

## TREN GLOBAL DAN PROSPEK PENGUNGKAPAN *ENVIRONMENT, SOCIAL, DAN GOVERNANCE DISCLOSURE*: STUDI BIBLIOMETRIK

## GLOBAL TRENDS AND PROSPECTS FOR ENVIRONMENT, SOCIAL, AND GOVERNANCE DISCLOSURE: A BIBLIOMETRIC STUDY

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### ABSTRAK

Artikel ini bertujuan untuk menginvestigasi perkembangan publikasi mengenai *environmental, social, dan governance disclosure* serta menemukan prospek topik pada masa depan. Data diobservasi dari *database* Scopus dengan kata kunci "*environmental, social, and governance disclosure*" OR "*ESG disclosure*". Diperoleh artikel sebanyak 133 dokumen yang terdiri atas artikel, *book chapter, conference paper, editorial, letter, note, dan review* dengan rentang waktu publikasi sejak 2015 hingga 2023. Metode yang digunakan ialah analisis bibliometrik, dengan menggunakan *software R biblioshiny* dan *Microsoft Excel*. Hasilnya ditemukan bahwa perkembangan publikasi setiap tahun cenderung meningkat. Namun, berbanding terbalik dengan sitasi yang cenderung menurun. Secara keseluruhan, mayoritas penulis hanya melakukan satu kali publikasi tema ini. Jurnal yang paling produktif dan memiliki *impact* terbesar ialah *Sustainability* dan penulis yang paling produktif dan memiliki *impact* terbesar ialah Elili. Cina paling banyak korepondensinya. Namun, sitasi terbanyak diperoleh United Kingdom diikuti oleh negara maju lainnya, seperti Italia, Australia, USA, dan Prancis. *Governance approach* merupakan topik yang sering muncul, diikuti oleh *stakeholder, sustainability, dan topik lainnya* yang kemunculannya belum banyak, tetapi masih terhubung dengan tema besar. Topik-topik tersebut diprediksi menjadi topik yang akan dibahas pada masa yang akan datang.

**Kata kunci:** *ESG disclosure, trend, R biblioshiny*

### ABSTRACT

*This article aims to investigate the development of publications regarding environmental, social, and governance disclosures and find prospects for future topics. Data were observed from the Scopus database with the keywords "environment, social, and governance disclosure" OR "ESG disclosure". One hundred thirty-three documents were obtained: articles, book chapters, conference papers, editorials, letters, notes, and*

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*reviews, with a publication period from 2015 to 2023. The method used is bibliometric analysis, using R biblioshiny software and Microsoft Excel. The results found that the development of publications tends to increase every year. However, it is inversely proportional to the situation, which tends to decrease. Overall, the majority of authors have published only once on this theme. The journal that is most productive and has the most significant impact is Sustainability, and the author who is the most productive and has the most significant impact is Elili. China is the one with the most correspondence. However, the United Kingdom received the most citations, followed by other developed countries such as Italy, Australia, USA, and France. The governance approach is a topic that often arises, followed by stakeholders, sustainability, and other topics that have not appeared much but are still connected to the big theme. These topics are predicted to be topics that will be discussed in the future.*

**Keywords:** ESG disclosure, trend, R biblioshiny

## 1. INTRODUCTION

There has been an increasing awareness of the importance of environmental, social, and governance issues in company operations (Özparlak, 2022). Along with increasing public concern about the environment and social impacts of business activities, companies must be socially responsible and manage social and environmental risks that may occur. In this context, ESG disclosures are becoming increasingly important to help companies consider environmental, social, and governance issues in their operations. ESG disclosure can help increase company transparency and accountability and provide complete information about company performance (Giannopoulos et al., 2022).

Companies can leverage ESG to create sustainable long-term value. One of the main issues discussed is how ESG can become a more significant factor in investment decision-making and how companies can adapt their business strategy to keep up with ESG developments (Cho, 2022).

In addition, there is still debate about how ESG should be measured and reported. Some experts criticize the lack of consistent standards and metrics in measuring ESG, thus making comparisons between companies difficult (Kolk & Perego, 2014). Meanwhile, organizations such as the Global Reporting Initiative (GRI) continue to improve their frameworks and standards to help companies report ESG consistently and transparently (GRI, 2021).

On the other hand, more and more investors are integrating ESG factors into their investment decision-making. This encourages companies to pay more attention to ESG issues and report more detailed and accurate ESG information (Dimson et al., 2015). A recent issue that also needs attention is how companies can apply ESG principles consistently in their entire supply chain, from suppliers to customers (Zeng et al., 2022).

Several studies have shown that companies openly disclosing ESG information have better financial performance and higher market values (Almeyda & Darmansya, 2019; Cheng et al., 2014). ESG disclosure can also help companies build a better reputation and increase investor confidence (Ioannou & Serafeim, 2015). However, even though more and more companies are paying attention to ESG issues and reporting ESG disclosures, many challenges are still faced in increasing ESG disclosures consistently and transparently. Some challenges include a lack of standards and frameworks for reporting on ESG and a lack of uniformity and consistency in the metrics and indicators used (GRI, 2021).

