

Green Accounting and Sustainability Reporting: Reviewing an Applied Research Agenda for Modern Accounting

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ABSTRACT

This study systematically reviews the development of applied research on green accounting and sustainability reporting within the framework of modern accounting. The growing global awareness of environmental issues encourages companies to shift from profit-oriented goals toward broader social and ecological responsibility. Applying the Systematic Literature Review (SLR) approach guided by the PRISMA 2020 protocol, this study analyzed 20 Scopus Q1–Q2 indexed articles published between 2023 and 2024. The articles were classified by main topic and research method to identify emerging trends and research directions.

The results show that 65% of studies employed quantitative methods, 25% qualitative, and 5% each used mixed-methods and bibliometric approaches. The dominant topics encompass the correlation among ecological accounting, sustainability performance, and firm value, while others address sustainability reporting, ESG disclosure, and accounting digitalization. These findings indicate that green accounting research remains empirically oriented but is shifting toward conceptual and multidisciplinary approaches.

This study provides important implications for advancing modern accounting theory and practice. Integrating economic, social, technological, and environmental perspectives is essential for developing a sustainable accounting framework that aligns with global challenges.

Keywords: Green Accounting, Sustainability Reporting, Environmental Accounting, and Corporate Social Responsibility.

BACKGROUND

In recent decades, global concern regarding ecological and sustainability challenges has increased, requiring companies to not only focus on achieving economic profits, but also to consider the social and ecological consequences of their entrepreneurial operations. Traditional financial reports have been deemed incapable of providing comprehensive information about companies' environmental empowerment activities. This limitation has given rise to the need for a more inclusive accounting approach to environmental aspects, which has come to be known as green accounting.

Green accounting represents an initiative to connect corporate economic interests with environmental preservation. This approach is regarded as a vital instrument for comprehending the relationship between economic operations and environmental dimensions that influence business continuity (Abdullah & Amiruddin, 2020). As part of environmental accounting, this framework concentrates on quantifying, documenting, and disclosing the ecological implications of an organization's operational processes. Through the integration of environmental expenses within accounting practices, firms are able to recognize and control their environmental footprint more efficiently, while enhancing the effectiveness of resource utilization (Zahrani & Sari, n.d.).

The systematic development of environmental management accounting (EMA) also plays a role in helping companies allocate resources efficiently, reduce negative impacts on the environment, and increase profitability (Gunawan & Jatu Nilawati, 2023). Furthermore, EMA serves as an instrument of accountability and strategy in creating sustainable corporate value through transparency of environmental costs and fulfillment of stakeholder demands, such as those of the government, consumers, and investors. However, the effectiveness of environmental accounting implementation still depends heavily on the quality of corporate governance and management readiness in facing changes in the accounting system (Zahrani & Sari, n.d.).

On the other hand, increasingly competitive business dynamics require companies to maintain short-term success without neglecting long-term sustainability. Stakeholders now pay close attention to sustainability practices that encompass three main dimensions: economic, social, and environmental (Justita Dura & Riyanto Suharsono, 2022). Sustainability has become a strategic direction and a benchmark for modern corporate responsibility in maintaining harmony between economic growth and ecological conservation to ensure the well-being of future generations.

In this context, corporate social responsibility (CSR) becomes an important element that connects corporate profit objectives with broader societal and ecological obligations. CSR emphasizes the active role of companies in embedding social awareness and ecological preservation within their business strategies. Furthermore, CSR also functions as a mechanism for transparency and accountability that supports sustainability disclosures as evidence of a firm's dedication to responsible and enduring business conduct (Gulo & Octafian, 2024) (Gulo Marnila & Oftafian Ryan, 2024).

The progression of sustainability disclosure signifies a transformation in business paradigms from a solely economic focus toward more comprehensive social and environmental accountability. Initially centered on environmental transparency, sustainability disclosure has now developed into a strategic tool for embedding ESG (Environmental, Social, and Governance) dimensions within corporate strategies. Conceptual frameworks like stakeholder theory and legitimacy theory serve as the core underpinnings explaining the rationale behind these reporting practices (Du Toit, 2024).

Based on these developments, research on green accounting, environmental accounting, sustainability, and corporate responsibility has gained increasing attention in modern accounting literature. Nevertheless, a knowledge gap remains concerning the combination of those four concepts within practical and quantifiable sustainability reporting practices. Therefore, this article aims to review the applied research agenda on green accounting and sustainability reporting as a stepping stone towards modern

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accounting that is simultaneously oriented towards social, economic, and environmental responsibility.

