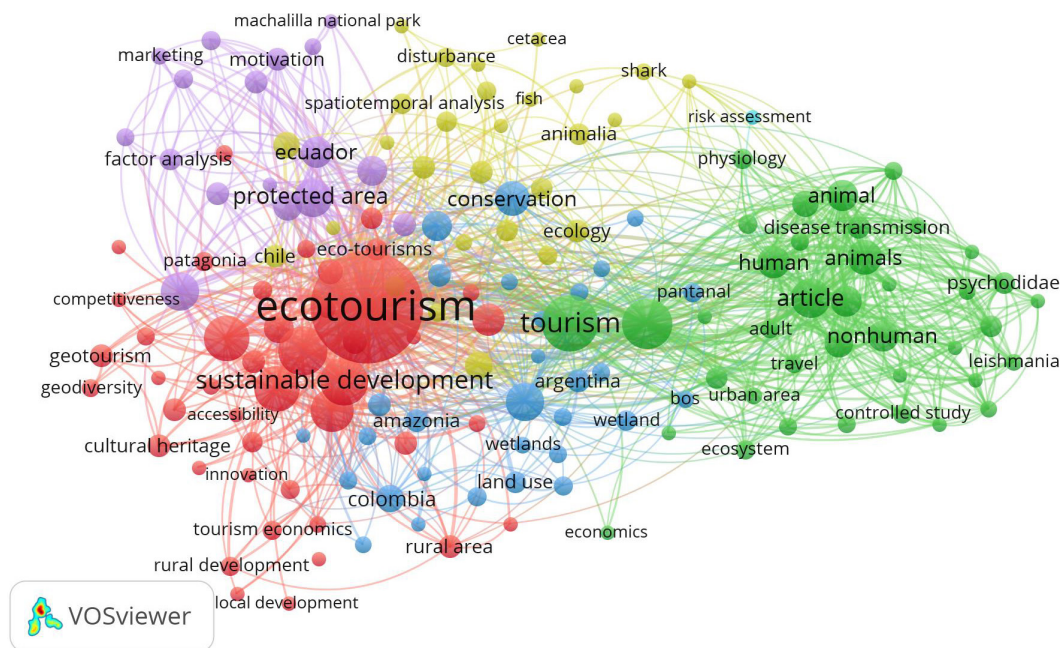


Figure 2. Relationship between keywords used in ecotourism.

In addition to identifying the most frequent keywords, the co-word analysis and map visualization allow us to identify several thematic areas in Latin American scientific production in ecotourism. One of the prominent areas is “ecotourism and sustainable development” (Granados Maguiño *et al.*, 2024; Nuñez-Torres *et al.*, 2023), which reflects the intersection between responsible tourism practices and environmental and social sustainability. Another important thematic area is “tourism, diseases, dissemination”, highlighting public health concerns in tourism contexts (Huamán Berrocal, 2023). Likewise, the theme “conservation and ecology” highlights efforts to protect biodiversity and natural ecosystems in ecotourism destinations (Gomes *et al.*, 2022). “Protected areas and marketing” is another emerging theme indicating the need for promotion and management strategies in conservation areas (Carvache-Franco *et al.*, 2019, 2022). Finally,

“ecology and spatiotemporality analysis” suggests a focus on ecological dynamics and temporal planning in ecotourism studies (Durán-Luz *et al.*, 2023). These thematic areas reflect the diversity of approaches in ecotourism research and the interconnections between different disciplines, underlining the importance of a holistic and multidimensional approach in this field.

Following the analysis of authors (see Figure 3), we identified three authors grouping 45 articles, evidencing their prominence (Bustamante U. *et al.*, 2024; Carvache-Franco, Hassan, *et al.*, 2024; Carvache-Franco, Regalado-Pezúa, *et al.*, 2024; Hassan *et al.*, 2024). Furthermore, this reflects the need for collaboration and the importance of individual expertise in knowledge generation. These authors have made significant contributions through their research, consolidating themselves as leading figures dedicated to the study of ecotourism in the region.

