

MAPPING THE EVOLUTION OF GREEN ACCOUNTING RESEARCH: A COMPREHENSIVE BIBLIOMETRIC ANALYSIS

Rahel Ananda Sitorus¹, Wahyu Widarjo²

^{1,2} Universitas Sebelas Maret

Email: rahelanandasitorus@student.uns.ac.id¹, widarjo@staff.uns.ac.id²

Copyright © 2026 The Author



This is an open access article

Under the Creative Commons Attribution Share Alike 4.0 International License

Abstract

This study aims to provide a comprehensive bibliometric analysis of green accounting literature in Indonesia between 2015 and 2025. Green accounting is an emerging approach that integrates environmental concerns into financial reporting to support sustainability. The study addresses the growing urgency of environmental degradation and the increasing demand for environmentally responsible corporate practices. Using a bibliometric method, data were collected from the Scopus database and analyzed using VOSviewer software. The analysis included publication trends, co-authorship networks, keyword co-occurrence, research variables, and theoretical frameworks. The findings reveal a significant growth in green accounting publications since 2020, driven by ESG awareness and sustainability reporting demands. Stakeholder and legitimacy theories were the most dominant, with profitability and firm value as frequently studied variables. Keyword mapping indicates a research emphasis on sustainability, CSR, and environmental performance. However, author collaboration remains fragmented. The study concludes that green accounting research in Indonesia is evolving toward broader sustainability dimensions, although financial impact remains a key focus. These findings offer strategic insights for academics, practitioners, and policymakers to enhance research collaboration, policy integration, and the practical implementation of green accounting to achieve sustainable development goals.

Keywords: Green Accounting; Sustainability; Bibliometric Analysis

Abstrak

Studi ini bertujuan untuk memberikan analisis bibliometrik komprehensif terhadap literatur akuntansi hijau di Indonesia antara tahun 2015 dan 2025. Akuntansi hijau adalah pendekatan baru yang mengintegrasikan kepedulian lingkungan ke dalam pelaporan keuangan untuk mendukung keberlanjutan. Studi ini membahas urgensi yang semakin meningkat terkait degradasi lingkungan dan meningkatnya permintaan akan praktik perusahaan yang bertanggung jawab terhadap lingkungan. Dengan menggunakan metode bibliometrik, data dikumpulkan dari basis data Scopus dan dianalisis menggunakan perangkat lunak VOSviewer. Analisis tersebut mencakup tren publikasi, jaringan kepenulisan bersama, kemunculan bersama kata kunci, variabel penelitian, dan kerangka kerja teoretis. Temuan menunjukkan pertumbuhan signifikan dalam publikasi akuntansi hijau sejak tahun 2020, didorong oleh kesadaran ESG dan tuntutan pelaporan keberlanjutan. Teori pemangku kepentingan dan legitimasi merupakan yang paling dominan, dengan profitabilitas dan nilai perusahaan sebagai variabel yang sering dipelajari. Pemetaan kata kunci menunjukkan penekanan penelitian pada keberlanjutan, CSR, dan kinerja lingkungan. Namun, kolaborasi penulis masih terfragmentasi. Studi ini menyimpulkan bahwa penelitian akuntansi hijau di Indonesia berkembang menuju dimensi keberlanjutan yang lebih luas, meskipun dampak keuangan tetap menjadi fokus utama. Temuan ini menawarkan wawasan strategis bagi akademisi, praktisi, dan pembuat kebijakan untuk meningkatkan kolaborasi penelitian, integrasi kebijakan, dan implementasi praktis akuntansi hijau guna mencapai tujuan pembangunan berkelanjutan.

Kata Kunci: Akuntansi Hijau; Keberlanjutan; Analisis Bibliometrik

1. Introduction

The environmental crisis in Indonesia is increasingly showing its urgency, especially in 2025 which is characterized by the increasing frequency and intensity of natural disasters such as floods, landslides, and droughts that hit various regions. This phenomenon not only impacts ecosystem damage and biodiversity loss, but also causes huge economic and social losses. For example, a major flood that

hit Jabodetabek in March 2025 caused losses reaching Rp1.69 trillion (CNN Indonesia, 2025). In Bima District, West Nusa Tenggara, floods and landslides in February 2025 caused losses of Rp75 billion and killed and disappeared a number of residents (Detik, 2025). A similar event also occurred in Pekalongan Regency, Central Java, in January 2025, which killed at least 25 people and damaged infrastructure such as bridges. In addition, the dry season, which is predicted to peak from June to August 2025, threatens the agricultural sector and water supply in areas such as Central Java, Kalimantan, Sulawesi, Bali, Nusa Tenggara, and Maluku (Liputan6, 2025). According to the Ministry of National Development Planning/Bappenas, the impacts of climate change cost the Indonesian economy IDR 22.8 trillion per year (DDTC News, 2025). This reflects that the development system and natural resource management have not been sustainable.

In response to these conditions, the need for integration between environmental aspects and economic systems in all lines of policy and business operations is increasingly urgent. One approach that is developing to answer this challenge is green accounting. This approach emphasizes the need to record and report the impact of economic activity on the environment in a systematic and measurable manner. Research by Dwianika et al., (2024) states that green accounting is a form of accounting that incorporates environmental aspects into the traditional financial reporting system, thus becoming a bridge between economic goals and ecological sustainability. As environmental awareness increases and pressure from various stakeholders, such as investors and governments, green accounting is becoming increasingly important. In research Ulupui et al., (2020) explains that the application of green accounting helps companies calculate the impact of environmental externalities internally, thus encouraging wiser decision making and more efficient cost control. One widely used technique is Material Flow Cost Accounting (MFCA), which is able to map the flow of raw materials and energy in the production process and identify sources of inefficiency that harm the environment. In this way, companies can increase efficiency while improving their environmental performance.