Companies with better ESG practices also tend to have lower reputational risks and are more resilient to external shocks (Cheng et al., 2023; Murè et al., 2021). However, there are still challenges in improving the quality and consistency of ESG disclosure, including the lack of consistent standards and metrics for measuring ESG (Kolk & Perego, 2014). Several recent studies have proposed new metrics for measuring ESG, including data-based approaches and machine-learning models (Tao & Gao, 2018). In addition, there is still much to learn about the relationship between ESG disclosure and company performance. Several studies have shown that this relationship can be influenced by context factors, such as the company's industry and geographic location (Hassan et al., 2022).

Regarding current ESG disclosure research, knowing about the latest developments and research trends is very important. ESG disclosure refers to the disclosure of corporate information regarding environmental, social, and corporate governance (ESG) practices. ESG disclosure is increasingly becoming an

important focus for companies due to pressure from society, investors, and regulators to account for company operations' social and environmental impacts.

Previous studies have shown that research on ESG disclosure continues to increase. For example, Climent et al. (2021) explain that companies that carry out ESG disclosure are related to the rate of return the company gets. Then Feng & Wu (2021) explain that the effectiveness of ESG disclosure positively affects company value and can increase company transparency. Reber et al. (2022) found that ESG performance and disclosure can help companies improve their reputation, especially regarding capital from investors after the company is listed on the stock exchange. Then Murata & Hamori (2021) found that disclosing ESG can reduce the risk of falling stock prices in the future.

Meanwhile, McBrayer (2018) highlighted that the quality and variability of ESG disclosure are determined by management tenure. Of course, this is related to management policy in managing the company. For this reason, with increasing awareness and pressure to account for social and environmental impacts, bibliometric research on ESG disclosure continues to grow and find new focuses.

Bibliometric research on ESG disclosure aims to provide an understanding of trends and developments in research in ESG disclosure and the factors that influence ESG disclosure practices. Bibliometric research can provide an overview of the number and trends of scientific publications on ESG disclosure and assist in identifying best practices and factors that influence ESG disclosure practices in companies.

In the context of ESG disclosure, bibliometric research can provide insight into research trends and developments, best practices in disclosing ESG information, and the factors influencing ESG disclosure practices. This can assist in developing policies and best practices for disclosing ESG information and support decision-making at the business and regulatory levels.

Therefore, this study has the following objectives:

1. analyze the trend of ESG disclosure research through publications and citations;
2. analyze the most relevant sources regarding ESG disclosure research;

3. analyze the most relevant authors regarding ESG disclosure research;
4. analyze the most contribute countries regarding ESG disclosure research;
5. analyze the prospects for ESG disclosure research.

## 2. LITERATUR REVIEW

### **Bibliometric**

Bibliometrics is a study that measures and analyzes quantitatively from scientific literature and publications (Waltman & Noyons, 2018). In bibliometric research, the use of information and communication technology (Martins et al., 2022) is important because bibliometric data can be retrieved from various digital data sources, such as journal databases, research websites, and digital libraries (Shaikh & Jana, 2021). In addition, bibliometrics is an important tool for understanding scientific activity when appropriately used, which is why it is important to know the optimal conditions of publication (Bordons & Zulueta, 1999).

The journal impact factor is also an important indicator in bibliometric analysis because this factor calculates the average number of citations from publications in specific journals in a certain period (Kim & Chung, 2018). Bibliometric research will find authors and sources that have a high impact factor. Therefore, this type of research will provide important information for finding authors and sources who play an important role in a particular topic.

Bibliometric software, such as CiteSpace, VOSviewer, and Bibliometrics, are also used in bibliometric research to process and analyze bibliometric data (Kemec et al., 2023). This software can help researchers visualize the relationship between scientific publications and analyze citation patterns in various research fields (Firmansyah, 2021).

However, bibliometric research has several limitations (Okubo, 1997) and challenges. One of the main challenges is identifying proper and accurate citations, especially in citations made outside of journals or books. In addition, bibliometric research is also prone to bias, such as bias in data sources and bibliometric software used (Simko, 2015).

In its development, bibliometric research can be applied to various fields, such as science (Masitoh et al., 2021), technology (Xu et al., 2021), medicine (Manoj Kumar et al., 2022), and social sciences (Chiu et al., 2019; Merigó & Yang, 2017). Therefore, bibliometric research can be used to measure publication trends related to ESG disclosure.

### **ESG Disclosure**

ESG disclosure refers to the disclosure of information relating to environmental, social, and corporate governance (ESG) factors in financial reports and other company reports (Buallay, 2019). ESG disclosure is increasingly important in the modern era because more and more stakeholders are paying attention to the ESG aspect in making investment decisions. After all, it can provide much information (Lopez-De-Silanes et al., 2019).

ESG disclosure can help companies improve financial performance and minimize risks related to ESG factors (Buallay, 2019). Empirical studies show that companies that make environmental disclosures have better financial performance than companies that do not disclose ESG (Chatterji et al., 2007).

However, implementing ESG disclosure still faces challenges, such as a lack of clear and inconsistent standards and guidelines for ESG disclosure (Singhania & Saini, 2023). In addition, companies disclose ESG because they have motives that are influenced by regulations in that country (Lokuwaduge & Heenetigala, 2017).