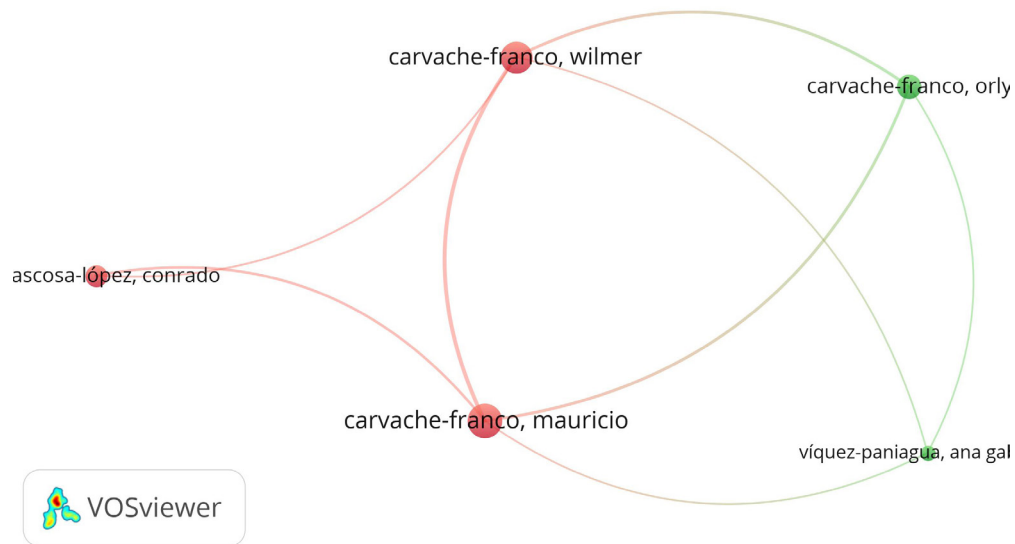


Figure 3. Prominent authors and their networks of collaborations.

3.2. Peruvian Contribution to World Scientific Production in Ecotourism

We conducted an exhaustive analysis of the number of articles published by Peruvian researchers at the global level. Of the 414 articles published on ecotourism worldwide, only 24 articles have Peruvian authorship. This number represents a small fraction of the global total, highlighting the need to increase research in this field in the country. As can be seen in Table 1 the number of articles published by Peruvian researchers is relatively low compared to other Latin American countries.

Country	Documents	Proportion
Brazil	133	27%
Mexico	106	22%
Spain	55	11%
Ecuador	53	11%
Colombia	48	10%
Chile	33	7%
Peru	24	5%
Argentina	20	4%
Costa Rica	17	3%

Table 1. Comparison of Peruvian scientific production in ecotourism with that of Latin American countries.

Seventy percent of Peruvian ecotourism research focuses on economic valuation and

biodiversity conservation (Gómez *et al.*, 2023; Huamantupa-Chuquimaco *et al.*, 2023; Soria-Díaz *et al.*, 2022). However, there is a notable absence of studies exploring the socioeconomic impact of ecotourism on local communities. Only 15% of the publications address topics such as employment generation and economic development derived from ecotourism (Esenarro *et al.*, 2021). Likewise, research on the interaction between sustainable tourism and climate change represents less than 10% of the scientific production in this area (Kirkby *et al.*, 2010). These figures suggest the need to diversify the research topics in order to obtain a more complete and multidimensional vision of ecotourism in the country.

Likewise, the analysis of co-authorships and international collaborations shows that only 20% of Peruvian articles on ecotourism include co-authors from other countries, mainly Brazil and Colombia (Gil Arroyo *et al.*, 2019; Vázquez-Martínez *et al.*, 2019). According to Figure 4, compared to countries such as Brazil and Mexico, where international collaborations represent 45% and 40%, respectively, Peru lags significantly behind (Rodríguez *et al.*, 2023). Increasing participation in international research projects and encouraging the publication of joint studies could raise the visibility and impact of Peruvian research, improving its position in the global context (Bosson & Nocca, 2022).

