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Green Accounting: A Systematic Review

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Abstract

Green accounting is considered an important tool related to aspects of the influence of the natural environment on the economy and is considered a transformation towards sustainable development, towards economic development. Green tea. This is also a new and long-term approach, consistent with the general development trend in the world. The application of green accounting, especially environmental accounting, contributes to providing accurate, transparent, complete and responsible information, thereby helping to improve the image of businesses in the eyes of regulators and shareholders, investors and business partners. The purpose of this study is to systematize previous research

on green accounting, make statistics, evaluate according to authors, the most influential research articles in green accounting research. Research data was collected and analyzed from Google Scholar data on VOSviewer 1.6.19 software with 500 articles for the keyword "green accounting" filtered in summary form. The results show that research on green accounting in the past 10 years has always been a topic of interest and investigation by researchers. The study also identifies the most influential authors according to the number of articles and citations. The research results have contributed to the systematic synthesis of research documents on green accounting.

Keywords: Green Accounting, Vosviewer

1. Introduction

Lako, A. (2018) ^[3] has researched about Conceptual framework of green accounting. He constructed the Conceptual Framework of Green Accounting. The construction is intended to assist the government, especially the Financial Accounting Standards Board (FASB), corporate and other entities in the preparation of Green Accounting Standards and the application of Green Accounting practices. The construction includes the nature of Green Accounting, the Green Accounting Conceptual Framework, the Green Accounting Principles and the Green Accounting Report model.

Chasbiandani, T., Rizal, N., & Satria, I. I. (2019) ^[1] had researched about Penerapan Green Accounting Terhadap Profitabilitas Perusahaan Di Indonesia. The purpose of this study was to examine the effect of green accounting and environmental performance on company profitability. Green accounting and environmental performance as an accounting benchmark for corporate awareness and concern for an increasingly old earth. This study uses a sample of 58 manufacturing companies listed on the Indonesia stock exchange in 2017 and 2018 on the basis of an assessment of PROPER. Data were analyzed using panel data analysis with the help of eviews program. The results of this study indicate that green accounting and environmental performance have a positive effect on company profitability.

Ningsih, W. F., & Rachmawati, R. (2017) ^[4] had researched about Implementasi Green Accounting dalam meningkatkan kinerja perusahaan. The purpose of this paper was to discuss how the implementation of green accounting in improving environmental performance and financial performance. Based on the discussion, it was known that the implementation of green accounting had a positive impact on environmental performance. Improved environmental performance was due to the willingness of companies to comply with government policies and regulations as well as consumer demand for a product that is environmentally friendly. In addition, the implementation of green accounting also affects the company's improved financial performance. With the increase in positive perception of society will increase the loyalty of the people against the company, which in turn was followed by an increase in the sales and profits company. Currently in Indonesia disclosure regarding environmental accounting still not specifically regulated in accounting standards, reporting environmental information in the annual reports of companies is voluntary. Therefore, in this paper, it is advisable for companies to implement green accounting. In the future, the challenge for the Indonesian Institute of Accountants to seek their statements of assets and liabilities as part of the required environment (mandatory) in the financial statements, particularly for industries that are

sensitive to issues of environmental destruction.

Dura, J., & Suharsono, R. (2022) ^[2] had researched about Application green accounting to sustainable development improve financial performance study in green industry. The research of this study was to determine the impact of green accounting on sustainable development and financial performance, as well as the impact of financial performance on sustainable development and green accounting on sustainable development through financial performance. In this study, the population was a manufacturing company that implements the green industry and is registered with the Indonesian Stock Exchange between 2017 and 2020. Purposive sampling was used to acquire data from 39 different companies. Path analysis was performed to analyze the data. Green accounting hurts sustainable development, green accounting has no impact on financial performance, financial performance has no impact on sustainable development, and green accounting has a financial performance impact on sustainable development.

Therefore, this study helps readers grasp the development and information quality of financial autonomy in public universities through the frequency of keyword use, number of citations and number of times. Authors are cited from time to time. At the same time, it helps future researchers know the trends of this topic over time.