### **Impact of ESG Disclosure for Companies**

ESG disclosure has a significant impact on the company. First, ESG disclosure can improve a company's financial performance and market value (Al-Jalahma et al., 2020). This can happen because transparent disclosure of ESG information can increase investor confidence and encourage them to make long-term investments (Lopez-De-Silanes et al., 2019).

Second, ESG disclosure can improve the company's reputation and stakeholder relations. According to Hoang et al. (2020), companies committed to

disclosing ESG information transparently can increase public trust and reduce reputational risks that can be detrimental to the company.

Third, ESG disclosure can affect the company's long-term perspective. According to Murata and Hamori (2021) and Silva (2020), disclosing ESG information can help companies better understand long-term risks and opportunities to make better decisions for business continuity in the future.

However, remember that the impact of ESG disclosure depends on the quality and relevance of the information disclosed by the company. According to Silva (2022) and Tamimi and Sebastianelli (2017), companies need to consider quality and relevance factors in disclosing ESG information to maximize the positive impact of ESG disclosure.

### **Differences in ESG Disclosure among Countries**

Depending on regulations, societal pressures, and company culture, ESG disclosure levels can vary from country to country. According to Atan et al. (2016), regulatory differences between countries can affect a company's ESG disclosure level. Countries with stricter regulations regarding ESG disclosure tend to have higher levels of ESG disclosure.

In addition, community pressure and advocacy groups can also affect a company's ESG disclosure level. Countries that have a society that cares more about ESG issues and advocacy groups that are more active tend to have higher levels of ESG disclosure (Chouaibi & Affes, 2021). Apart from these factors, corporate culture can also affect the level of ESG disclosure between countries. Corporate cultures that pay more attention to sustainability and social responsibility tend to have higher levels of ESG disclosure (Roy & Mukherjee, 2022).

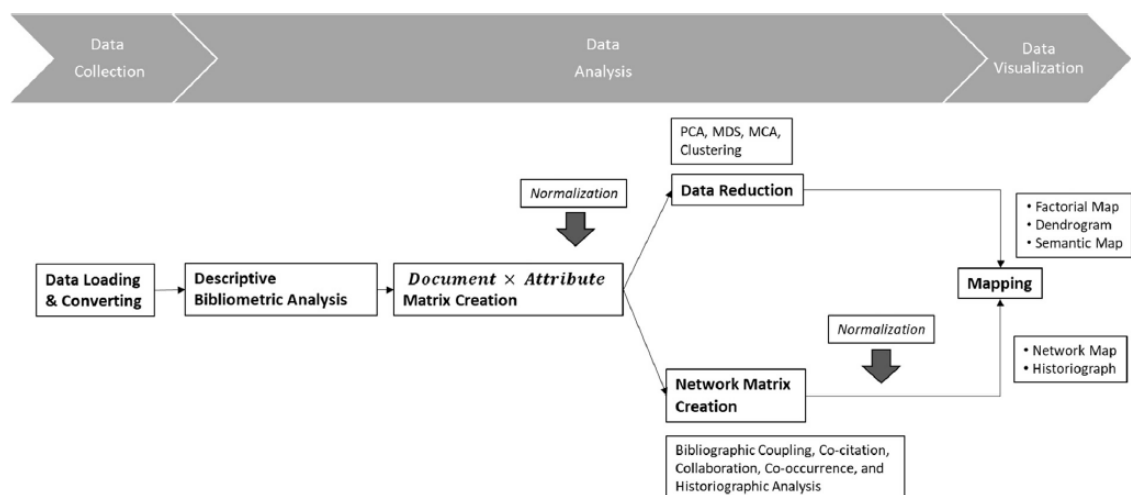
However, consider that other factors, such as the industrial sector and company characteristics, can also influence differences in ESG disclosure levels between countries. Many studies have found that differences in ESG disclosure levels between countries can be explained by factors, such as company size, market performance, financial performance, and industrial sector (Chung et al., 2023; Sharma et al., 2020).

## 2 RESEARCH METHOD

The method used to answer this research question is bibliometric. Data was collected from the Scopus database from 2015 to 2023, using the keywords “ESG disclosure OR environment, social, and governance disclosure,” so that 133 publication documents were collected consisting of articles, book chapters, conference papers, editorials, letters, notes, and reviews.

Furthermore, the data was processed using R biblioshiny software and Microsoft Excel. Both are used to map publications by visualizing data into simple but informative pictures. The next stage is to analyze the data that has been processed to provide helpful information.

The stages of bibliometric analysis using R biblioshiny can be seen in Figure 1.



Source: Aria & Cuccurullo (2017)  
**Figure 1. Stage of Bibliometric Analysis**

## 3 RESULT AND DISCUSSION

Based on the data collected in the Scopus database, the author resumes publication data regarding environment, social, and governance disclosure (ESG disclosure)



using R biblioshiny software as an initial description of the data processed further. Table 1 is a description of the research data.

It is known that the publication of research data from 2015 to 2023, namely a total of 133 documents, with an average publication growth of 29.68%. At the same time, the average citation per document is 21,93. Of all the documents collected, a total of 8,184 references. Then, the authors of this theme were detected by 326 people, and those who collaborated across countries were 18,8%.