The benefits of green accounting are not limited to environmental aspects, but also have a positive impact on company value and performance. In research Sukmadilaga et al., (2023) found that green accounting practices accompanied by sustainability disclosures are able to increase the perception of company value in the eyes of stakeholders. Other research by Endiana et al., (2020) shows that green accounting contributes to corporate sustainability and operational efficiency through waste reduction and optimal resource utilization. Research by Riyadh et al., (2020) also corroborates these findings by stating that the application of green accounting can result in cost savings and increase company profits in the long run. In addition to financial benefits, green accounting also plays a strategic role in building public trust. According to Romandhon et al., (2023), corporate openness in disclosing environmental information has a positive impact on investor perceptions and increases public trust, especially in sectors that have high environmental risks. This is in line with the results of the study Fernando et al., (2024), which suggests that encouragement from customers and increased environmental awareness are the main factors that encourage MSMEs to start implementing environmentally friendly practices through green accounting.

However, the implementation of green accounting also faces various challenges, especially among small and medium enterprises (SMEs). Research by Rasyid et al., (2025) reveals that limited resources and lack of understanding are the main obstacles in adopting this system effectively. Furthermore, Saputra et al., (2021) emphasizes that the success of green accounting in increasing firm value is strongly influenced by good environmental performance. Meanwhile, Lestari et al., (2024) adds that corporate social responsibility (CSR) disclosure practices supported by green accounting play an important role in realizing sustainable development goals, especially in developing countries. Although academic publications on green accounting are increasing, many studies are still fragmented and limited to specific contexts. Therefore, Dwianika et al., (2024) suggests the importance of conducting a systematic study that is able to unify various findings and provide a clearer direction for the development of green accounting practices and research in the future. This study was conducted to answer this need, with the aim of mapping the development of green accounting from various perspectives ranging from basic concepts, methodological approaches, to the latest research trends as a theoretical basis for a broader and more effective application of green accounting and supporting the achievement of sustainable development goals (SDGs).

2. Literature Review

Green accounting is an approach that integrates environmental aspects into conventional accounting systems. This approach aims to provide a more comprehensive picture of the impact of economic activity on the environment, as well as support sustainability-oriented decision making. Green accounting brings a paradigm shift in accounting, from merely pursuing financial gain to responsibility

for the environment (Dwianika et al., 2024). Thus, green accounting not only functions as a recording tool, but also as a means of transparency and corporate accountability to stakeholders. Implementation of green accounting can be done through technical methods such as Material Flow Cost Accounting (MFCA) which is used to track and reduce waste of energy and materials in the production process. With this method, companies can improve operational efficiency while reducing environmental burdens. In a regulatory context, this practice is often linked to compliance with public policies. The application of green accounting in line with the single-use plastic ban policy can encourage companies to achieve operational efficiency while supporting environmental goals (Saputra et al., 2021). In terms of economic benefits, various studies show that the application of green accounting not only has an impact on environmental preservation, but can also increase company value and performance. Green accounting has a significant influence in increasing firm value and profitability, although green innovation does not show the same direct impact (Astuti & Ahmar, 2025). This means that accurate recording and reporting of environmental costs can encourage better financial performance.

In line with that, research by Zainal et al., (2025) shows that green accounting is one of the main factors that affect the company's financial performance. The study highlights that the sustainability of the company is supported by three main pillars, namely environmental, social, and economic aspects, where green accounting acts as a link between the three. Meanwhile, Darsono et al., (2024) emphasizes that the successful implementation of ESG (Environmental, Social, and Governance) will be more optimal if supported by green accounting practices. In his research, it is explained that the implementation of ESG integrated with green accounting allows companies to manage waste more efficiently and utilize resources optimally, thus strengthening their overall environmental performance. In terms of corporate governance, research by Tagal et al., (2024) shows that environmental reporting carried out systematically can affect the auditor's opinion on the quality of company performance. In addition, Sulistyawati et al., (2025) also explains that incorporating environmental data into internal audits can strengthen company value because it provides a more complete picture of performance, not only from the financial side.

However, the implementation of green accounting also faces various obstacles, especially in developing countries and the small and medium enterprise (SME) sector. In a study Rasyid et al., (2025) it is stated that low awareness, limited human and technical resources are the main barriers to the implementation of green accounting in medium-sized companies. Therefore, an educative approach and policy support are needed so that the implementation of green accounting can be more equitable. In the aspect of external communication, green accounting also plays an important role in building corporate image. In research by Romandhon et al., (2023) states that adequate disclosure of environmental accounting information is able to increase investor confidence and public perception, especially in industrial sectors that have high environmental risks. Thus, green accounting is also a strategic tool in building corporate reputation. Overall, the literature review shows that green accounting is developing not only as a technical accounting practice, but also as an important element in the company's sustainability strategy. Nonetheless, there are still limitations in geographical coverage, methodological approaches, and lack of integration between sectors. This points to the need for a more in-depth systematic literature review to synthesize the existing findings and provide clear directions for the future development of green accounting science and practice.

3. Research Methods

This study uses a *bibliometric review* approach to map publication trends, author collaboration, dominant themes, and the direction of research development on *green accounting*. This method was chosen because it is able to present a quantitative and visual overview of the literature, and help identify potential research gaps. Data was retrieved from the Scopus database, which was chosen because it has a wide coverage of international journals and supports full metadata export. The search was conducted on publications during the period 2015-2025 using the keyword "green accounting". The data obtained was exported in CSV format which included important metadata such as title, author, affiliation, keywords and citations. Analysis was conducted using VOSviewer software to produce visualizations of author collaboration networks, relationships between keywords, and citation patterns.