Research Objectives

This study aims to review and summarize the development of practical research on green accounting and sustainability reporting in the contemporary economic landscape, with a particular emphasis on developing countries. We want to know how much the application of green accounting can affect environmental performance, company value, and corporate social responsibility, by looking at the role of intermediaries such as energy efficiency, environmentally friendly innovation, and sustainable management practices. In addition, this study also explores how sustainability reporting—in terms of both transparency and decoupling risk—can strengthen the relationship between accounting practices, environmental, social, and governance (ESG) disclosures, and sustainable development goals. Using bibliometric analysis and a conceptual review of various empirical studies, we will trace the influence of digitalization and artificial intelligence on the process and quality of sustainability reports in various regions, such as ASEAN, the United States, and the European Union. Overall, this study aims to map the direction of green accounting research in the modern era, highlight gaps in previous research, and provide an analytical model for advancing accounting practices and policies that promote change towards a green economy and global sustainability.

RESEARCH METHODS

This research employs a qualitative methodology utilizing the Systematic Literature Review (SLR) technique. The SLR technique represents an organized, explicit, and reproducible research framework for conducting comprehensive examination of scholarly sources (Sintadevi et al., 2024).

There are several main reasons for conducting a systematic literature review, including to identify existing research gaps, determine the direction of future research, develop a conceptual or theoretical framework, and discover emerging research themes or those with potential for further study (Sintadevi et al., 2024).

In this study, the PRISMA 2020 guidelines (Page et al., 2021) were applied as in previous studies using similar methods (Han et al., 2023; Sintadevi et al., 2024) with modifications in three main stages, namely:

- a. Stage I – Review Planning, which includes determining the research objectives, developing the research framework, and establishing literature search criteria.
- b. Stage II – Review Implementation, which includes the process of identifying, selecting, evaluating, and synthesizing relevant studies.
- c. Stage III – Reporting and Dissemination, which includes writing articles, reporting descriptive results, and discussing research findings.

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To ensure that the reviewed literature is relevant to the research focus, several search criteria were established, namely:

1. Articles must be from reputable scientific journals that are published regularly, are still in print, and are indexed in Scopus Q1 or Q2.
2. Articles should be composed in the English language and made freely available to the public (open access).
3. Publications are limited to the last two years (2023–2024).
4. The search is conducted through Google Scholar using the keywords Green Accounting, Sustainability Reporting, Environmental Accounting, and Corporate Social Responsibility.
5. Search results are limited to the first 10 pages of each keyword, with a minimum of 20 citations.
6. The final stage involves aligning the selected articles with the established research objectives and focus.

Articles obtained from literature searches that met the research criteria were tabulated in a spreadsheet worksheet. The data collected included the first author's name, year of publication, article title, journal name, volume, issue number, DOI, journal ranking, and number of citations. Based on the search results, ten articles were obtained, the profiles of which are presented in Table 1.

To deepen the understanding of the academic debate on sustainability reporting, green accounting, environmental accounting, and corporate social responsibility, the author also identified additional information related to the main topics discussed, the methodological approaches used (qualitative, quantitative, or mixed methods), and—specifically for quantitative research—the type of data used (primary or secondary) and the specific methods applied, such as case studies, interviews, or statistical analysis.

Table 1 Article profiles that match the search criteria

	Profile Artikel	Frekuensi	Presentase
Search keywords	Green Accounting	5	25%
	Sustainability Reporting	7	35%
	Environmental Accounting	7	35%
	Corporate Social Responsibility	1	5%
Total		20	100%
Year	2023	10	50%
	2024	10	50%
Total		20	100%
Journal Rankings	Scopus Q1	14	70%
	Scopus Q2	6	30%
Total		20	100%

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In the analysis stage, this study used manual content analysis to interpret and classify information obtained from selected articles. Content analysis was used to trace the occurrence of certain words, concepts, or themes in qualitative data, enabling researchers to identify patterns relevant to the research focus (Sintadevi et al., 2024). Through this approach, qualitative data sourced from article texts can be converted into quantitative form, for example by counting the frequency of occurrence of similar themes or terms. The final stage of the analysis was carried out by calculating the frequency and percentage of occurrence of each group of keywords, thereby obtaining an overview of current research trends and directions in the topic under review.

