

Environmental, Social, and Governance (ESG) in Indonesia: Insights from Bibliometric Analysis

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Abstract: The implementation of Environmental, Social, and Governance (ESG) criteria is gaining momentum worldwide and in Indonesia. Unlike green financing, which focuses on environmental projects, or climate terminology that often pertains to carbon emissions and climate change mitigation, ESG encompasses a broader spectrum, including social equity and corporate governance issues for a holistic sustainability strategy. This research analyzes the classification, trends, and potential future directions of ESG (Environmental, Social, and Governance) studies in Indonesia. Utilizing the robust and reliable Scopus database, combined with tools such as Publish or Perish, Mendeley, and VOSviewer, this paper examines the keyword “ESG” and “Indonesia” from 2018 to 2024. The findings indicate that research related to this keyword can be categorized into three main clusters: the role of ESG, country-based ESG comparisons, and ESG during the pandemic. Currently, trending topics include the role of ESG, strategy, government policies, and financial performance. However, there is a limited amount of literature on specific topics that present opportunities for future research, such as ESG factors, investment decisions, corporate social responsibility, climate change, and competitive advantage. Additionally, there are research gaps that could be explored further, such as the relationship between ESG activities and investment decisions, or climate change and sustainable development.

Keywords: bibliometric analysis, Publish or Perish, VOSviewer, ESG

1. INTRODUCTION

Globally, societies are currently confronting similar conditions and an array of challenges. These issues include global warming and climate change, environmental degradation, and increasingly complex social problems. These are some of the negative impacts stemming from development and economic growth. This shared global experience underscores the urgent need for collaborative efforts to mitigate these detrimental effects and foster sustainable development practices. Efforts to advance the economy are implemented through the enhancement of industrial activities and energy utilization, which negatively impact the environment and result in health issues, as evidenced by Turner et al. (1994), Margono et al. (2014), WHO (2016), and Tietenberg and Lewis (2016). Furthermore, economic development also leads to various new social problems within society, highlighted by Stiglitz (2012) and Piketty (2014). This dual consequence underscores the complex interplay between economic progress and sustainable development, necessitating a balanced approach that promotes economic vitality while mitigating environmental degradation and social upheaval. The challenge lies in devising strategies that harmonize industrial growth with ecological preservation and social welfare, ensuring a holistic advancement for future generations. In light of the issues mentioned earlier, various movements and ideas have emerged to address these challenges. One such effort is the adoption of Environmental, Social, and Governance (ESG) principles in corporate activities. This term gained popularity after the UN Global Compact Initiative’s “Who Cares Wins” report introduced the concept. Unlike the “green” concept or terms related to “climate change” that focus mainly on environmental aspects, ESG also highlights social responsibility and good governance. These are essential components of sustainable development, alongside environmental and economic factors (UNDP, 2023) as can be seen on Figure 1.