Analysis techniques included: descriptive analysis for the distribution of publications by time, journal, country, institution, and author; *co-authorship analysis* to see the intensity of cooperation between authors and institutions; *keyword co-occurrence* to identify and group research themes; *co-citation analysis* to find key thoughts in the literature; and *trend topic analysis* to map the development of themes over time. Visualizations are displayed in the form of *network maps*, *density maps*, and *overlay visualizations*. To ensure validity and topic focus, inclusion and exclusion criteria were used as summarized in Table 1.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Database source	Scopus	Other than Scopus
Topic relevance	Article contains the keyword "Green Accounting"	Articles do not contain the keyword "Green Accounting"
Publication period	Articles published within the 2015-2025 timeframe.	Article published less than 2015
Geographical context	Involves context or data from Indonesia	Does not involve context or data from Indonesia
Document Type	Article	Other than article
Availability of access	Article available full access	Articles not available for full access

Sources: Authors' own elaboration

The application of the above criteria is done to ensure that all selected articles truly support the research objectives and provide a valid and representative picture of the literature map on the topic under study. In addition, to support the transparency of the article search and selection process, this study is equipped with a PRISMA flow chart that explains the stages of identification, screening, eligibility assessment, until the articles are included in the bibliometric analysis. This diagram is organized to show the clarity of the data collection procedure.

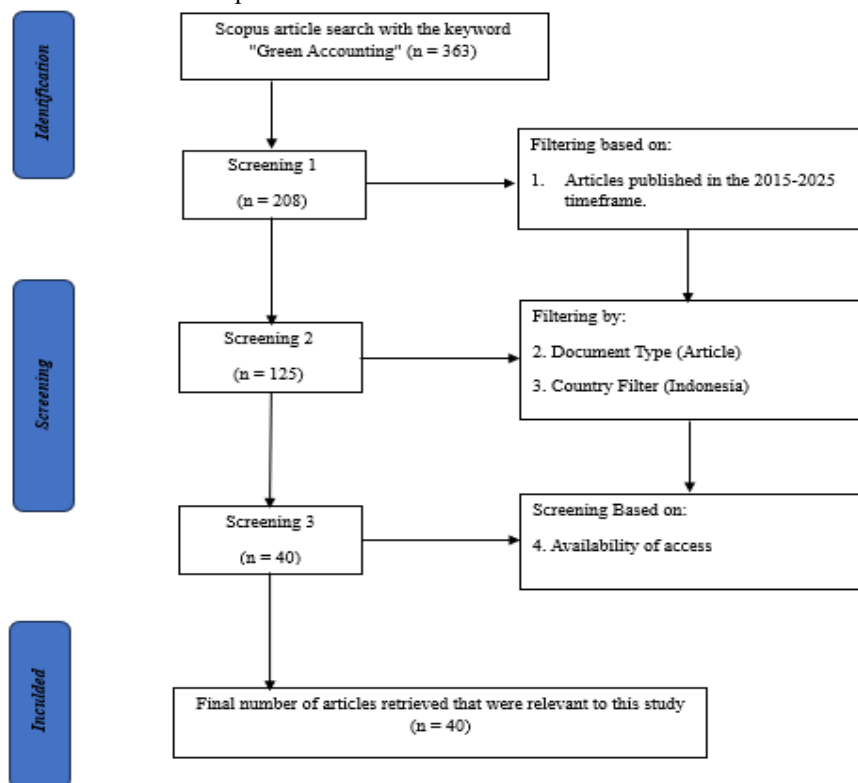


Figure 1

PRISMA Flow Diagram

Sources: Authors' own elaboration

4. Results and Discussion

4.1 Research Results

This section presents the results of bibliometric analysis of 40 articles on green accounting in the Indonesian context during the period 2015-2025. The analysis was conducted based on various bibliometric indicators such as publication trends, institutional affiliations, journal sources, research variables, theories and research methods, keyword analysis, and author collaboration networks.

Publication Trends

Figure 2 shows the publication trend of green accounting articles during 2015-2025. There was a

significant increase from only 1 article per year in 2017-2018 to 6 articles in 2020, and reached a peak of 16 articles in 2024. This increase reflects the increasing awareness of environmental issues, the need for environmental transparency in financial reports, and the encouragement of public policies that support sustainability practices. The significant spike in 2020 is likely to be triggered by the increasing global pressure on ESG practices and the achievement of the SDGs, as the issue of climate change and its impacts become more visible.

In addition, the increasing attention of academics to green accounting is also influenced by the increasing market and investor demand for sustainability information, as well as the implementation of stricter environmental regulations in some sectors, such as the ban on single-use plastics and the demand for ESG reporting by public companies. However, fluctuations in the number of publications have also been seen in some years, including a decline in certain years. This decline could be due to several factors, including limited research funding, a shift in academic focus to other issues such as digitalization or Islamic finance, or the impact of government policy transitions that pay less attention to environmental aspects. In addition, the COVID-19 pandemic in 2020-2022 is also likely to contribute to a temporary decline in the number of publications, due to limited access to research fields and a shift in researchers' focus to the health sector and economic recovery.

Overall, the trends indicate that green accounting is increasingly becoming a major concern in academia and business practice, especially as environmental issues become an integral part of the national and global development agenda.