RESULTS AND DISCUSSION

Results

This study analyzed 20 articles relevant to the research questions and objectives (Table 2). The articles were sourced from ten different journals, namely: Journal of Cleaner Production (4 articles), Corporate Social Responsibility and Environmental Management (3 articles), Sustainability (2 articles), International Journal of Environmental Research and Public Health (2 articles), Business Strategy and the Environment, Journal of Business Ethics, Management of Environmental Quality, Environmental Science & Technology, Accounting, Auditing & Accountability Journal, and Journal of Environmental Management, each with one article. Most of the journals are indexed in Scopus Q1. A total of 14 articles were obtained from searches using the keywords green accounting and sustainability reporting, Environmental Accounting, Corporate Social Responsibility (CSR), and 6 articles from the keywords green accounting and environmental accounting. Most articles were published in 2023 (50%) and 2024 (50%). The average citation count is 80, with the lowest being 24 and the highest 250.

Table 3 presents a descriptive overview of the article titles, main research topics, and research methods. There are eight articles using a qualitative-quantitative approach. Research with a quantitative approach was analyzed using regression models, PLS-SEM, fsQCA, and NCA. Meanwhile, research with a qualitative approach was analyzed using content analysis, bibliometric analysis, case studies, and phenomenological interpretive paradigms. Mixed methods used a combination of both analytical tools.

Table 2 Description of journal articles found in the search

First Author Name, Year	Artikel Title	Journal Name	Keywords	Journal Ranking	Number of Citations
Rahman, 2023	The Impact of Green Accounting on Environmental Performance:	Environmental Science and Pollution Research	Green accounting	Q1	87

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	Mediating Effects of Energy Efficiency				
Ratmono, 2024	The role of environmental performance in mediating the relationship between green accounting and corporate social responsibility	Environmental Economics	Green accounting	Q1	52
Roszkowska-Menkes, 2024	True transparency or mere decoupling? The study of selective disclosure in sustainability reporting	Critical Perspectives on Accounting	Sustainability Reporting	Q1	68
Soyombo, 2024	Sustainability reporting in corporations: A comparative review of practices in the USA and Europe	GSC Advanced Research and Reviews,	Sustainability Reporting	Q1	23
Rahman, 2023	Is it the mere female directors or their attributes that matter for the quality of corporate sustainability disclosures?	Business Strategy and the Environment	Sustainability Reporting	Q1	36
Wagenhofer, 2023	Sustainability Reporting: A Financial Reporting Perspective	Accounting in Europe	Sustainability Reporting	Q1	135
Villiers, 2023	How will AI text generation and processing impact sustainability reporting? Critical analysis, a conceptual framework, and avenues for future research	Sustainability Accounting, Management and Policy Journal	Sustainability Reporting	Q1	180
Pizzi, 2023	The digitalization of sustainability reporting processes: A conceptual framework	Business Strategy and the Environment	Sustainability Reporting	Q1	57
Hummel, 2024	An Overview of Corporate Sustainability Reporting Legislation in the European Union	Accounting in Europe	Sustainability Reporting	Q1	260

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Gerged, 2023	Understanding the relationship between environmental management accounting and firm performance: The role of environmental innovation and stakeholder integration – Evidence from a developing country	Management Accounting Research	Environmental Accounting	Q1	74
Ali, 2023	Investigating environmental quality among G20 nations: The impacts of environmental goods and low-carbon technologies in mitigating environmental degradation	Geoscience Frontiers	Environmental Accounting	Q1	49
Tobias, 2024	Time-stratified case-crossover studies for aggregated data in environmental epidemiology: a tutorial	International Epidemiological Association	Environmental Accounting	Q1	67
Mondal, 2024	Enexus of environmental accounting, sustainable production and financial performance: An integrated analysis using PLS-SEM, fsQCA, and NCA	Environmental Challenges	Environmental Accounting	Q1	44
Hong, 2023	Corporate Social Responsibility	Annual Review of Financial Economics	Corporate Social Responsibility (CSR)	Q1	68
Sukmadilaga, 2023	Does Green Accounting Affect Firm Value? Evidence from ASEAN Countries	International Journal of Energy Economics and Policy	Green accounting	Q2	67
Wiredu, 2023	Does green accounting influences ecological sustainability? Evidence from a developing economy	Cogent Business & Management	Green accounting	Q2	61
Dwianika, 2023	Bibliometrics analysis of green accounting research	International Journal of Energy Economics and Policy	Green accounting	Q2	24