The types of publications collected were 121 article documents, 4 book chapter documents, 4 conference paper documents, 1 editorial document, 1 letter document, 1 note document, and 3 review documents.

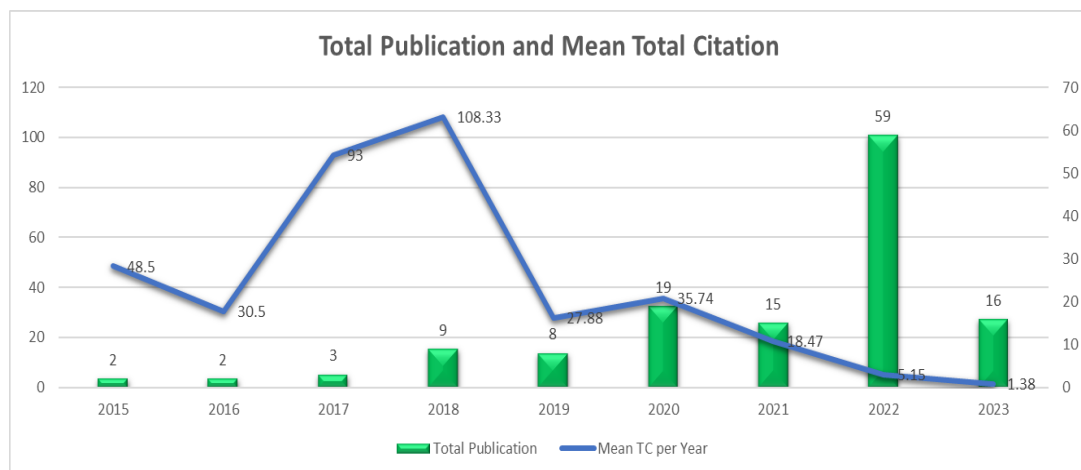
**Table 1. Resumes of Research Data**

<b>Description</b>	<b>Results</b>
<b>MAIN INFORMATION ABOUT DATA</b>	
Timespan	2015:2023
Documents	133
Annual Growth Rate %	29.68
Average citations per doc	21.93
References	8184
<b>AUTHORS</b>	
Authors	326
Authors of single-authored docs	19
Single-authored docs	23
Co-Authors per Doc	2.71
International co-authorships %	18.8
<b>DOCUMENT TYPES</b>	
article	121
book chapter	2
conference paper	4
editorial	1
letter	1
note	1
review	3

Next, the author presents a map of the development of publications from 2015 to 2023, both the number of publications and the average citations shown in Figure 2. The green bar is the number of publications yearly, while the blue line is

the average publication. It is known that the number of publications has fluctuated but tends to increase, especially in 2022. The decline occurred in 2019, 2021 and 2023. The decrease in 2023 was specifically due to the data cut-off until February 2023.

Likewise, the situation has also fluctuated. However, it has declined lately, especially since 2019, when the highest average citations occurred. This situation indicates a gap between the number of publications, which tends to increase, and the average citation, which tends to decrease.



**Figure 2. Total Publication and Mean Total Citation**

**Most Relevant Sources**

Figure 3 shows the number of research publications related to the ESG Disclosure theme from each journal. The blue bar graph shows the top journals with high relevance. The number of publications from all journals ranges from 2 to 12 documents.

Of the top 20 publication sources, sustainability is the most relevant journal and has published 12 documents related to this theme. At the same time, the second place is Business Strategy and the Environment, with a total of 8 publications. The third place is Corporate Social Responsibility and Environment, with the number of publications of 7 documents. Fourth place is the British Accounting Review, with 5 publications. The rest ranges from 2 to 3 documents.

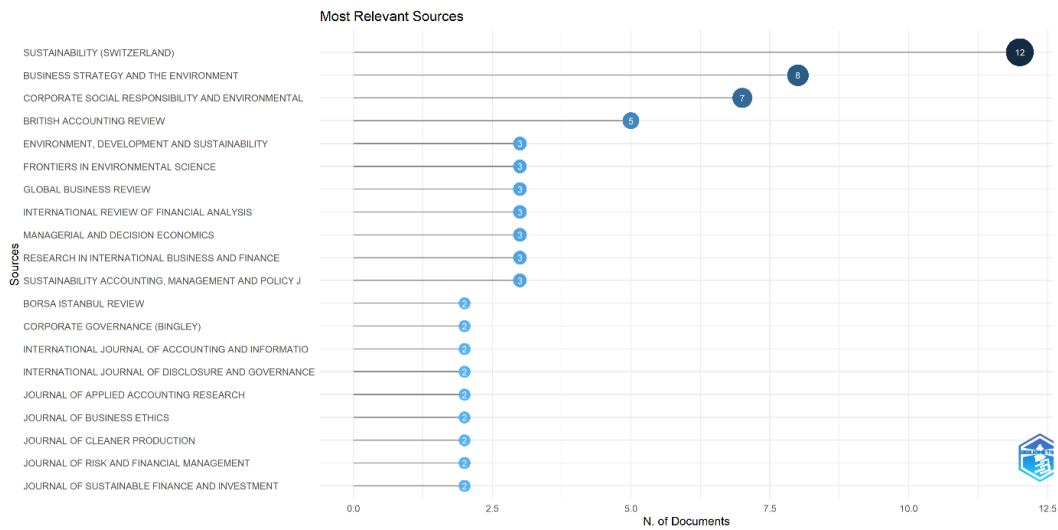


Figure 3. Most Relevant Sources

**Bradford's Law**

Next presents Bradford's law which classifies sources based on their level of productivity. Core journals are marked with a gray section and labeled as "Core Source", i.e., the most productive journal in ESG Disclosure during the study period.