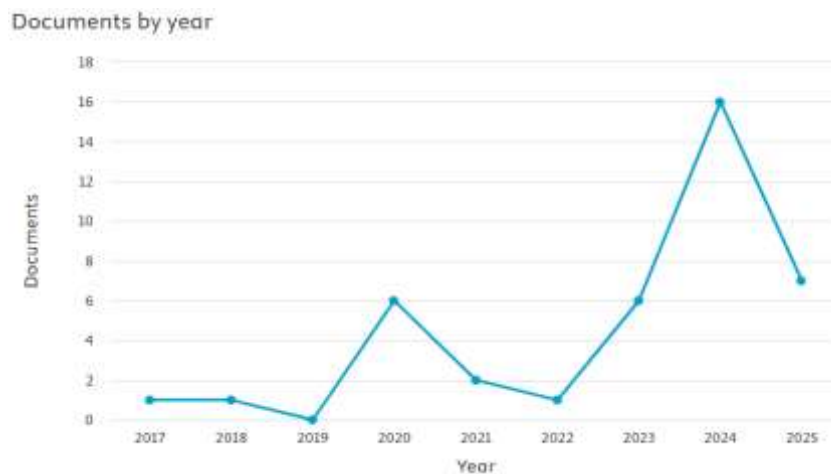


Figure 2. Research Documents by Year

Affiliation

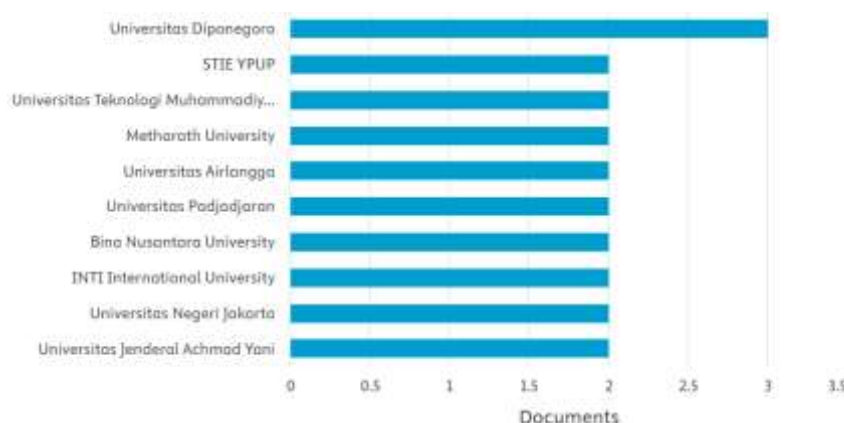


Figure 3. Top 10 Most Documents by Affiliation

Figure 3 shows a visual representation of the institutions that publish the most articles related to green accounting. Diponegoro University visually dominates, followed by several other major universities, indicating that green accounting research is centered on leading universities in Indonesia.

Table 2. Top 10 Most Documents by Affiliation

Institutions	Number of Articles
Diponegoro University	10
STIE YPUP	4
University of Technology Muhammadiyah Jakarta	3
Metharath University	3
Airlangga University	3
Padjajaran University	2
Bina Nusantara University	2
INTI International University	2
Jakarta State University	2
Jenderal Achmad Yani University	2

Table 2 shows that Diponegoro University is the institution with the highest contribution, with 10 articles. STIE YPUP followed with 4 articles, then Muhammadiyah University of Technology Jakarta, Metharath University, and Airlangga University each contributed 3 articles. Several other institutions such as Padjajaran University, Bina Nusantara University, INTI International University, Jakarta State University, and Jenderal Achmad Yani University each contributed 2 articles. This indicates that green accounting is a major research focus at large institutions, especially those with environmental accounting and management study programs.

Journal Analysis

Table 3. Top 10 Most Documents by Source

Research Journal	Number of Articles
International Journal of Energy Economics and Policy	8
Environmental Economics	3
Ikonomicheski Izsledvania	2
Journal of Distribution Science	2
Revista De Gestao Social E Ambiental	2
Accounting	1
Asian Journal of Business and Accounting	1
Contaduria Y Administracion	1
Corporate Board Role Duties and Composition	1
Corporate Governance and Organizational Behavior Review	1

Table 3 shows that the majority of green accounting articles are published in international journals that focus on energy, environment, and development economics. The journal with the largest contribution is the International Journal of Energy Economics and Policy with 8 articles, showing that this topic has a high relevance to energy efficiency and public policy. Environmental Economics took second place with 3 articles, followed by Ikonomicheski Izsledvania in third place with 2 articles. This shows that journals that focus on energy and environmental issues are the main publication channels for green accounting topics.

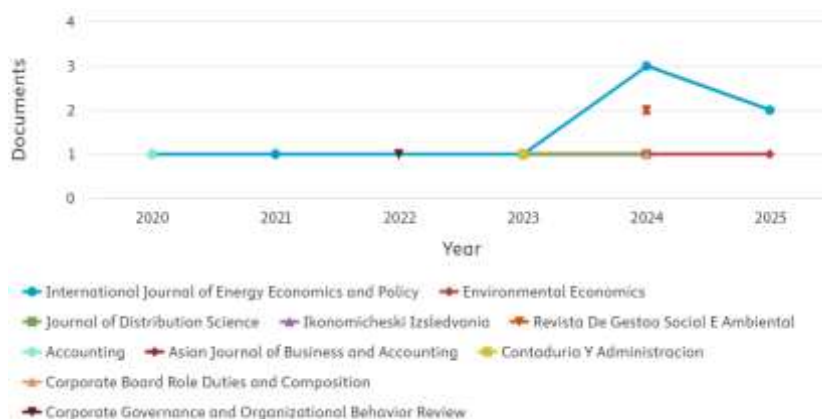


Figure 4. Top 10 Most Documents by Source

Figure 4 graphically depicts the distribution of publications by journal source. This visualization

emphasizes the dominance of the International Journal of Energy Economics and Policy, which emerges as the largest concentration. The size of the labels and connection lines indicate that the journal is not only prolific in the number of articles, but also an important reference in the citation network among green accounting research. This indicates a strong link between green accounting and the policy and energy efficiency aspects that are often the backdrop for environmentally-based financial analysis.

Research Variables

Table 4. Top 15 Most Variables in This Research

Research Variables	Number of Variables
Profitability	7
Financial Performance	6
Firm Value	6
Sustainable Performance	5
CSR Disclosure	5
Firm Performance	4
Environmental Performance	3
Stakeholder Involvement	2
Environmental, Social, and Governance (ESG)	2
Sales Growth	2
Leverage	2
Firm Size	2
Human Capacity Building	2
Sustainability Strategy	2
Corporate Sustainability Management System (CSMS)	1

The analysis of research variables in 40 articles on green accounting reveals thematic trends that can be grouped into four main clusters based on the focus of the study. These clusters show the main direction of academics' attention in examining the influence and implementation of green accounting in Indonesia.

First, the most dominant cluster is the Financial Performance Cluster. Variables such as profitability, financial performance, firm value, sales growth, firm size, and leverage are included in this category. The focus of this cluster is to see how green accounting practices affect the company's financial performance, both in terms of profitability and market value. The dominance of this cluster shows that most studies still use a rational economic approach, which measures the extent to which sustainability practices can provide financial benefits to companies.