2. Green Accounting Conceptual Framework

Concept of green accounting

Green Accounting is the process of recognizing, measuring value, recording, summarizing, reporting and disclosing information on objects, transactions, events or impacts of corporate economic, social and environmental activities on society and the environment and the corporation itself in an integrated accounting information reporting package that can be useful for users in economic and non-economic decision making. Based on these definitions, the goals of Green Accounting and Reporting of Green Accounting Information are to present financial accounting information (economic), social accounting information and environmental accounting information in an integrated manner in an accounting reporting package so that stakeholders can use it in valuation and investment decision making economic, managerial and others. The goal is that users, namely management, shareholders, creditors, customers, consumers, employees, the government and the wider community, can evaluate and assess in full regarding financial position and business performance, corporate risks, business growth prospects and the performance of corporate profits, as well as corporate sustainability before taking a final economic and non-economic decision. In addition, stakeholders can fully know accounting information about management quality in managing socially and environmentally responsible businesses as the main prerequisites that determine the sustainability of business growth and corporate profits in the long run. In short, Green Accounting and reporting of green accounting information, besides having an important and strategic role for external parties in economic and non-economic valuation and decision making, also play an important role for management and employees in performance appraisal and managerial decision making and taking actions operations to encourage corporations to grow in performance and value. Green accounting information also plays an important role in determining policies by the government and other parties,

as well as being an effective "communication language" to educate and increase management and stakeholders' awareness of the importance of caring for social and environmental responsibility to the community and the environment.

Qualitative Characteristics of Green Accounting Information

- Users of accounting information are stakeholders, namely management, shareholders, investors or owners, creditors, suppliers, consumers, employees, the government and the wider community who have direct or indirect interests with corporate entities.
- Green accounting information constraints are a comparison of the cost-benefit, cost and effort (effort-accomplishment), materiality of information presented (materiality) and disclosure of integrated quantitative and qualitative accounting information (integrated disclosure).
- The specific and pervasive requirements needed by users of accounting information (user-specific qualities and pervasive criterion) is that accounting information presented to the users must be understood (understandability) and useful in the assessment and decision making of economic and non-economic (decision usefulness). The main criteria or requirements in presenting green accounting information are: 1) integrated and accountable, namely accounting information presented in green accounting reporting must take into account, integrate and account for all integrated financial, social and environmental accounting information in one reporting package; 2) relevant (relevance), that is, the information presented must be relevant to the needs of the users in the assessment and decision making (decision usefulness). Therefore, the accounting information presented must have feedback value and predictive value, and be presented on time (timeliness); 3) reliable, namely the accounting information presented must be reliable or reliable so that it is reliable and useful for users in the assessment and decision making of economic and non-economic conditions. For this reason, the accounting information presented must be verifiable, valid, accurate and neutral; 4) transparent (transparency), namely accounting information must be presented transparently and honestly; and 5) comparability, that is, accounting information presented has comparability between periods and is presented consistently from time to time (consistency). In addition to fulfilling the qualitative characteristics above, there are three specific qualitative characteristics of green accounting information that are very useful in evaluating, evaluating user decision-making (primary decision-specific qualities). First, accountability, namely accounting information presented takes into account all aspects of the entity's information, especially information relating to the economic, social and environmental responsibilities of the entity and the cost-benefits of the impacts. Second, integrated and comprehensive namely accounting information presented is the result of integration between financial accounting information with social and environmental accounting information that is presented comprehensively in one accounting reporting package. Third, transparency is that integrated accounting

information must be presented honestly, accountably and transparently so as not to mislead parties in evaluating, evaluating and making economic and non-economic decisions.

3. Research methods

The author synthesizes previously published literature reviews related to green accounting from data sources on Google Scholar. The review studies will aim to explain the urgency of the research and point out gaps in the research. The author used VOSviewer 1.6.19 software to filter data with the keyword "green accounting" filtered in the summary of the Google scholar database, accessed February 10, 2024. As a result, there are 447 related articles in the list selected from 500 articles. The collected data is intended to be used to analyze and answer the following research questions:

- Q1: Research on green accounting from 2014 to December 2023.
- Q2: Most influential authors by number of articles and number of citations in green accounting publications.
- Q3: What topics are the keywords used grouped into?

4. Results

Published statistics on green accounting

From 2014 to 2023, the authors searched under the condition of returning a maximum of 500 articles, and there were 447 articles on green accounting indexed in Google Scholar. The authors have excluded articles that are books and citations. An average of 44.7 articles are published each year. That shows that the issue of green accounting is still a concern of researchers today.

