

Bibliometric Analysis of Green Accounting

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ABSTRACT

This study aims to examine the development, intellectual structure, and emerging trends in green accounting research through a bibliometric approach. Data were collected from a reputable scientific database and analyzed using VOSviewer to map co-occurrence of keywords, thematic clusters, and research evolution over time. The findings show that green accounting has developed into a multidisciplinary field closely linked with sustainability, sustainable development, and climate change. The literature is dominated by measurement-oriented themes such as carbon emissions, carbon footprint, and life cycle assessment, indicating a strong focus on quantifying environmental impact. In addition, the integration of energy efficiency and investment-related topics highlights the role of green accounting in supporting organizational decision-making. However, the analysis also reveals that social and human dimensions remain relatively underexplored.

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1. INTRODUCTION

The increasing global awareness of environmental degradation, climate change, and resource depletion has fundamentally reshaped the way organizations perceive their roles and responsibilities. Traditional accounting systems, which primarily focus on financial performance, have been criticized for failing to incorporate environmental and social costs into organizational decision-making processes. As a response to this limitation, the concept of green accounting has emerged as a transformative approach that integrates environmental considerations into accounting practices. Green accounting, also referred to as environmental accounting,

seeks to measure, analyze, and report environmental costs, liabilities, and impacts associated with organizational activities, thereby promoting sustainable development and responsible business practices [1], [2].

Over the past two decades, green accounting has gained significant traction among academics, policymakers, and practitioners. Governments and international organizations have increasingly advocated for the adoption of environmental accounting frameworks to support sustainability goals, such as those outlined in the Sustainable Development Goals (SDGs). Companies are also recognizing the strategic importance of environmental transparency, as stakeholders—including investors,

consumers, and regulators—demand greater accountability regarding environmental performance. This shift has led to the proliferation of sustainability reporting standards and environmental disclosure practices, such as those promoted by the Global Reporting Initiative (GRI) and integrated reporting frameworks [3].

Despite its growing relevance, the field of green accounting remains fragmented and multidisciplinary, encompassing perspectives from accounting, environmental science, economics, and management. The rapid expansion of research in this area has resulted in a diverse body of literature addressing various themes, including environmental cost measurement, carbon accounting, sustainability reporting, and corporate environmental performance. While this diversity reflects the richness of the field, it also presents challenges in understanding the overall intellectual structure, key research trends, and influential contributions within green accounting. Consequently, there is a need for systematic approaches to map and synthesize the existing literature.

Bibliometric analysis has emerged as a powerful methodological tool to address this need. By applying quantitative techniques to analyze academic publications, bibliometric studies can identify patterns in research output, collaboration networks, citation structures, and thematic evolution over time. This approach enables researchers to uncover the intellectual landscape of a particular field, highlight influential authors and journals, and detect emerging research trends [4]. In the context of green accounting, bibliometric analysis can provide valuable insights into how the field has developed, which topics have gained prominence, and where future research opportunities lie.

Furthermore, the importance of conducting a bibliometric analysis of green accounting is underscored by the increasing urgency of environmental issues and the evolving role of accounting in addressing them. As businesses transition toward more sustainable models, the demand for robust environmental accounting practices continues

to grow. Understanding the trajectory of green accounting research is therefore essential for guiding future studies, informing policy decisions, and enhancing the practical implementation of environmental accounting frameworks. By systematically examining the existing body of literature, this study aims to contribute to the advancement of knowledge in this critical and rapidly evolving field.

Although the literature on green accounting has expanded significantly, there is still a lack of comprehensive and systematic analysis that maps its intellectual structure, identifies key contributors, and examines the evolution of research themes over time. Existing studies often focus on specific aspects of green accounting without providing an integrated overview of the field as a whole. This fragmentation limits the ability of researchers and practitioners to fully understand the development, current state, and future direction of green accounting research. Therefore, a bibliometric analysis is needed to address this gap by offering a holistic and data-driven perspective on the field. The objective of this study is to conduct a comprehensive bibliometric analysis of green accounting literature in order to map the intellectual structure, identify key research trends, and highlight influential authors, institutions, and publications.