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Khamisu, 2024	Environmental social and governance (ESG) disclosure motives for environmentally sensitive industry: an emerging economy perspective	Cogent Business & Management	Environmental Accounting	Q2	46
Chen, 2024	Spatial-Temporal Ship Pollution Distribution Exploitation and Harbor Environmental Impact Analysis via Large-Scale AIS Data	Journal of Marine Science and Engineering	Environmental Accounting	Q2	44
Hidayat, 2024	The Role of Environmental Management Accounting in Mediating Green Innovation to Firm Value: Moderated by Quality Management	International Journal of Energy Economics and Policy	Environmental Accounting	Q2	44

Table. 3 Description of main research topics and research methods

Author Name First, Year	Article Title	Main Topic	Research Method
Rahman, 2023	The Impact of Green Accounting on Environmental Performance: Mediating Effects of Energy Efficiency	The relationship between green accounting, energy efficiency, and environmental performance with energy efficiency as a mediating variable in pharmaceutical and chemical companies in Bangladesh	Quantitative approach using PLS-SEM with a sample of 326 respondents from pharmaceutical and chemical companies
Ratmono, 2024	The role of environmental performance in mediating the relationship between green accounting and corporate social responsibility	The effect of green accounting on environmental performance and CSR disclosure with environmental performance as a mediating variable in public companies in Indonesia	Quantitative approach using secondary data from 95 public companies (2017–2021) with regression/SEM analysis

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Roszkowska-Menkes, 2024	True transparency or mere decoupling? The study of selective disclosure in sustainability reporting	This study discusses the phenomenon of decoupling in corporate sustainability reporting, examining forms of selective disclosure and the factors that influence it.	A quantitative approach using institutional theory and a counter accounting approach.
Soyombo, 2024	Sustainability reporting in corporations: A comparative review of practices in the USA and Europe	A comparative study of differences in sustainability reporting practices between companies in the United States and Europe based on regulations, culture, and reporting frameworks	A qualitative approach through literature review and comparative analysis of sustainability reporting policies
Rahman, 2023	Is it the mere female directors or their attributes that matter for the quality of corporate sustainability disclosures?	This study examines the effect of the presence and characteristics of female directors on the quality of corporate sustainability disclosure (QCSD) in non-financial companies in Pakistan.	A quantitative approach using Ordinary Least Squares (OLS) analysis and panel-corrected standard errors
Wagenhofer, 2023	Sustainability Reporting: A Financial Reporting Perspective	This paper discusses the conceptual differences between sustainability reporting and financial reporting, and examines the incentive effects of mandatory sustainability reporting standards in the European Union, the United States, and the IFRS Foundation.	A qualitative approach through conceptual analysis and policy review

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Villiers, 2023	How will AI text generation and processing impact sustainability reporting? Critical analysis, a conceptual framework, and avenues for future research	This study discusses the implications of using generative AI such as ChatGPT in sustainability reporting. This article examines the benefits, risks, and challenges of text automation in accounting	A conceptual qualitative approach using Alvesson and Deetz's critical framework (insight–critique–transformative redefinition)
Pizzi, 2023	The digitalization of sustainability reporting processes: A conceptual framework	This study discusses the contribution of technological innovation to sustainability reporting quality. It highlights the important role of Sustainable Enterprise Resource Planning (S-ERP) in improving the process and accuracy of environmental information disclosure through digital platforms.	A quantitative approach using Fuzzy Expert System (FES)
Hummel, 2024	An Overview of Corporate Sustainability Reporting Legislation in the European Union	This article discusses the latest developments in sustainability disclosure requirements, with a primary focus on reporting regulations and standards in the European Union. This study outlines and compares various policies such as the Corporate Sustainability Reporting Directive (CSRD), Taxonomy Regulation, Sustainable Finance Disclosure Regulation (SFDR), and Pillar 3 Disclosures, highlighting their implications for researchers and practitioners.	A qualitative approach with comparative analysis and a review of policies for setting sustainability reporting standards in the European Union and international institutions such as the International Sustainability Standards Board (ISSB) and the European Commission.