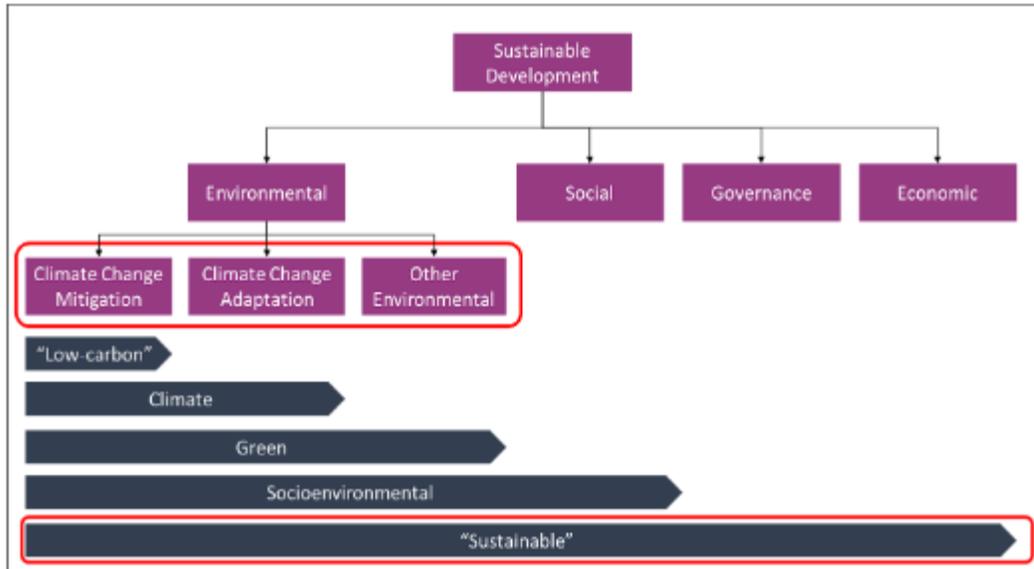


Figure 1. Role of ESG in Sustainable Development

There is now a substantial body of literature addressing the implementation of Environmental, Social, and Governance (ESG) principles from the perspectives of investors, governments, and corporations. Furthermore, discussions on ESG have been extensively conducted both globally and within specific sectors. To effectively analyze the application of ESG, it is imperative to undertake a comprehensive and systematic literature review. One valuable method for this purpose is bibliometric analysis, which assesses the impact and influence of scientific publications based on citation data. This analysis identifies new trends in how articles and journals are performing, understand collaboration patterns and key research contributors, and explore the intellectual framework of a specific field within the existing literature (Donthu, et.al., 2021). Thus, bibliometric analysis can help identify research trends, collaboration patterns, scientific networks, and knowledge gaps. Generally, bibliometric analyses that have been published are more often related to the global implementation of ESG such as Khurshid and Islam (2024) who discuss the ESG literature mapping. However, to the best of our knowledge, there is no literature which discuss bibliometric analysis on ESG application in Indonesia. Therefore, this research fills that gap by conducting a bibliometric analysis of articles related to ESG in Indonesia, with the aim of classifying, identifying trends, and analyzing potential research topics on ESG in Indonesia for the future.

2. LITERATURE REVIEW

This research employs the methodology of bibliometric analysis, which is an integral part of a comprehensive literature review. Bibliometric analysis involves examining the relationships between various reported physical units, bibliographic units, and their substitutes (Broadus, 1987). This methodological approach can reveal the accuracy and relevance of aspects related to scientific publications, such as authors, recurring keywords, and citations (Rusly, et al., 2019). By transforming qualitative informative data into quantitative data, bibliometric analysis allows for a detailed assessment of the strength and impact of research studies and their topics (Baraibar-Diez et al., 2020). Bibliometric analysis is particularly useful for analyzing journal articles, books, and other written scientific documents (Heersmink et al., 2010). It provides a systematic way to measure and evaluate the influence of these publications within the scientific community. This method can uncover patterns and trends in research, helping to identify key areas of focus and emerging topics within a specific field.

This bibliometric analysis encompasses two main aspects: performance analysis and science mapping analysis. Performance analysis is based on bibliometric indicators that measure the productivity and impact of individual

researchers, institutions, countries, and journals. It evaluates the number of publications and citations to determine the influence and reach of these entities within the scientific community. This aspect of bibliometric analysis helps to highlight the most prolific and impactful contributors to a particular field of study. Science mapping analysis, on the other hand, represents the topological and chronological arrangement of cognitive and social structures within a specific research discipline (Cobo et al., 2012). This type of analysis provides a visual representation of the relationships and connections between different research topics, authors, and institutions. It helps to identify the intellectual structure of a field, showing how various concepts and ideas are interconnected. Science mapping can also reveal the evolution of research trends over time, highlighting shifts in focus and emerging areas of interest. The objective of bibliometric analysis is to summarize bibliographic data to present the latest developments in the structure of knowledge and research trends on specific topics (Donthu et al., 2021). By providing a comprehensive overview of the existing literature, bibliometric analysis can identify gaps in knowledge and suggest potential directions for future research. This method is invaluable for researchers, policymakers, and practitioners who seek to understand the current state of research in a particular field and to make informed decisions based on this understanding.