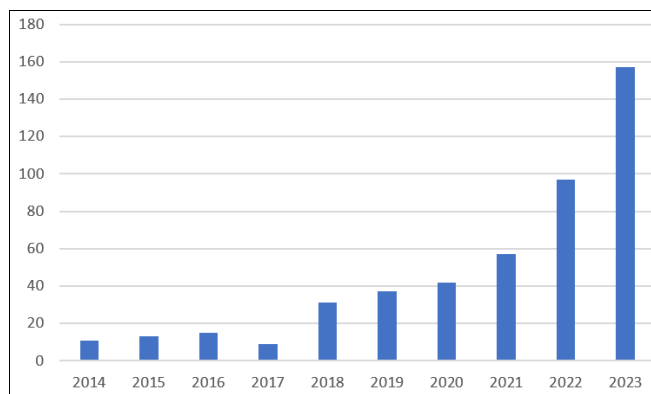


Fig 1: Chart of the number of studies over the years

Statistics on the most influential authors in green accounting research

To evaluate the most influential authors in green accounting research, we consider the number of article citations (Table 1), the number of articles by authors (Table 2).

Highest citation according to documents

Table 1 shows the number of citations in articles by the author group BK Dhar, SM Sarkar, FK Ayitney (2022) Impact of social responsibility disclosure between implementation of green accounting and sustainable development: A study on heavily polluting companies in Bangladesh with the number the most citations (232 times), followed by MM Rounaghi (2019) "Economic analysis of using green accounting and environmental accounting to identify environmental costs and sustainability indicators" with 138 citations. E Sulistiawati, N Dirgantari (2016)

"Analisis Pengaruh Penerapan Green Accounting Terhadap Profitabilitas Pada Perusahaan Pertambangan Yang Terdaftar Di Bursa Efek Indonesia" has 133 citations. The remaining articles have all been cited more than 50 times.

Table 1: Frequency of the highest citation by documents

Documents	Cites
BK Dhar, SM Sarkar, FK Ayitney (2022)	232
MM Rounaghi (2019)	138
E Sulistiawati, N Dirgantari (2016)	133
H Zulhaimi (2015)	105
AM Putri, N Hidayati, M Amin (2019)	103
D Zatira, E Suharti (2022)	99
P Letmathe, RK Doost (2018)	93
H Maama, KO Appiah (2019)	91
T Chasbiandani, N Rizal, II Satria (2019)	85
M Angelina, E Nursasi (2021)	83
VD Rosaline, E Wuryani (2020)	75
JC Tu, HS Huang (2015)	74
WF Ningsih, R Rachmawati (2017)	73
KW Kapp (2018)	69
I Endiana, NLGM DICRIYANI... (2020)	69
BSQ Faizah (2020)	63
D Mariani (2017)	59
SR Dewi (2016)	55

Source: Authors compiled from VOSviewer software

The highest documents by authors

Table 2: Highest number of articles by each author

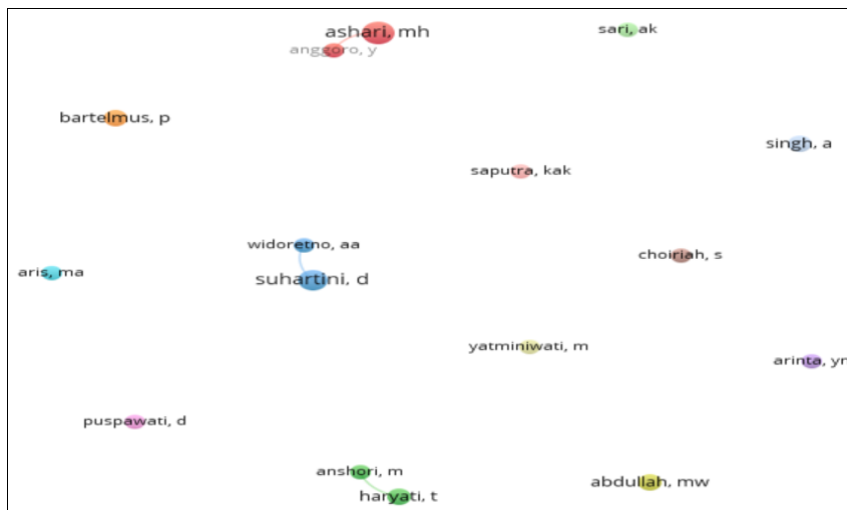
Selected	Author	Documents
<input checked="" type="checkbox"/>	anggoro, y	3
<input checked="" type="checkbox"/>	anshori, m	3
<input checked="" type="checkbox"/>	ashari, mh	7
<input checked="" type="checkbox"/>	haryati, t	4
<input checked="" type="checkbox"/>	suhartini, d	6
<input checked="" type="checkbox"/>	widoretno, aa	3
<input checked="" type="checkbox"/>	abdullah, mw	4
<input checked="" type="checkbox"/>	arinta, yn	3
<input checked="" type="checkbox"/>	aris, ma	3
<input checked="" type="checkbox"/>	bartelmus, p	4
<input checked="" type="checkbox"/>	choiriah, s	3
<input checked="" type="checkbox"/>	puspawati, d	3
<input checked="" type="checkbox"/>	saputra, kak	3
<input checked="" type="checkbox"/>	sari, ak	3
<input checked="" type="checkbox"/>	singh, a	4
<input checked="" type="checkbox"/>	yatminiwati, m	3