Gerged, 2023	Understanding the relationship between environmental management accounting and firm performance: The role of environmental innovation and stakeholder integration – Evidence from a developing country	This study discusses the role of Environmental Management Accounting (EMA) in improving company performance, both environmentally and financially. This study also examines the mediating effect of environmental innovation and the moderating role of stakeholder integration in strengthening the relationship between environmental innovation and company performance in SMEs in Pakistan.	A quantitative approach was used with a questionnaire survey of CEOs and financial managers from 204 SMEs in Pakistan.
Baba Ali, 2023	Investigating environmental quality among G20 nations: The impacts of environmental goods and low-carbon technologies in mitigating environmental degradation	This study examines the role of environmental goods and low-carbon technologies in improving environmental quality in G20 countries. It assesses the relationship between green trade, economic growth, foreign investment, and renewable energy consumption on environmental quality, while highlighting the differences in effects between low-carbon technologies and environmental goods.	A quantitative approach with analysis was conducted using the Method of Moment Quantile Regression (MMQR), as well as testing the robustness of the results with Ridge Regression, Driscoll-Kraay standard errors, and Newey-West standard errors. A
Tobias, 2024	Time-stratified case-crossover studies for aggregated data in environmental epidemiology: a tutorial	This article discusses the application of time-stratified case-crossover design in environmental epidemiology to highlight how to adjust for covariates, handle confounders, and test for interaction effects using conditional Poisson regression.	methodological approach using time-stratified case-crossover and analysis using conditional Poisson regression for temporal and spatial covariates.

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Mondal, 2024	ENexus of environmental accounting, sustainable production and financial performance: An integrated analysis using PLS-SEM, fsQCA, and NCA	This study discusses how environmental accounting practices can improve a company's financial performance, both directly and through the mediation of sustainable production in the textile industry in Bangladesh.	A quantitative approach combining Partial Least Squares Structural Equation Modeling (PLS-SEM), fuzzy-set Qualitative Comparative Analysis (fsQCA), and Necessity Condition Analysis (NCA) methods.
Harrison Hong, 2023	Corporate Social Responsibility	This article discusses the latest developments in sustainability disclosure requirements, with a primary focus on reporting regulations and standards in the European Union. This study outlines and compares various policies such as the Corporate Sustainability Reporting Directive (CSRD), Taxonomy Regulation, Sustainable Finance Disclosure Regulation (SFDR), and Pillar 3 Disclosures, highlighting their implications for researchers and practitioners.	This article discusses the latest developments in sustainability disclosure requirements, with a primary focus on reporting regulations and standards in the European Union. This study outlines and compares various policies such as the Corporate Sustainability Reporting Directive (CSRD), Taxonomy Regulation, Sustainable Finance Disclosure Regulation (SFDR), and Pillar 3 Disclosures, highlighting their implications for researchers and practitioners.

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Sukmadilaga, 2023	Does Green Accounting Affect Firm Value? Evidence from ASEAN Countries	This study discusses the phenomenon of decoupling in corporate sustainability reporting.	A quantitative approach using institutional theory and counter accounting.
Wiredu, 2023	Does green accounting influences ecological sustainability? Evidence from a developing economy	The effect of green accounting on ecological sustainability with environmental costs as a mediating variable in pharmaceutical companies in Ghana	Quantitative approach using PLS-SEM (SmartPLS 4)
Dwianika, 2023	Bibliometrics analysis of green accounting research	Analysis of global trends and developments in Green Accounting research, including themes, authors, and international involvement	Bibliometric approach using the Scopus database and VOSviewer tool
Khamisu, 2024	Environmental social and governance (ESG)disclosure motives for environmentally sensitive industry: an emerging economy perspective	This study aims to identify and analyze the factors that motivate companies to disclose Environmental, Social, and Governance (ESG) information, particularly companies that are sensitive to environmental issues in developing countries. This study highlights regulatory pressure, pressure from stakeholders, greenwashing behavior, and ethical considerations as the main drivers of ESG disclosure.	A mixed approach based on a systematic literature review using the PRISMA protocol, followed by the integration of Fuzzy Set Theory and Interpretive Structural Modeling (FISM) to construct a hierarchical model of the relationships between motivational factors, and Fuzzy MICMAC to group these factors.

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Chen, 2024	Spatial-Temporal Ship Pollution Distribution Exploitation and Harbor Environmental Impact Analysis via Large-Scale AIS Data	This study discusses the estimation and spatial-temporal distribution of ship pollution emissions in New York Harbor.	A quantitative approach using the Ship Traffic Emission Assessment Model (STEAM2) and ArcGIS analysis based on Automatic Identification System (AIS) data from ships in New York Harbor in 2022.
Hidayat, 2024	The Role of Environmental Management Accounting in Mediating Green Innovation to Firm Value: Moderated by Quality Management	This study discusses the effect of green innovation on firm value in manufacturing companies in Indonesia, with Environmental Management Accounting (EMA) as a mediating variable and Quality Management as a moderating variable.	A quantitative analysis approach was conducted using EVIEWS 12 software, as well as classical assumption tests in the form of multicollinearity and heteroscedasticity tests.