Second, there is the Sustainability Performance Cluster which includes variables such as sustainable performance, sustainability strategy, and corporate sustainability management system (CSMS). Research in this cluster emphasizes more on the contribution of green accounting to the long-term strategy and sustainability goals of the company. This indicates a shift in the attention of some researchers from mere financial returns to a more comprehensive sustainability.

Third, is the Social and Environmental Accountability Cluster. Variables included in this cluster include CSR disclosure, environmental performance, and environmental, social, and governance (ESG). This cluster underscores the function of green accounting as a transparency tool that not only shows financial performance, but also the extent to which companies are environmentally and socially responsible. Research in this cluster is usually related to efforts to improve corporate reputation and fulfill stakeholder demands.

Fourth, although not many, there is also an Institutional and Capacity Cluster that contains variables such as stakeholder involvement and human capacity building. This cluster highlights the importance of stakeholder support as well as internal company capacity, particularly in terms of human resources and technical understanding, in implementing green accounting effectively. Although not yet the main focus, the existence of this cluster is important as a foundation for long-term success.

Overall, these clusters show that research on green accounting in Indonesia does not only focus on the financial dimension, but also begins to explore the social, environmental and institutional aspects that are intertwined in realizing sustainable business practices.

Table 5. Research Documents by Research Theory

Research Theory	Number of Articles
Stakeholder Theory	17
Legitimacy Theory	16

The Natural Resource-Based View Theory (NRBV)	6
Agency Theory	4
Signaling Theory	4
Transparency Theory	1
Institutional Theory	1
Psychological Reactance Theory	1

Table 5 shows that Stakeholder Theory is used in 17 articles, making it the most dominant theory in green accounting studies. This reflects the importance of the role and influence of stakeholders (investors, regulators, society) in demanding transparency and environmental responsibility from companies. Legitimacy Theory comes second with 16 articles, which underscores the need for companies to gain and maintain social legitimacy through environmental reporting. Other theories such as Natural Resource-Based View with 6 articles, Agency Theory and Signaling Theory with 4 articles each, although less frequently used, provide additional perspectives on internal and external motivations for sustainability reporting. These theories show that the conceptual approach in green accounting is closely related to social perceptions, investor confidence, and long-term business strategy.

Table 6. Research Documents by Research Method

Research Method	Number of Articles
Quantitative	30
Qualitative	6
Mixed-method	4

Table 6 shows that quantitative approaches were used in 30 out of 40 articles, indicating a strong preference for empirical-statistical approaches in evaluating the effects of green accounting. Quantitative methods are usually conducted through regression, SEM, or panel data analysis to test the relationship between financial and environmental variables. Qualitative approaches were used in 6 articles, reflecting the importance of interpretative approaches in understanding the process and strategy of green accounting implementation in the field. Meanwhile, a mixed methods approach was used in 4 articles, providing a more holistic picture by combining numerical and narrative insights. The dominance of quantitative approaches confirms that the field is still oriented towards model testing and objective impact measurement.

Keyword Co-Occurrence

Figure 5 displays the results of the keyword co-occurrence analysis which provides an overview of the relationship between the most frequently occurring topics in green accounting research during the 2015-2025 period in Indonesia. This analysis uses network visualization to show the semantic relationship between keywords that often appear together in one article, so that the focus and tendency of research themes can be identified. From a total of 119 unique keywords detected in the dataset, only 14 keywords were visualized in the network because they met the minimum threshold of occurrence twice. This shows that most of the keywords are specific and only appear once, which indicates that there is a diversity of research focus, but there is no strong terminological consistency in green accounting studies in Indonesia.

In the visualization, "Green Accounting" appears as the central keyword with the highest number of occurrences at 30 times and has the highest total link strength at 44, indicating that this topic is at the center of all discussions. This keyword is connected to various other terms such as "Corporate Social Responsibility" (CSR), "Environmental Performance", "Profitability", and "Sustainability" which each have significant link strength and frequency of occurrence. The occurrence of keywords such as "Firm Value", "Financial Performance", and "Firm Performance" reinforces the previous finding that 260 most green accounting research efforts are oriented towards its impact on the financial performance of 260 companies. Meanwhile, the presence of keywords such as "ESG", "Carbon Emission Disclosure", and "Environmental Management Accounting" indicates an interest in more technical sustainability and environmental management reporting issues.

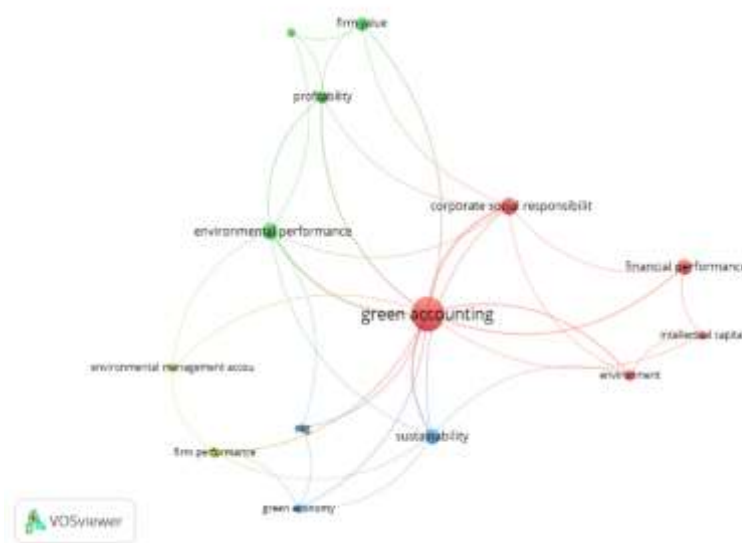


Figure 5. Co-occurrence Network Analysis

Figure 6 shows the density of keywords based on their frequency of occurrence and their relationship with each other. Yellow or light colors indicate areas of high density, indicating that the keywords are frequently used and closely related to many other terms. Green Accounting emerges as the most dominant term, followed by CSR, Sustainability, and Environmental Performance. This visualization provides an in-depth understanding of the main focus of research in the last decade, which is on the contribution of green accounting to sustainability and corporate social responsibility.