3. METHOD

Fahimnia et al. (2015) proposed a comprehensive framework for bibliometric analysis, delineating five critical stages:

1. initial search;
2. presentation of initial search results,
3. refinement of search results,
4. presentation of statistical descriptions of the final search results, and
5. data analysis.

This research adheres to these stages meticulously, employing the “Publish or Perish” application in conjunction with the Scopus database. The “Publish or Perish” application is a sophisticated tool designed to retrieve and analyze academic citations. It leverages multiple data sources to gather raw citation data, which it then processes to present a variety of citation metrics, including the number of papers, total citations, and the h-index (Harzing, 2023).

In this study, we utilized data from Scopus, a comprehensive abstract and citation database introduced by Elsevier in 2004 (Baas et al., 2020). Scopus is renowned for its extensive content coverage, encompassing a wide range of disciplines and providing detailed information on authors and their affiliations. Its user-friendly interface, robust impact indicators, and resistance to data manipulation make it an ideal choice for bibliometric analysis (Pranckute, 2021). The selection of Scopus as the primary data source is aligned with the stringent requirements of bibliometric analysis, which demands high-quality information and reliable citation data (Bosi et al., 2022).

The initial search phase involves identifying relevant literature using specific keywords and search criteria. This is followed by the presentation of initial search results, where the retrieved data is organized and displayed for preliminary review. The refinement stage entails narrowing down the search results to exclude irrelevant or redundant entries, ensuring that the final dataset is both comprehensive and focused.

Subsequently, the presentation of statistical descriptions of the final search results provides a quantitative overview of the dataset. This includes metrics such as publication counts, citation frequencies, and the distribution of research outputs across different journals and institutions. Finally, the data analysis phase involves a detailed examination of the refined dataset to uncover patterns, trends, and insights related to the research topic.

By following these stages, this research aims to provide a thorough and systematic bibliometric analysis of ESG-related literature in Indonesia. The insights gained from this analysis will help identify key research trends, collaboration patterns, and knowledge gaps, thereby contributing to the advancement of ESG research in the region.

4. RESULT AND DISCUSSION

When conducting a Scopus search using the “Publish or Perish” application, we utilized the keyword “ESG” and “Indonesia” to identify relevant literature concerning the implementation of ESG principles in Indonesia. In the initial stage, no limitations were applied regarding the year of publication. Consequently, the results encompass all literature related to the implementation of ESG in Indonesia or any relevant studies on ESG in Indonesia, without any time constraints. The initial search yielded 98 papers that met the criteria as listed in Table 1.

Table 1. Result of Initial Search

<i>Type of Document</i>	<i>Number of Document</i>
Journal Articles	63
Book Chapters	6
Conference Papers	24
Review Articles	5

However, it is important to note that the acronym ESG can also refer to other technical terms such as Environmental Safe Guard and Ecological Species Group. Therefore, we excluded any literature where ESG did not pertain to Environmental, Social, and Governance.

In the third stage, after filtering out irrelevant literature, we were left with 83 papers that specifically addressed ESG topics in Indonesia as shown in Table 2.

Table 2. Result of Refinement Search

<i>Type of Document</i>	<i>Number of Document</i>
Journal Articles	56
Book Chapters	5
Conference Papers	18
Review Articles	4

A list of the 10 most cited papers among the 83 relevant documents on ESG in Indonesia as shown on Table 3.