2. METHODS

This study employs a quantitative bibliometric approach to systematically analyze the development and structure of green accounting research. Bibliometric analysis is particularly suitable for mapping scientific knowledge, as it enables the identification of publication trends, influential authors, collaboration networks, and thematic evolution within a specific research field [4]. The data for this study were retrieved from a reputable academic database, such as Scopus or Web of Science, due to their comprehensive coverage of peer-reviewed literature. The search strategy involved the use of relevant keywords, including “green accounting,” “environmental accounting,”

oriented research. Rather than discussing sustainability in abstract terms, recent studies increasingly emphasize quantification, performance metrics, and actionable strategies, particularly in response to global pressures such as climate change and net-zero targets.

In contrast, earlier research—represented by blue tones—tends to cluster

around more general or interdisciplinary topics such as humans, animals, ecosystems, and controlled study. This suggests that the field initially drew heavily from environmental science and broader ecological discussions before gradually evolving into a more structured and application-driven domain.

Table 1. The Most Impactful Literatures

Citations	Authors and year	Title
2604	[5]	China and India lead in greening of the world through land-use management
2146	[6]	Safeguarding human health in the Anthropocene epoch: Report of the Rockefeller Foundation-Lancet Commission on planetary health
1851	[7]	The green, blue and grey water footprint of crops and derived crop products
1500	[8]	Trans-endocytosis of CD80 and CD86: A molecular basis for the cell-extrinsic function of CTLA-4
1325	[9]	Relativistic Shapiro delay measurements of an extremely massive millisecond pulsar
1154	[10]	Leptin-receptor-expressing mesenchymal stromal cells represent the main source of bone formed by adult bone marrow
1054	[11]	Biodiversity in the city: key challenges for urban green space management
845	[12]	The state of OA: A large-scale analysis of the prevalence and impact of Open Access articles
845	[13]	Effects of particle composition and species on toxicity of metallic nanomaterials in aquatic organisms
795	[14]	Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue

Source: Scopus, 2026

3.3 Density Visualization

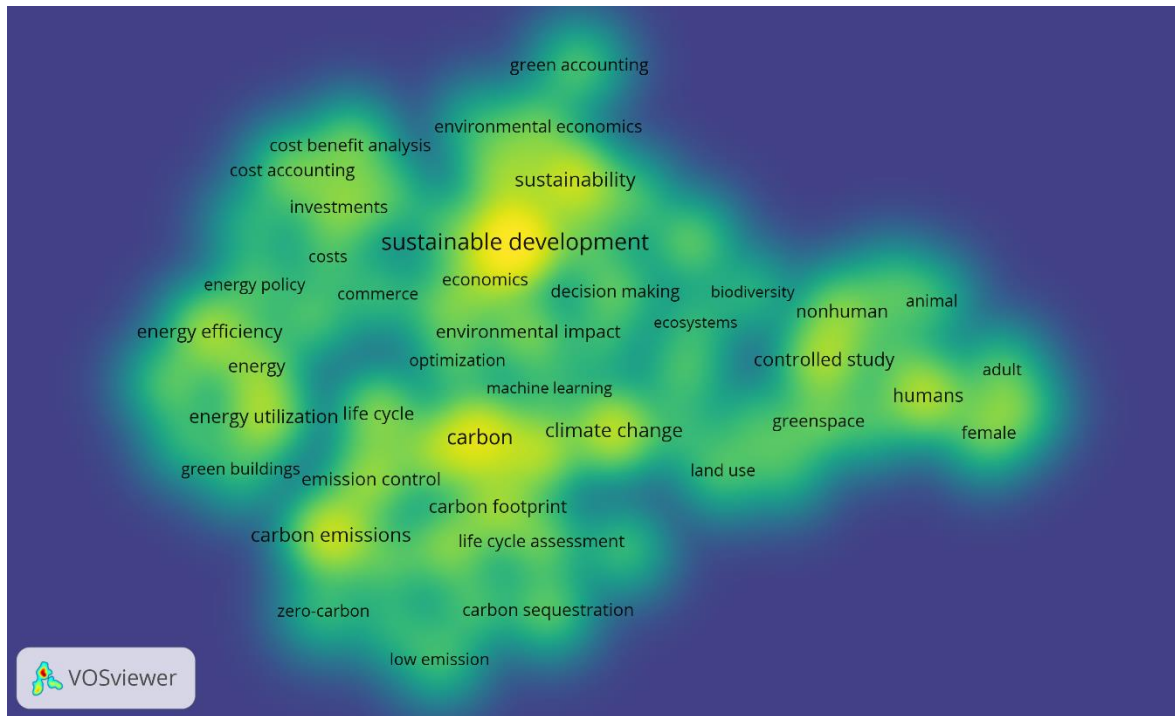


Figure 3. Density Visualization

Source: Data Analysis Result, 2026

Figure 3 highlights the most intensively studied areas within green accounting research, where brighter yellow regions indicate higher concentrations of publications. The strongest density appears around sustainable development, carbon, and climate change, suggesting that these topics form the intellectual core of the field. This indicates that green accounting is primarily positioned as a tool to support sustainability transitions, with a strong emphasis on measuring and managing carbon-related impacts. The surrounding presence of environmental impact, life cycle assessment, and carbon footprint reinforces the idea that the field is increasingly driven by quantification and performance evaluation.

At the same time, moderately dense areas extend toward energy efficiency, energy utilization, and cost-benefit analysis, reflecting the applied and managerial dimensions of the literature. In contrast, peripheral and less dense regions—such as those related to humans, animals, and broader ecological contexts—suggest topics that are either less explored or more specialized within this domain.

Discussions

The findings of this bibliometric analysis reveal that green accounting research has undergone a clear transformation, moving from a relatively narrow focus on environmental cost recording toward a broader role within sustainability discourse. The prominence of terms such as sustainable development, carbon, and climate change indicates that green accounting is increasingly positioned as a strategic instrument rather than a purely technical accounting tool. This shift reflects how organizations are expected to integrate environmental considerations into decision-making processes, aligning accounting practices with global sustainability agendas and climate commitments.

The cluster and density patterns further show that the field is strongly anchored in measurement-oriented approaches. Concepts such as carbon footprint, life cycle assessment, and emission control appear consistently across the network, suggesting that quantification remains central to the development of green

accounting. This emphasis indicates that researchers and practitioners are seeking more precise ways to capture environmental impact, enabling organizations to translate ecological concerns into measurable and comparable indicators. At the same time, this orientation also reflects the growing demand for accountability, particularly in the context of ESG reporting and regulatory pressure.

Another important insight emerges from the linkage between green accounting and energy-related themes, including energy efficiency, energy utilization, and investment analysis. These connections suggest that green accounting is not only about reporting environmental impact but also about guiding resource allocation and operational improvement. In this context, accounting becomes a bridge between environmental responsibility and economic rationality, supporting decisions that balance cost considerations with sustainability outcomes. This reinforces the idea that green accounting plays a role in shaping organizational strategies rather than merely documenting past performance.

However, the analysis also highlights an imbalance in the development of the field. While technical and carbon-related topics are highly dominant, themes related to social and human dimensions appear more peripheral. Terms associated with humans, ecosystems, and broader ecological interactions are less dense, indicating that these perspectives have not been explored as deeply within the green accounting literature. This suggests that the field still tends to prioritize environmental measurement over a more holistic understanding of sustainability that integrates social, behavioral, and institutional factors.