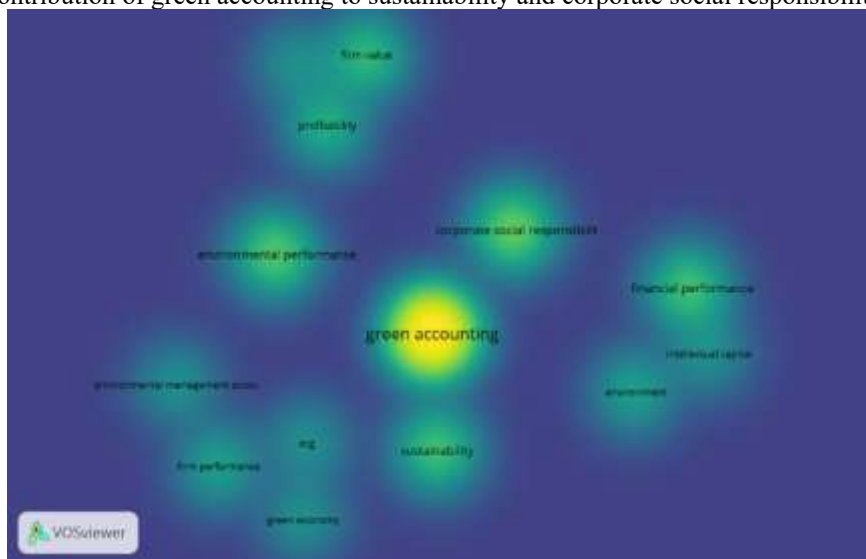


Figure 6. Keyword Density Visualization

Table 7 reinforces the findings of the two figures above, with Green Accounting mentioned 30 times, CSR 8 times, Environmental Performance 7 times, and Sustainability 6 times. This frequency of occurrence suggests that green accounting research is heavily focused on how environmental reporting and management practices contribute to the achievement of sustainable development goals (SDGs) and long-term value creation.

Table 7. Top 14 Most Used Keywords

Label	Occurrences	Total Link Strength
Green Accounting	30	44
Corporate Social Responsibility	8	14
Environmental Performance	7	14

Sustainability	6	13
Profitability	4	9
Firm Value	5	8
Firm Performance	3	7
Environment	3	6
Financial Performance	6	6
Green Economy	2	6
ESG	2	5
Carbon Emission Disclosure	2	4
Environmental Management Accounting	2	3
Intellectual Capital	2	3

Co-Authorship Analysis

Figure 7 displays the co-authorship network in green accounting research in Indonesia over the period 2015-2025. This visualization aims to identify the structure of collaboration between authors, show which researchers are actively working together, and illustrate the extent of connection between groups of researchers in this field. From a total of 139 authors identified in the 40 articles analyzed, only authors who had a minimum number of publications of one article were included in the visualization network. This means that authors who were only co-contributors without a name on the publication, or who only contributed to the article without any connection to other authors, were not visualized in the network. This selection was made to maintain the clarity and focus of the visualization on authors who actually contribute and are involved in green accounting research collaboration.

In the network visualization, each node represents a single author, while the connecting lines between nodes (links) indicate collaboration or joint involvement in a single article. The size of the node represents the number of publications, while the thickness of the line indicates the strength of the collaboration, measured by the frequency of joint involvement in multiple articles. It can be seen that this network tends to form small collaborative groups (author clusters), indicating that most authors tend to work in fixed or limited teams, with a high intensity of collaboration within a narrow scope. For example, there are groups of authors who are active from the same university or who have a similar research focus, forming micro-communities within the scope of green accounting research.

One of the most prominent authors is Purwohedhi, Unggul, who appears in two articles and has a high strength of connection, followed by Cahyonowati, Nur and Ratmono, Dwi, who also appear in two articles each. The presence of these authors shows that they act as research hubs or connectors between research groups in the field of green accounting. However, in general, this collaboration network is still fragmented. Not all authors are connected to each other, which indicates that the collaboration network between researchers in this field has not fully developed. Cross-institutional and cross-disciplinary collaborations are still limited, leaving room for strengthening more inclusive and synergistic academic networks in the future. With the increasing attention to sustainability and green accounting issues, there is a need for wider collaborative encouragement, both between higher education institutions, government agencies, and the industrial sector, so that the research results produced are richer in perspective and practically relevant.

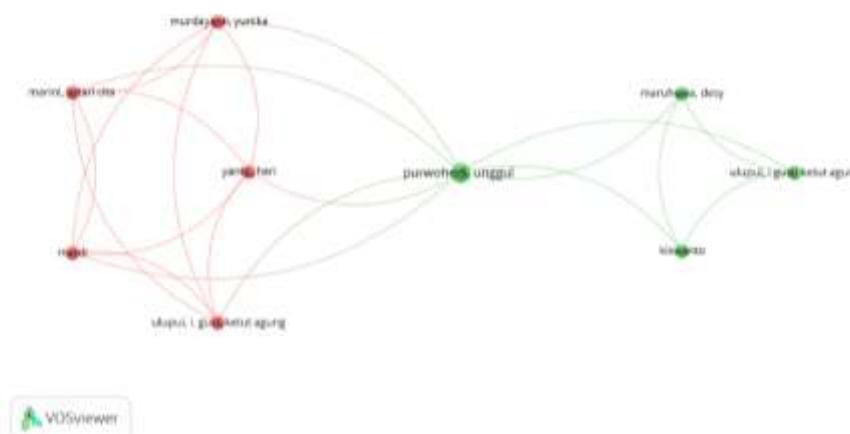


Figure 7. Co-authorship network analysis

Figure 8 shows the individual authors' contributions to the overall green accounting literature. The lighter areas in the visualization indicate the most active authors. These results show that only a few authors consistently publish papers in this area, while the majority have only one contribution.