Based on a review of 20 articles analyzed, research on green accounting and sustainability reporting shows significant developments in the field of modern accounting. In general, these studies seek to examine the relationship between the application of green accounting, environmental innovation, and its impact on the financial and non-financial performance of companies (Gerged et al., 2024; Hidayat et al., 2024; Md. M. Rahman & Islam, 2023). In addition, several studies also highlight the role of sustainability reporting in improving corporate transparency, legitimacy, and accountability amid global demands for sustainable business practices (Hummel & Jobst, 2024; Khamisu et al., 2024; Oluwatobi Timothy Soyombo et al., 2024).

In terms of research methods, the majority of articles used a quantitative approach, accounting for 65% of articles (Ali et al., 2024; Chen et al., 2024; Gerged et al., 2024; Hidayat et al., 2024; Mondal et al., 2024; Pizzi et al., 2024; H. U. Rahman et al., 2024; Md. M. Rahman & Islam, 2023; Ratmono et al., 2023; Roszkowska-Menkes et al., 2024; Sukmadilaga et al., 2023; Tobias et al., 2024; Wiredu et al., 2023). This approach is widely used to test causal relationships between variables such as green accounting, environmental management accounting (EMA), environmental performance, and firm value. The analytical methods applied include Partial Least Squares Structural Equation Modeling (PLS-SEM), multiple linear regression, and Method of Moment Quantile Regression (MMQR). The dominance of this quantitative approach indicates that green

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accounting research still focuses on empirical evidence based on numerical data, resulting in objective and measurable findings.

Meanwhile, around 25% of articles used a qualitative approach (de Villiers et al., 2024; Hong & Shore, 2025; Hummel & Jobst, 2024; Oluwatobi Timothy Soyombo et al., 2024; Wagenhofer, 2024). Research using this approach emphasizes a deep understanding of the social context, regulations, and policies in sustainability reporting. Conceptual issues such as decoupling, greenwashing, and the influence of digital technology and artificial intelligence (AI) adoption on sustainability reporting are the main focus of these studies.

In addition, there is one article with a mixed methods approach (Khamisu et al., 2024), which integrates the Systematic Literature Review (SLR) method with Fuzzy Set Theory, Interpretive Structural Modeling (ISM), and Fuzzy MICMAC. On the other hand, there is one article that uses a bibliometric approach (Dwianika, 2023) which maps global trends in green accounting research through the Scopus database and VOSviewer software. These two approaches enrich the variety of methodologies in environmental accounting research and point towards a multidisciplinary approach.

In terms of research topics, green accounting and environmental or financial performance are the most dominant themes, accounting for 35% (Gerged et al., 2024; Hidayat et al., 2024; Mondal et al., 2024; Md. M. Rahman & Islam, 2023; Ratmono et al., 2023; Sukmadilaga et al., 2023; Wiredu et al., 2023). Research in this group highlights how the application of green accounting contributes to energy efficiency, sustainable innovation, and increased company value. The themes of sustainability reporting and ESG disclosure also stood out at 30% (de Villiers et al., 2024; Hong & Shore, 2025; Hummel & Jobst, 2024; Oluwatobi Timothy Soyombo et al., 2024; Roszkowska-Menkes et al., 2024; Wagenhofer, 2024), which discuss regulations, transparency, and reporting practices across various regions, particularly in Europe and Asia.

Furthermore, two articles examine the role of Environmental Management Accounting (EMA) in strengthening environmental innovation and corporate performance (Gerged et al., 2024; Hidayat et al., 2024), while two other articles focus on digitalization and artificial intelligence (AI) in sustainability reporting (de Villiers et al., 2024; Pizzi et al., 2024). The other two articles discuss sustainability reporting regulations in the European Union (Hong & Shore, 2025; Hummel & Jobst, 2024), while one article highlights a bibliometric analysis of green accounting (Dwianika et al., 2024) and another article provides a technical study of spatial-temporal environmental pollution (Chen et al., 2024).