Table 3. List of the 10 Most Cited Papers

<i>Authors</i>	<i>Title</i>	<i>Years of Publication</i>	<i>Cites</i>
Qoyum, A., Sakti, M.R.P., Thaker, H.M.T., & AlHashfi, R.U.	Does the islamic label indicate good environmental, social, and governance (ESG) performance? Evidence from sharia-compliant firms in Indonesia and Malaysia	2022	41
Chairani, C. & Siregar, S.V.	The effect of enterprise risk management on financial performance and firm value: the role of environmental, social and governance performance	2021	30
Gunawan, J., Permatasari, P., Sharma, U.	Exploring sustainability and green banking disclosures: a study of banking sector	2022	29
Singhania, M., Saini, N.	Quantification of ESG Regulations: A Cross-Country Benchmarking Analysis	2022	28
Khalil, M.A., Khalil, R., Khalil, M.K.	Environmental, social and governance (ESG) - augmented investments in innovation and firms' value: a fixed-effects panel regression of Asian economies	2024	26
Harymawan, I., Nasih, M., Agustia, D., Putra, F.K.G., Djajadikerta, H.G.	Investment efficiency and environmental, social, and governance reporting: Perspective from corporate integration management	2022	25
Harymawan, I., Putra, F.K.G., Fianto, B.A., Wan Ismail, W.A.	Financially distressed firms: Environmental, social, and governance reporting in indonesia	2021	25
Adeneye, Y.B., Kammoun, I., Ab Wahab, S.N.A.	Capital structure and speed of adjustment: the impact of environmental, social and governance (ESG) performance	2023	20
Fuadah, L.L., Mukhtaruddin, M., Andriana, I., Arisman, A.	The Ownership Structure, and the Environmental, Social, and Governance (ESG) Disclosure, Firm Value and Firm Performance: The Audit Committee as Moderating Variable	2022	17
Qoyum, A., Al Hashfi, R.U., Zusryn, A.S., Kusuma, H., Qizam, I.	Does an Islamic-SRI portfolio really matter? Empirical application of valuation models in Indonesia	2021	17

The next step involves presenting the statistical data from the final selection. The final search results using the keywords “ESG” and “Indonesia” with the Publish or Perish application from the Scopus database for publications from 2018 to 2024 yielded a total of 83 articles, as shown in Figure 2. From this figure, we can also observe that research on ESG is becoming increasingly popular, as evidenced by the significant rise in the number of papers on the topic.

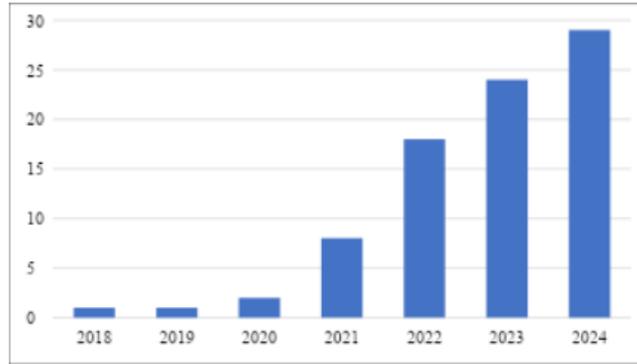


Figure 2. Number of Publication per Year

The subsequent analysis employs the VOSviewer application, a sophisticated tool for classifying scientific publications and analyzing clustering results (van Eck & Waltman, 2017). The initial step involves extracting data from the titles and abstracts of 83 articles using VOSviewer. During the data extraction process, a minimum occurrence threshold of 5 was set, meaning that a word must be mentioned in at least 5 articles to be considered. Out of the 2235 terms identified in the titles and abstracts of 83 papers, 71 terms met this threshold. From these 71 terms, only the top 60% of the most relevant terms were selected, resulting in 43 terms being deemed relevant for the bibliometric analysis of ESG.

The bibliometric analysis conducted with VOSviewer generates three types of visualizations: network visualization, overlay visualization, and density visualization. The primary objective of this research, which is to analyze the classification of studies on ESG in Indonesia, is illustrated through the network visualization results. Figure 3 presents the network visualization mapping. Interrelated keywords are depicted in three distinct colors, each representing a different cluster. VOSviewer automatically maps the visualization of 83 research articles into three clusters or classifications.