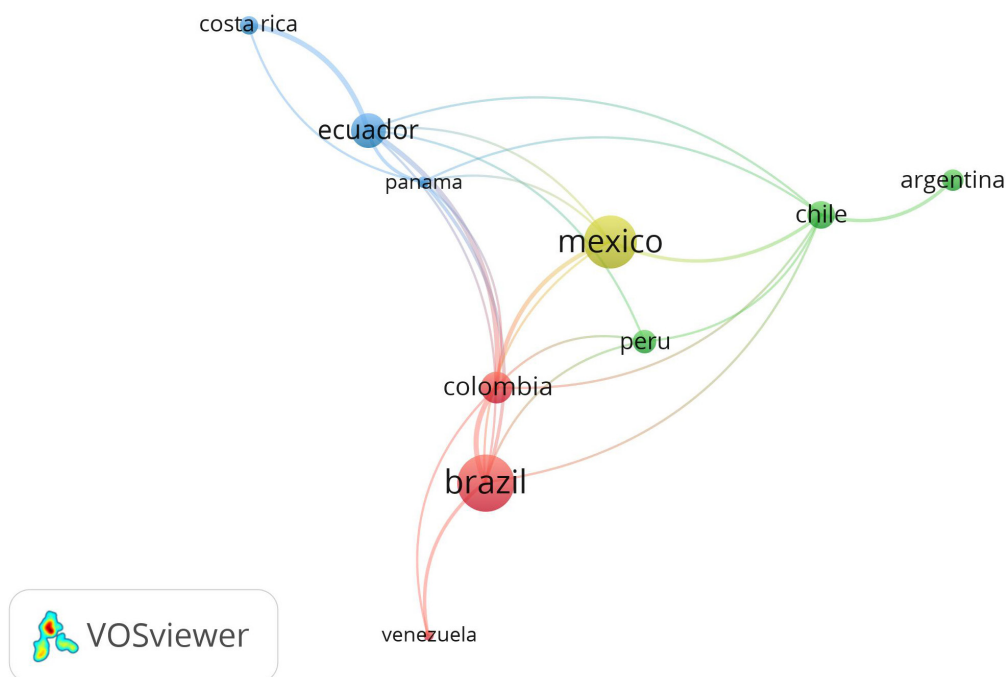


Figure 4. International collaboration network of Latin American countries in ecotourism.

Currently, only 25% of ecotourism studies published by Peruvian researchers adopt a multidisciplinary approach (Calderón-Vargas *et al.*, 2019; Seijas-Díaz *et al.*, 2023). Most research is conducted from a unidimensional perspective, predominantly within the environmental and social sciences. Comparatively, other countries in the region show 50% of publications with integrated approaches, combining social sciences, business management, and environmental studies (Granados Maguiño *et al.*, 2024; Nuñez-Torres *et al.*, 2023; Torres-Sovero *et al.*, 2012). And only 10% of Peruvian publications on ecotourism focus on public policy evaluation and ecotourism management (Nuñez-Torres *et al.*, 2023). This percentage is low compared to countries such as Chile and Colombia, where these types of studies represent 30% and 25% of the scientific production in ecotourism, respectively. The lack of research in this area suggests an opportunity to develop analyses of government policies and regulations, proposing improvements based on scientific evidence to optimize the management of natural resources and sustainable tourism activities (Canales-Springett & Chávez Salas, 2023).

4. CONCLUSIONS

In conclusion, our bibliometric analysis provides a detailed understanding of Latin American countries' publication and collaboration patterns on ecotourism. Peru exhibits a modest presence in scientific production on the subject, identifying significant areas of opportunity to strengthen its contribution at regional and global levels. Also, the comparison of Peru with other countries in the region highlights the need to increase research efforts in this field. Finally, the identification of emerging areas and knowledge gaps provides a clear guide for future research and policies aimed at promoting the sustainable and equitable development of ecotourism in our country.

Conflict of interests

The authors declare that there are no conflicts of interest in this work.

Contribution statement

Conceptualization: K. Martell-Alfaro, W. Torres-Reátegui, K. Reátegui-Villacorta, E. Barbachan-Ruales, R. Cueto-Orbe

Data curation: K. Martell-Alfaro, W. Torres-Reátegui,

Formal analysis: K. Martell-Alfaro, W. Torres-Reátegui, K. Reátegui-Villacorta, E. Barbachan-Ruales, R. Cueto-Orbe

Acquisition of funds; investigation; project administration: K. Martell-Alfaro, W. Torres-Reátegui, K. Reátegui-Villacorta

Supervision, validation, visualization: K. Martell-Alfaro, E. Barbachan-Ruales, R. Cueto-Orbe

Writing -original draft; writing - review and editing: K. Martell-Alfaro, W. Torres-Reátegui, K. Reátegui-Villacorta, E. Barbachan-Ruales, R. Cueto-Orbe

Statement of data consent

The data generated during the study has been included in the article. ●

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