Overall, the results of this review show that research in the field of green accounting and sustainability reporting in the modern era is still dominated by empirical approaches with an orientation towards testing the relationship between variables. However, the latest trends show an expansion of focus towards conceptual, policy, and digitalization issues in reporting, signaling a paradigm shift towards sustainable

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accounting that is adaptive to technological developments and global environmental demands.

Discussion

The dominance of quantitative approaches in the literature reviewed reflects the positivistic paradigm that remains strong in accounting research. This approach plays an important role in establishing empirical validation of the relationship between variables, but has the potential to ignore the contextual and social aspects inherent in green accounting practices. Conversely, qualitative research, which is more limited in number, makes an important contribution to understanding the motivations, values, and institutional pressures that drive the adoption of sustainability reporting by business entities.

Phenomena such as greenwashing and decoupling show that sustainability reporting does not always reflect actual environmental performance. In this context, the qualitative approach has a strategic role in examining the integrity of the sustainability information presented by companies and identifying the gap between symbolic commitments and substantive practices.

In addition, the emergence of digitalization and artificial intelligence (AI) in sustainability reporting shows a new direction in accounting research in the modern era. Technological innovations such as AI-based reporting systems, Sustainable Enterprise Resource Planning (S-ERP), and automated disclosure tools are seen as capable of improving the accuracy, efficiency, and transparency of reporting. However, these developments also pose new challenges related to ethics, data security, and algorithmic bias that need to be addressed in future research.

Therefore, green accounting and sustainability reporting research needs to move in a more integrative direction, not only emphasizing financial and environmental measurement aspects, but also considering social, ethical, and technological dimensions as part of holistic modern accounting practices.

Research Implications

The results of this study have several important implications for the development of accounting theory and practice in the modern era, while also providing direction for further research in the field of green accounting and sustainability reporting, as follows:

- 1) Integration of a multidisciplinary approach.

Future research needs to combine accounting, management, technology, and environmental perspectives into a single integrated analytical framework. A multidisciplinary approach will help explain the complex relationship between corporate social responsibility, financial performance, and environmental sustainability.

- 2) Strengthening qualitative and critical research.

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Future studies need to increase the use of qualitative methods, case studies, and critical discourse analysis to understand the social and cultural contexts that influence green accounting practices. This approach also has the potential to reveal the dynamics of power and legitimacy in sustainability reporting that are not accessible to quantitative analysis.

3) Exploration of the impact of digitalization and AI.

Along with digital transformation in the business world, future research needs to examine the impact of digital technology, big data, and artificial intelligence on the accountability, transparency, and integrity of sustainability reporting.

4) Expansion of geographical and sectoral contexts.

Current research still focuses heavily on public companies in Asia and Europe. Therefore, cross-country and cross-sector studies are needed to gain a better understanding.

yang lebih komprehensif tentang implementasi akuntansi hijau di berbagai konteks ekonomi dan regulasi.

5) Longitudinal and experimental approaches.

Future research should use longitudinal designs to track changes in the implementation of green accounting over time, as well as experimental approaches to test the effectiveness of policies and interventions related to sustainability reporting.

Conclusion

Based on a systematic review of 20 articles, research on green accounting and sustainability reporting has shown rapid development in the last two years, in line with the increasing attention to global sustainability issues. Most studies are still oriented towards quantitative approaches to test the empirical relationship between green accounting practices, environmental performance, and company value. This indicates that green accounting research is still within the positivistic paradigm framework that emphasizes proving causal relationships based on statistical data. However, the emergence of qualitative and conceptual research marks a shift towards a more comprehensive understanding, which not only measures financial and environmental performance but also examines the social and ethical values of companies.

Furthermore, the development of digitalization and the application of artificial intelligence (AI) opens up new opportunities for more efficient, transparent, and accurate sustainability reporting practices. However, these advances also pose new challenges in terms of ethics, data validity, and information security. Therefore, further research is needed that can integrate technological, social, economic, and environmental aspects into the modern green accounting framework.

Overall, this study confirms that green accounting and sustainability reporting have evolved into important elements in contemporary accounting systems. To strengthen their contribution to sustainable development, future applied research needs to be directed towards multidisciplinary integration, strengthening qualitative and longitudinal methodologies, and examining the implications of digitalization in

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environmental reporting governance. Thus, accounting in the modern era not only functions as a financial reporting tool, but also as a strategic means of achieving global economic and social sustainability.

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