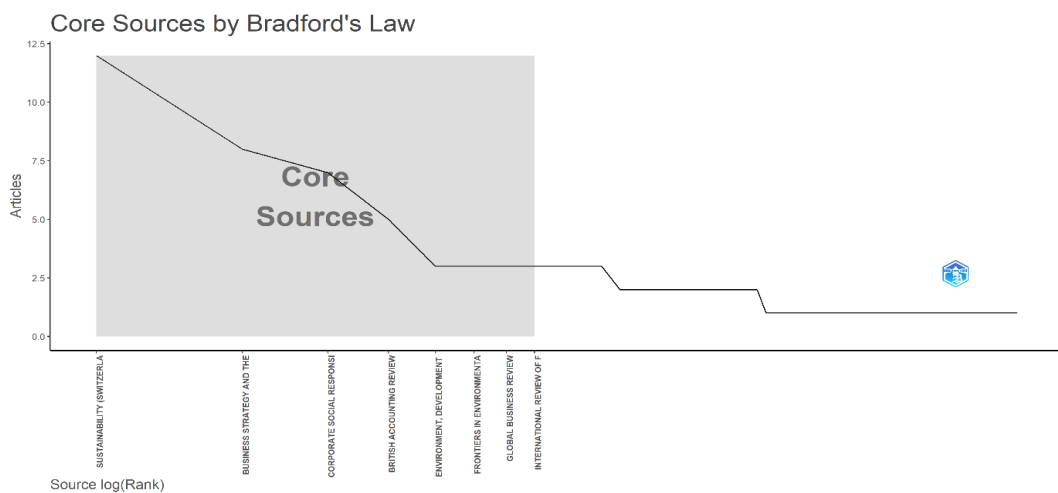


Figure 4. Bradford's Law

Figure 3 shows that the journal with the most publications is *Sustainability* with 12 documents. Next is *Business Strategy and the Environment*, with 8

publications, and several other journals in the core journal category related to ESG Disclosure.

### Source Impact

This section shows the journals with the highest impact sequentially based on the h-Index. This is illustrated in the blue bar chart. The darker the blue in the diagram, the more significant the journal's impact will be.

Based on the data presented, *Business Strategy and the Environment* is the top journal with an h-Index of 8 and a dark blue color, followed by *Sustainability* with an h-Index of 6. Furthermore, *British Accounting Review and Corporate Social Responsibility and Environmental Management* with each score h-Index 4. Other journals obtain an h-Index between 1 and 3 and are marked in bright blue, indicating a lower impact on the theme of ESG Disclosure.

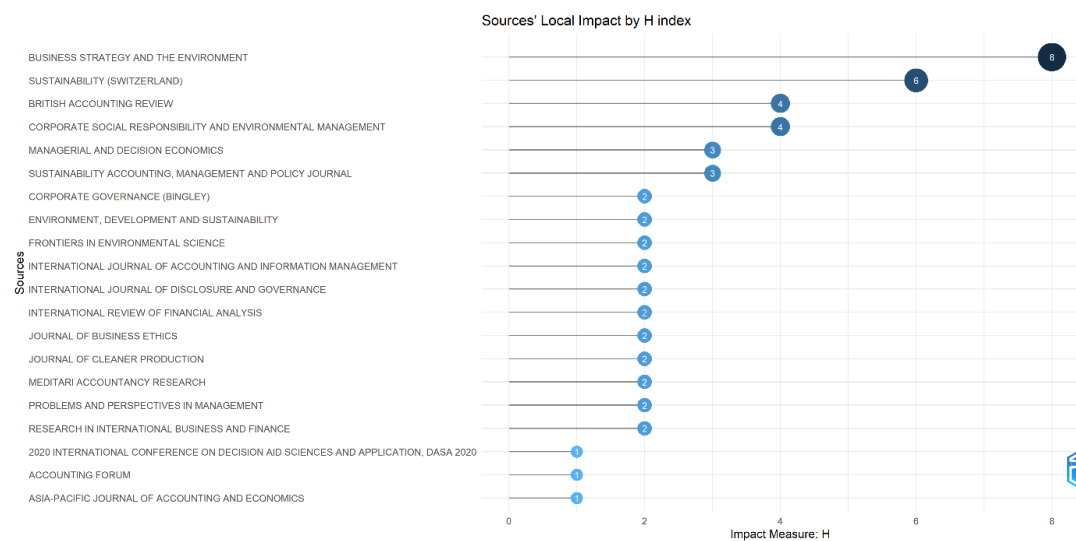


Figure 5. Source Impact

### Most Relevant Author

This section identifies the sequence of authors who contribute the most to ESG disclosure publications through their relevance. The number of publications of each author measures this. It is detected that Elili is the most prolific author and has five publications related to this theme. Then, in second place, there are three

authors, namely Hussainey, Suttipun, and Wasiuzzaman, each of whom has three articles. Meanwhile, the rest have two articles.