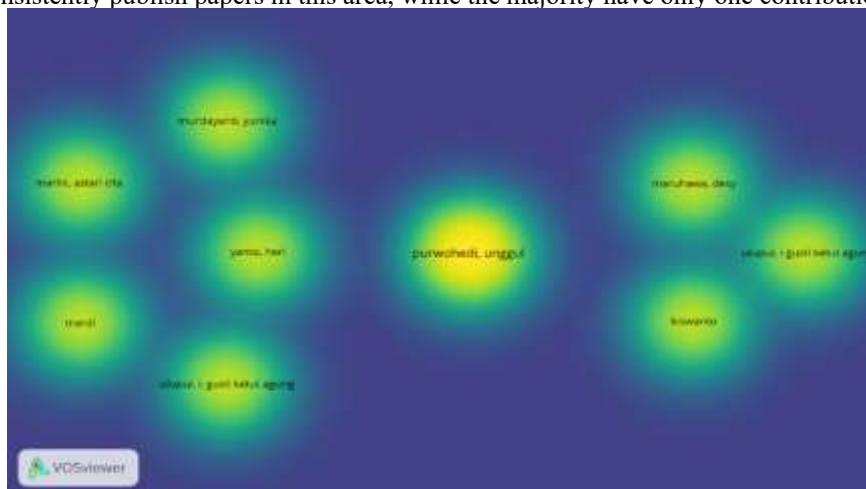


Figure 8. Author Density Visualization

Table 8 places Purwohedhi, Unggul as the most productive and influential author with 2 articles that received 18 citations and a link strength of 8. Followed by Cahyonowati, Nur and Ratmono, Dwi who each have 2 articles and 6 citations. This shows that although most authors only contribute one article, there are several key authors who have a greater influence in shaping the direction of green accounting research.

Table 8. Top 15 Most Productive Writers

Author	Documents	Citations	Total Link Strength
Purwohedhi, Unggul	2	18	8
Cahyonowati, Nur	2	6	7
Ratmono, Dwi	2	6	7
Lestari, Dwi Indah	2	1	5
Mardi	1	13	5
Marini, Astari Cita	1	13	5
Murdayanti, Yunika	1	13	5
Rungsuk, Anong	2	1	5
Ulupui, I. Gusti Ketut Agung	1	13	5
Vasudevan, Asokan	2	1	5
Yanto, Heri	1	13	5
Al-Shmam, Maher A.	1	21	4
Alabdullah, Tariq Tawfeeq Yousif	1	3	4
Alfaiza, Salsabila Aisyah	1	21	4
Darsono, Darsono	1	1	4

4.2 Discussion

The results indicate that green accounting research in Indonesia has experienced significant development, particularly in recent years. The increasing number of publications reflects growing academic attention to environmental accounting, sustainability reporting, ESG practices, and corporate environmental responsibility. The peak of publications in 2024 suggests that green accounting has become more relevant as environmental issues, climate change, and sustainability agendas increasingly influence business and academic discourse.

The dominance of Diponegoro University and several other institutions suggests that green accounting research is still concentrated in certain academic institutions. This indicates the presence of research centers or academic groups that are more active in developing environmental accounting studies. However, the distribution of publications also shows that broader institutional participation is still needed to strengthen the development of green accounting research in Indonesia.

The dominance of the International Journal of Energy Economics and Policy as the main publication source indicates that green accounting is closely related to energy efficiency, environmental policy, and sustainability issues. This finding suggests that green accounting is not only viewed as an

accounting topic, but also as part of a broader discussion on sustainable development and environmental governance.

In terms of research variables, the dominance of profitability, financial performance, and firm value shows that most studies still focus on the economic consequences of green accounting. This indicates that researchers tend to examine whether green accounting practices can provide financial benefits to companies. However, the presence of variables such as CSR disclosure, environmental performance, ESG, and sustainability strategy shows that the research focus has begun to expand toward social and environmental accountability.

The theoretical findings show that Stakeholder Theory and Legitimacy Theory are the most frequently used theoretical frameworks. This indicates that green accounting research in Indonesia is strongly influenced by the idea that companies need to respond to stakeholder expectations and maintain social legitimacy through environmental responsibility and transparent reporting. Other theories, such as the Natural Resource-Based View Theory, Agency Theory, and Signaling Theory, provide additional perspectives on how companies manage resources, reduce information asymmetry, and communicate sustainability practices to external parties.

The dominance of quantitative methods shows that green accounting research is still largely oriented toward statistical testing and empirical measurement. While this approach is useful for examining relationships between variables, the relatively limited use of qualitative and mixed-method approaches suggests that future studies could explore green accounting practices more deeply through interviews, case studies, or field-based research.

The keyword analysis confirms that green accounting is strongly associated with CSR, environmental performance, sustainability, profitability, and firm value. This indicates that the main research themes are still centered on the relationship between environmental accounting practices and corporate performance. At the same time, the emergence of keywords such as ESG, carbon emission disclosure, and environmental management accounting suggests that future research may increasingly focus on more specific sustainability and environmental reporting issues.

Finally, the co-authorship analysis shows that collaboration among authors remains fragmented. Most authors work within small research groups, and broader collaboration across institutions is still limited. Therefore, future green accounting research in Indonesia would benefit from stronger cross-institutional, interdisciplinary, and international collaboration. Such collaboration can enrich research perspectives, improve methodological diversity, and strengthen the practical relevance of green accounting studies in supporting sustainable business practices.