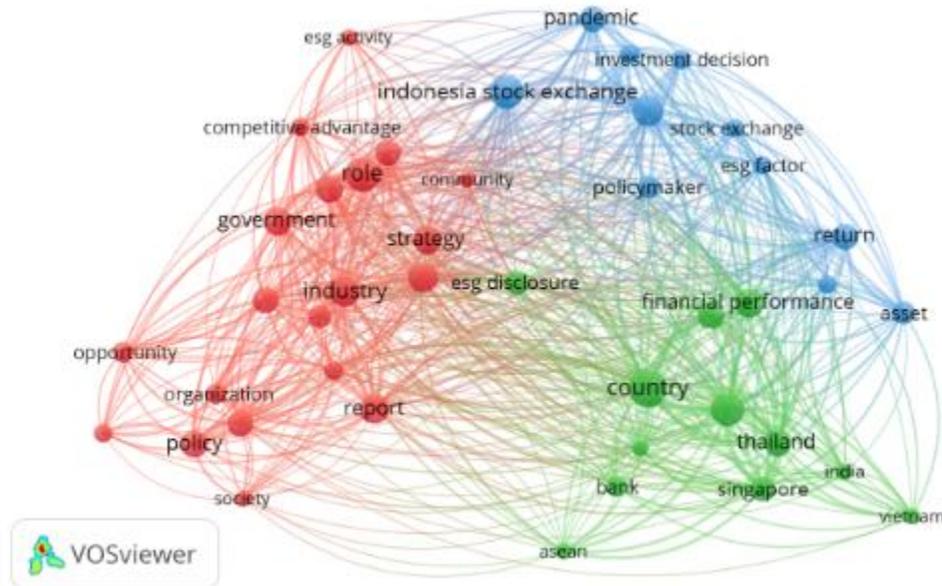


Figure 3. Result of Network Visualization Analysis

Twenty keywords form the first cluster (red): business, climate change, community, competitive advantage, corporate social responsibility, development, ESG activity, firm value, framework, government, industry, management, opportunity, organization, policy, report, role, society, strategy, and sustainability report. The keyword “role” has the highest occurrence in this cluster, appearing 22 times. This indicates that the topic “role” is the most researched within the red cluster. Research on ESG in this cluster is heavily related to the role of ESG in various contexts, such as its impact on business practices, community engagement, and corporate strategies. The frequent occurrence of “role” suggests a significant focus on understanding how ESG principles are integrated and operationalized within organizations.

In the second cluster (green), there are 12 keywords: ASEAN, bank, country, ESG disclosure, ESG score, financial performance, India, Malaysia, Singapore, sustainability development, Thailand, and Vietnam. The keyword with the highest occurrence is “country,” appearing 25 times. This cluster highlights the comparative studies of ESG implementation across different countries, particularly within the ASEAN region. The focus on “country” indicates a strong interest in examining how different national contexts influence ESG practices and outcomes. Research in this cluster often explores the variations in ESG disclosure, scoring, and financial performance among countries like India, Malaysia, Singapore, Thailand, and Vietnam, providing valuable insights into regional differences and best practices. In the third cluster (blue), 11 keywords appear: asset, COVID, ESG factor, ESG practice, Indonesia Stock Exchange, investment decision, pandemic, policymaker, return, stock exchange, and sustainability performance. The keywords with the highest frequency are “pandemic” and “COVID,” with a total frequency of 30 times. This cluster is particularly relevant in the context of the recent global health crisis. The high occurrence of “pandemic” and “COVID” reflects the increased attention to how ESG factors and practices have been impacted by and responded to the pandemic. Research in this cluster examines the role of ESG in mitigating the effects of the pandemic on financial markets, investment decisions, and corporate sustainability performance. It also explores the responses of policymakers and the implications for the Indonesia Stock Exchange and other stock exchanges.