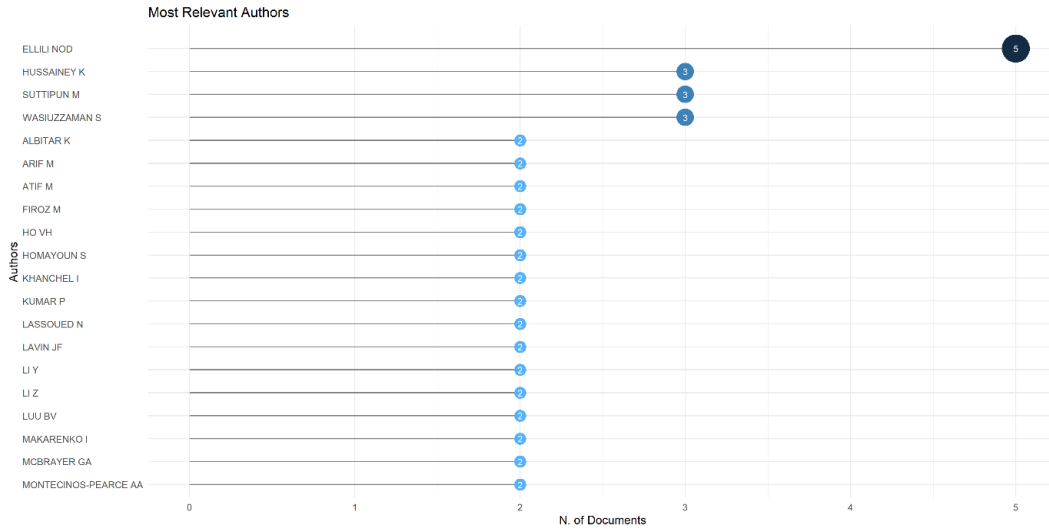


Figure 6. Most Relevant Author

Author Impact

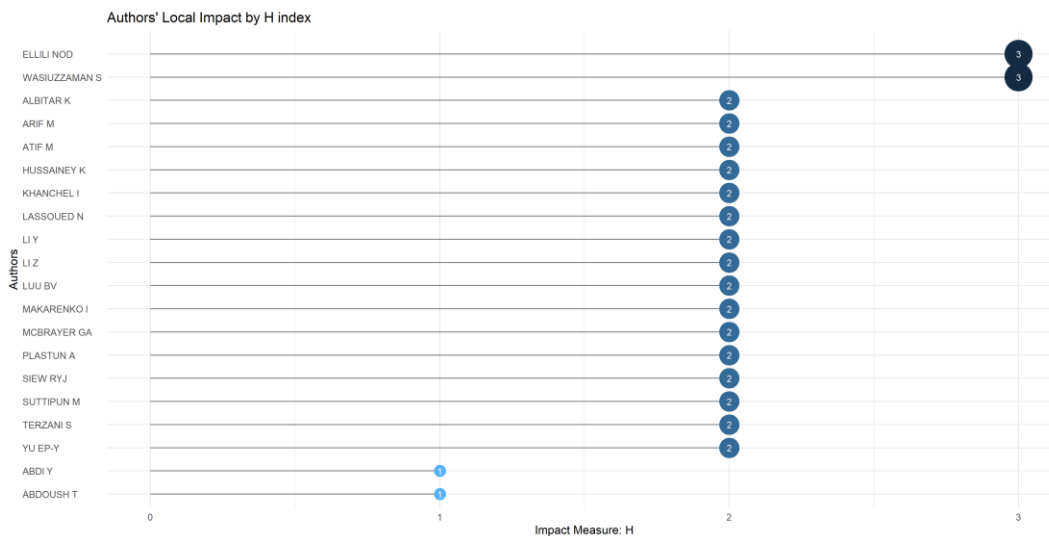
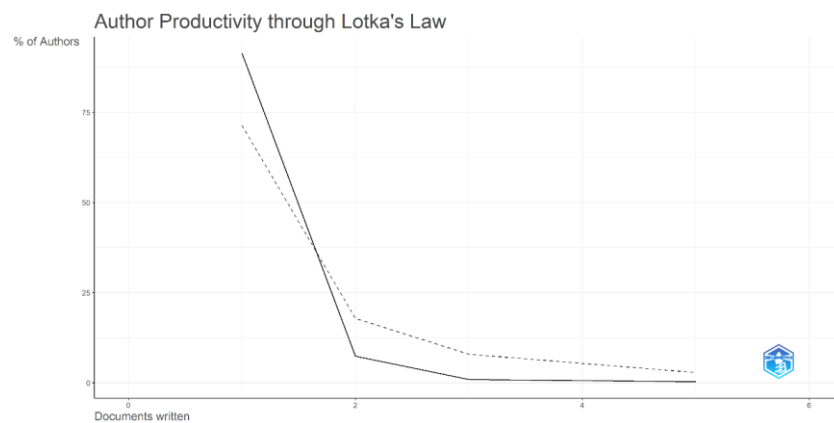


Figure 7. Most Relevant Author

The order of authors who have published their papers can also be made based on their relevance to the ESG Disclosure research topic using the h-Index. The author's h-Index score ranges from 1 to 3 indicated in dark blue on the bar chart. Figure 7 shows that the authors with the highest h-index score are Elili and

Wasiuzzaman, with an h-index score of 3. Meanwhile, 16 other authors obtained an H-index score of 2, and two others obtained an H-index score of 1. A score h-index lower indicates the impact of articles published by the author on ESG disclosure is still low.