Source: Authors compiled from VOSviewer software

Statistics of authors with the most articles on green accounting are Ashari.T with 7 articles, Suhartini.D with 6 articles, the remaining authors have 3 to 4 articles on green accounting.

Co-authorship analysis

To explore the trend of collaboration in green accounting research, this study conducted an analysis of co-authorship relationships between individual authors. According to Benoit *et al.* (2018), the analysis results help improve understanding of research collaboration and help discover influential researchers. Fig 2 presents a map of the co-authorship network. The link between two nodes represents the collaborative relationship between the two authors, and the thickness of the link represents the intensity of the collaboration. The group of authors who cooperate most closely are the authors shown in the figure below. This is a collaborative group that has published many articles over the years.



Source: Authors compiled from VOSviewer software

Fig 2: Co-authorship network

Keyword analysis results

In the keyword analysis section, research and select keywords that appear 20 times or more. Keywords are evaluated by the software based on the number of

occurrences and total link strength. Keyword analysis results can be exported into files as images. The keyword analysis results are as follows:

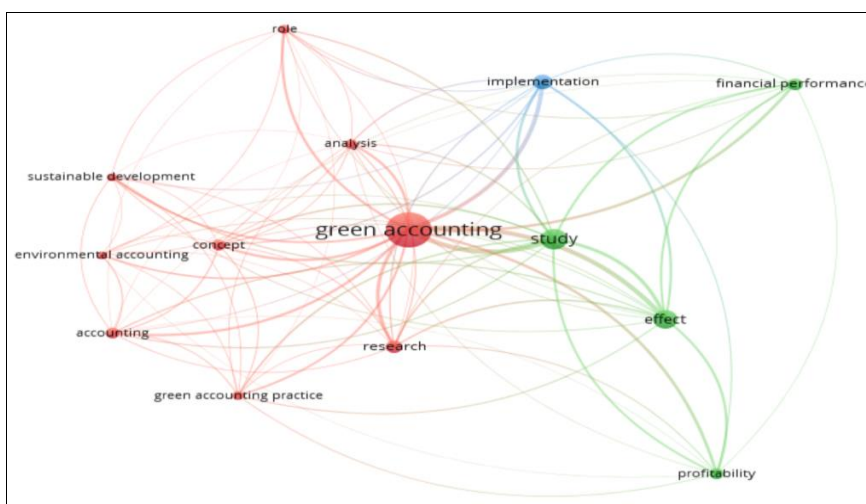


Fig 3: Keyword Co-occurrence networks

Related keywords are grouped into groups, each group is a separate color. Looking at the image, it can be seen that the keywords are divided into 3 groups. Group 1 is represented by red links, combined by 9 keywords including accounting, analysis, concept, environmental accounting, green accounting, green accounting practice, research, role, sustainable development with the central keyword "green accounting" with 13 links and total link strength of 725, this keyword appears 422 times. Group 2 is represented by green links combined by 4 keywords: Effect, financial performance, profitability, study, in which the central keyword is "study" with 13 links and a total of the total link strength is 388 and appears 151 times. Group 3 is represented by blue links including the keyword implementation with 11 links and total link strength of 203, appearing 81 times. With 3 research directions and 14 popular keywords, the results show an overall view of green accounting issues. Future studies can base on that to choose research directions to fill the gap, or analyze more deeply.

5. Conclusion

In this study, we performed a systematic review of green accounting studies indexed in the Google Scholar database. These studies were published in the last 10 years from 2014 to 2023 to provide detailed information about the number of publications, author citation frequency as well as research citations, keyword networks. The research results have contributed to the general theoretical basis, serving as a basis for reference studies on green accounting. Data collected from richer sources such as Scopus and OpenAlex are also suggestions for further research in the future.

6. References

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