These findings point to several directions for future research. There is a need

to strengthen the theoretical grounding of green accounting by connecting it more explicitly with frameworks such as stakeholder theory and institutional perspectives. In addition, expanding the focus toward emerging economies and organizational contexts beyond large corporations could provide a more nuanced understanding of how green accounting is implemented in practice. Future studies may also explore the integration of digital technologies, such as data analytics and machine learning, to enhance environmental measurement and reporting. By addressing these areas, green accounting research can move toward a more comprehensive and context-sensitive framework that reflects the complexity of sustainability challenges.

4. CONCLUSION

This study concludes that green accounting research has evolved into a multidisciplinary and increasingly application-oriented field, with a strong concentration on sustainability, carbon measurement, and climate-related issues. The bibliometric evidence shows that the literature is dominated by themes related to quantification, such as carbon footprint and life cycle assessment, reflecting a growing emphasis on measurable environmental performance and accountability. At the same time, the linkage with energy efficiency and investment-related topics indicates that green accounting is being used to support strategic and operational decision-making within organizations. However, the relatively limited attention to social and human dimensions suggests that the field has not yet fully embraced a holistic view of sustainability.

REFERENCES

- [1] R. Gray, "Is accounting for sustainability actually accounting for sustainability... and how would we know? An exploration of narratives of organisations and the planet," *Accounting, Organ. Soc.*, vol. 35, no. 1, pp. 47–62, 2010.
- [2] S. Schaltegger and R. Burritt, "Business cases and corporate engagement with sustainability: Differentiating ethical motivations," *J. Bus. ethics*, vol. 147, no. 2, pp. 241–259, 2018.
- [3] R. G. Eccles, M. P. Krzus, and S. Ribot, "Meaning and momentum in the integrated reporting movement.," *J. Appl. Corp. Financ.*, vol. 27, no. 2, 2015.
- [4] N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," *J. Bus. Res.*, vol. 133, pp. 285–296, 2021.
- [5] C. Chen *et al.*, "China and India lead in greening of the world through land-use management," *Nat. Sustain.*, vol. 2, no. 2, pp. 122–129, 2019.
- [6] S. Whitmee *et al.*, "Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health," *Lancet*, vol. 386, no. 10007, pp. 1973–2028, 2015.
- [7] M. M. Mekonnen and A. Y. Hoekstra, "The green, blue and grey water footprint of crops and derived crop products," *Hydrol. earth Syst. Sci.*, vol. 15, no. 5, pp. 1577–1600, 2011.
- [8] O. S. Qureshi *et al.*, "Trans-endocytosis of CD80 and CD86: a molecular basis for the cell-extrinsic function of CTLA-4," *Science (80-.)*, vol. 332, no. 6029, pp. 600–603, 2011.
- [9] H. T. Cromartie *et al.*, "Relativistic Shapiro delay measurements of an extremely massive millisecond pulsar," *Nat. Astron.*, vol. 4, no. 1, pp. 72–76, 2020.
- [10] B. O. Zhou, R. Yue, M. M. Murphy, J. G. Peyer, and S. J. Morrison, "Leptin-receptor-expressing mesenchymal stromal cells represent the main source of bone formed by adult bone marrow," *Cell Stem Cell*, vol. 15, no. 2, pp. 154–168, 2014.
- [11] M. F. J. Aronson *et al.*, "Biodiversity in the city: key challenges for urban green space management," *Front. Ecol. Environ.*, vol. 15, no. 4, pp. 189–196, 2017.
- [12] H. Piwowar *et al.*, "The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles," *PeerJ*, vol. 6, p. e4375, 2018.
- [13] R. J. Griffith, J. Luo, J. Gao, J. Bonzongo, and D. S. Barber, "Effects of particle composition and species on toxicity of metallic nanomaterials in aquatic organisms," *Environ. Toxicol. Chem.*, vol. 27, no. 9, pp. 1972–1978, 2008.
- [14] F. Schneider, G. Kallis, and J. Martinez-Alier, "Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue," *J. Clean. Prod.*, vol. 18, no. 6, pp. 511–518, 2010.