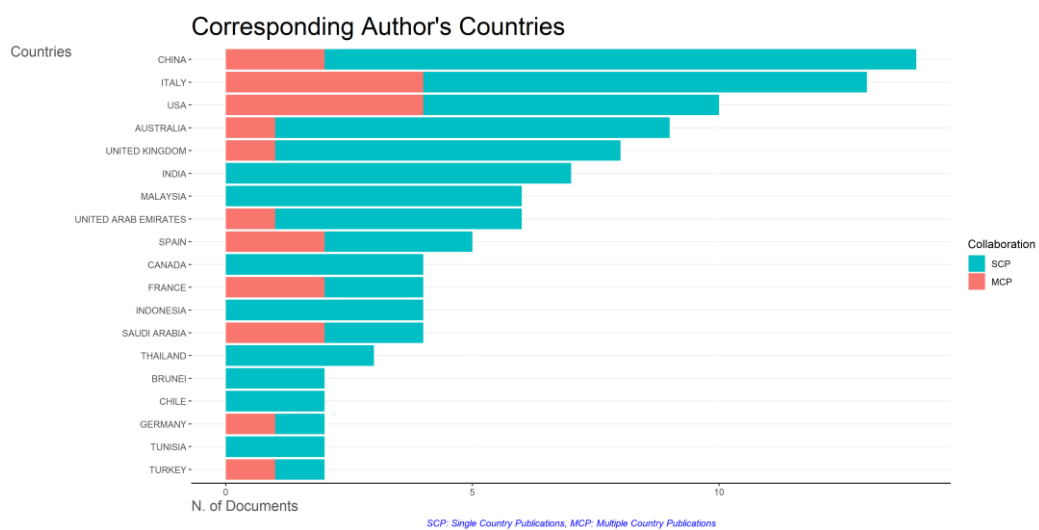
### The Frequency Distribution of Scientific Productivity



**Figure 8. The Frequency Distribution of Scientific Productivity**

Figure 8 shows the number of documents produced and distributed by the authors. Based on the figure, more than 75% of authors only wrote one document, less than 12.5% wrote 2 documents, and the rest wrote 1 document.

### Corresponding Author's Country

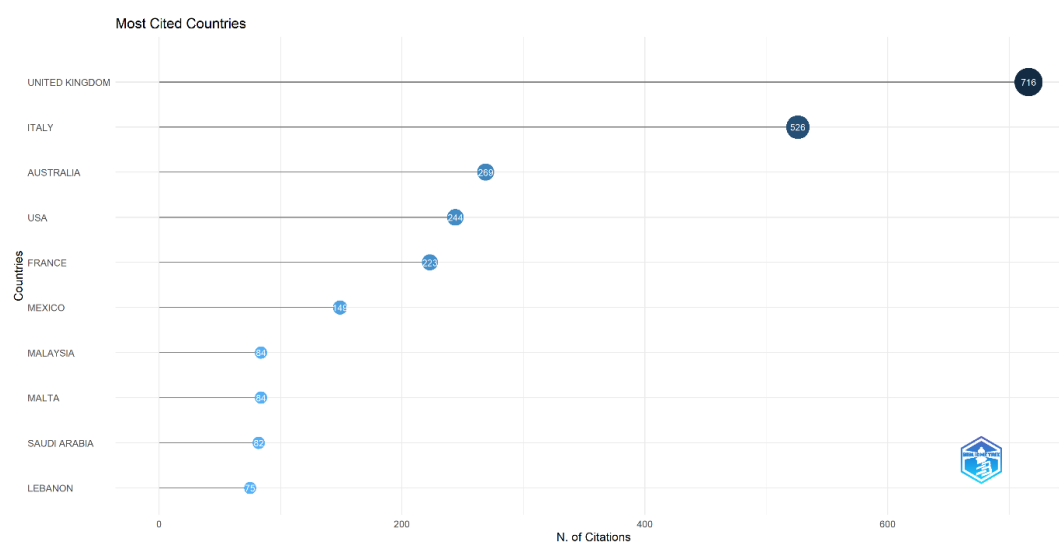


**Figure 9. Corresponding Author's Country**

Figure 9 shows the countries corresponding to the author in each article on the ESG disclosure topic and calculates whether the collaboration is an SCP (one-country collaboration) or MCP (collaboration between several countries). Based on this data, there are 20 countries with published documents ranging from 2 to 14. China ranks first with the highest author correspondence, with 14 documents. Italy is in second place with 13 published documents, and the USA is in third place with ten documents. Meanwhile, several countries did not collaborate, such as India, Malaysia, Canada, Indonesia, Thailand, Brunei, Chile, and Tunisia.