In the network visualization, the thickness of the lines indicates the intensity of the relationship between keywords. Thicker lines mean that the keywords appear together more frequently in the same research. For example, “role” and “government” are connected by a thick line, indicating that these two topics are often used together in research. This suggests a strong linkage between the role of ESG and government policies, highlighting the importance of regulatory frameworks in shaping ESG practices. Next, in the second part of the study aimed at identifying research trends related to ESG, the researchers conducted an overlay visualization analysis, as shown in Figure 4. This figure shows that the keywords in yellow (brighter) are more popular in recent research. Based on Figure 4, the most popular current topics are related to the pandemic and COVID. This trend underscores the growing interest in understanding the intersection of ESG and global health crises, and how companies and governments are adapting their ESG strategies in response to such unprecedented challenges.

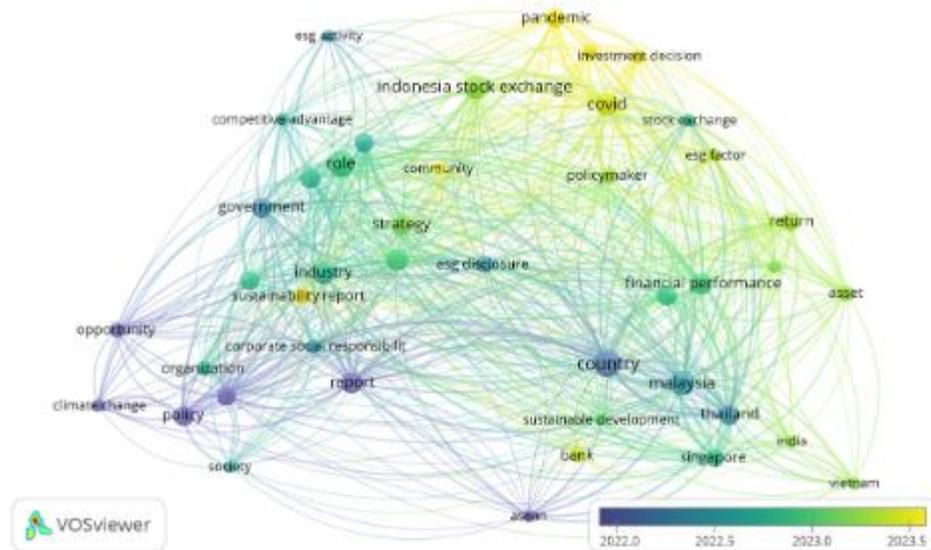


Figure 4. Result of Overlay Visualization Analysis

The third research objective, as depicted in Figure 5, illustrates the results of a density visualization analysis aimed at identifying both popular and less-researched topics within the field. The visualization uses the size and brightness of keywords to indicate their popularity among researchers.

Large and bright keyword visualizations signify that a topic is widely studied and holds significant interest in the research community. For instance, the keyword ‘role’ stands out with the largest and brightest visualization, indicating its prominence. Other keywords that also appear quite large and bright include “financial performance,” “strategy,” “industry,” and “country.” These topics have been extensively explored and are well-established in the literature, reflecting their importance and the substantial amount of research dedicated to them.

On the other hand, small and dim keyword visualizations suggest that a topic has garnered less attention from researchers. For example, keywords like “climate change,” “ESG factor,” and “asset” are depicted with the smallest and dimmest visualizations. This indicates that these topics are not as widely studied and may represent emerging areas of interest or gaps in the current research landscape. Despite their current lower visibility, these topics hold significant potential for future research and development. Researchers might find valuable opportunities in exploring these less conventional choices, contributing to the advancement of knowledge in these areas.

In summary, the density visualization analysis provides a clear picture of the research landscape, highlighting both widely used and underexplored topics. This can guide researchers in identifying areas that are ripe for further investigation and those that are already well-covered, helping to balance the research efforts across different topics.

opportunities associated with ESG in small and medium enterprises (SMEs), which are often overlooked. Recognizing the potential benefits of extending ESG practices to SMEs could lead to more comprehensive and inclusive sustainability efforts. Therefore, it is imperative that future research explores ESG implementation in SMEs to fully understand its impact and to develop tailored strategies that support these smaller businesses in their sustainability journeys. These under-researched areas present valuable opportunities for future studies to contribute to the growing body of knowledge on ESG.

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