5. Conclusion

This study maps the development of green accounting literature in the Indonesian context during 2015–2025 using a Systematic Literature Review approach based on bibliometric analysis of 40 Scopus-indexed articles. The findings show that green accounting research has grown significantly, especially since 2020, driven by increasing attention to sustainability reporting, stricter environmental regulations, and market demand for environmentally responsible business practices. The publications are mostly contributed by leading institutions such as Diponegoro University, while Stakeholder Theory and Legitimacy Theory dominate the theoretical framework. The research focus is mainly on the relationship between green accounting and corporate financial performance, particularly profitability and firm value, although recent studies have begun to address broader sustainability issues. Keyword analysis shows that green accounting, CSR, sustainability, and environmental performance are the main themes, while author collaboration remains relatively fragmented. Overall, this study provides a knowledge map of green accounting research in Indonesia and can serve as a reference for academics, practitioners, and policymakers in developing future research agendas, strengthening collaboration, and supporting sustainable development through ESG practices and digital transformation.

Bibliography

- Astuti, T., & Ahmar, N. (2025). Effects of green intellectual capital, green accounting, and green innovation on firm value: The moderating role of return on assets. *Environmental Economics*, 16(1), 1–12. [https://doi.org/10.21511/ee.16\(1\).2025.01](https://doi.org/10.21511/ee.16(1).2025.01)
- CNN Indonesia. (2025). *Banjir Jabodetabek sebabkan kerugian Rp1,69 triliun*. <https://www.cnnindonesia.com/>
- Darsono, D., Ratmono, D., Lee, S., Cahyonowati, N., & Lianawati, L. (2024). ESG and Environmental Performance: Multiple Mediation Models of Green Accounting and CSR Disclosure. *International Journal of Energy Economics and Policy*, 14(5), 365–371. <https://doi.org/10.32479/ijee.16682>

- DDTC News. (2025). *Perubahan iklim sebabkan kerugian Rp22,8 triliun per tahun di Indonesia*. <https://news.ddtc.co.id>
- Detik. (2025). *Banjir dan longsor terjang Bima, timbulkan kerugian Rp75 miliar dan korban jiwa*. <https://www.detik.com/>
- Dwianika, A., Purwanto, E., Suyoto, Y. T., & Pitaloka, E. (2024). Bibliometrics Analysis of Green Accounting Research. *International Journal of Energy Economics and Policy*, 14(1), 349–358. <https://doi.org/10.32479/ijeep.15055>
- Endiana, I. D. M., Dicriyani, N. L. G. M., Adiyadnya, M. S. P., & Putra, I. P. M. J. S. (2020). The Effect of Green Accounting on Corporate Sustainability and Financial Performance. *Journal of Asian Finance, Economics and Business*, 7(12), 731–738. <https://doi.org/10.13106/jafeb.2020.vol7.no12.731>
- Fernando, K., Jocelyn, H., Frista, F., & Kurniawan, B. (2024). The Effect of Green Accounting Disclosure on the Firm Value of Listed Mining and Agriculture Companies in Southeast Asia Countries. *International Journal of Energy Economics and Policy*, 14(1), 377–382. <https://doi.org/10.32479/ijeep.15151>
- Lestari, D. I., Vasudevan, A., Adialita, T. C., & Rungsuk, A. (2024). Green Practice Motivation in Small Businesses. *Revista de Gestao Social e Ambiental*, 18(1), 1–23. <https://doi.org/10.24857/rgsa.v18n1-150>
- Liputan6. (2025). *Banjir dan kekeringan melanda sejumlah wilayah, korban jiwa dan kerugian meningkat*. <https://www.liputan6.com/>
- Rasyid, S., Azis, N. A., & Rahmat, A. (2025). Green Accounting for Medium-Sized Enterprises: A Review of Participatory Action Research Towards A Sustainable Future. *International Journal of Economics and Financial Issues*, 15(1), 84–92. <https://doi.org/10.32479/ijefi.17331>
- Riyadh, H. A., Al-Shmam, M. A., Huang, H. H., Gunawan, B., & Alfaiza, S. A. (2020). The analysis of green accounting cost impact on corporations financial performance. *International Journal of Energy Economics and Policy*, 10(6), 421–426. <https://doi.org/10.32479/ijeep.9238>
- Romandhon, Pramuka, B. A., Lestari, P., & Kaukab, M. E. (2023). The impact of disclosure of green accounting information on company performance on the Indonesia Stock Exchange. *Contaduria y Administracion*, 70(1), 148–168. <https://doi.org/10.22201/fca.24488410e.2025.5077>
- Saputra, K. A. K., Manurung, D. T. H., Rachmawati, L., Siskawati, E., & Genta, F. K. (2021). Combining the concept of green accounting with the regulation of prohibition of disposable plastic use. *International Journal of Energy Economics and Policy*, 11(4), 84–90. <https://doi.org/10.32479/ijeep.10087>
- Sukmadilaga, C., Winarningsih, S., Yudianto, I., Lestari, T. U., & Ghani, E. K. (2023). Does Green Accounting Affect Firm Value? Evidence from ASEAN Countries. *International Journal of Energy Economics and Policy*, 13(2), 509–515. <https://doi.org/10.32479/ijeep.14071>
- Sulistiyawati, A. I., Kusumo, W. K., Wahdic, N., Saifudin, & Dwianto, A. (2025). Green accounting practices, financial health, the audit and its impact on the value of the company. *International Journal of Innovative Research and Scientific Studies*, 8(3), 3380–3390. <https://doi.org/10.53894/ijirss.v8i3.7246>
- Tagal, J., Sinaga, G., & Siagian, V. (2024). *Green Accounting And Auditor ' S Opinion On Firm Performance (Study From Consumer Non Cyclical In Indonesia) 1 Introduction In the modern era , the green economy – an economic framework focused on sustainable development without degrading the environmen*. 1–18.
- Ulupui, I. G. K. A., Murdayanti, Y., Marini, A. C., Purwohedhi, U., Mardi, & Yanto, H. (2020). Green accounting, material flow cost accounting and environmental performance. *Accounting*, 6(5), 743–752. <https://doi.org/10.5267/j.ac.2020.6.009>
- Zainal, A., Rahman, H., Putra, P. D., Harahap, K., & Thohiri, R. (2025). Firm Performance Perspective from the Implications of Environmental Conservation. *Management and Production Engineering Review*, 16(1), 1–13. <https://doi.org/10.24425/mper.2025.153924>