### Most Cited Country

In this study, research articles were grouped based on the country of origin of the most cited authors. The United Kingdom is the most frequently cited country, with 716 citations. Then, in second place, Italy is the country that has been cited the most, with a total of 526 times. Other countries also have quite a large number of citations, as can be seen in Figure 10.



**Figure 10. Most Cited Country**

### Word Cloud



Figure 11. Word Cloud

Furthermore, the words that appear most often in the publication collection are displayed as a word cloud. Word cloud displays images of words of various sizes according to the quantity of the number of words that appear. In terms of placement, the word cloud tends to be random, but the dominating words are placed in the middle so that they are more visible with their large size. Based on Figure 11, the word *governance approach* is the one that appears most often. This shows that the most widely discussed ESG issue is regarding corporate governance. This shows the importance of managing the company to achieve business continuity. The emergence of other words, such as *stakeholder*, also shows that the ESG issue is in the context of paying attention to the interests of many parties, especially the community and the surrounding environment, which puts pressure on companies to care about the environment. *Sustainability* and *corporate social responsibility* also appear closely related to ESG issues. Moreover, many other words whose appearances are still few can be developed because they have not been widely discussed in articles related to the theme of ESG disclosure.

### Co-occurrence Network

Figure 12 shows co-occurrence, namely the frequency of occurrence of words in ESG disclosure articles grouped by color type. The picture shows that *governance approach* is the word that appears most often and is grouped with other words in the green color cluster, such as *sustainability*, *corporate social responsibility*, and



other words that have something in common. Other words that often appear are *stakeholders* connected with *economic development*, *profitability*, *industrial performance*, and others in the brown color cluster. Other color clusters are also detected, but not too many.



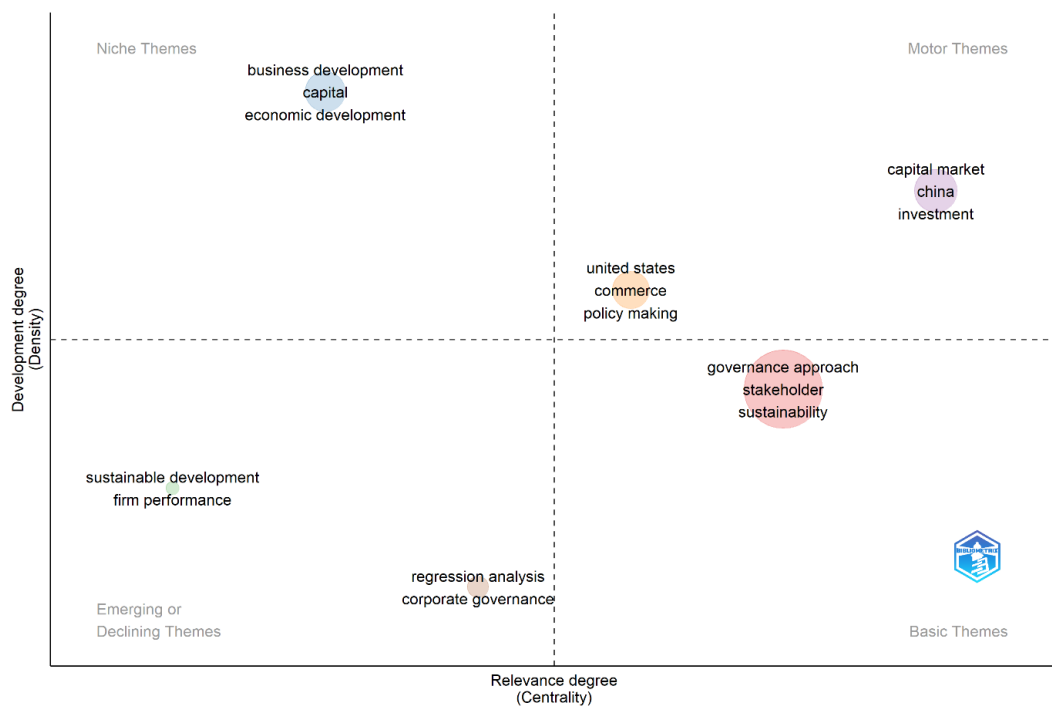
**Figure 12. Co-occurrence Network**

In addition, co-occurrence can also detect research topics related to the theme of ESG disclosure that have not been widely discussed. So, this topic has the potential to be developed in the future. The topic is detected with a circle that is still small. For example, small and medium enterprises, corporate strategy, gender relations, policy-making, environmental management, and finance are topics that can be further developed that are still connected to the governance approach. Another example is economic development, profitability, industrial performance, and panel data, which are topics that can be developed that are connected to the major stakeholder themes.

### Thematic Map

Figure 13 visualizes the themes in the ESG disclosure study by mapping them into four quadrants based on density and centrality. The top left quadrant is niche themes, which are more specific and important to discuss because they can find research gaps. The themes in this quadrant are business development, capital, and economic development. The top right quadrant is motor themes. This quadrant

describes a theme that is being widely discussed so it shows a very important theme. The themes in this quadrant are *capital markets*, *investment*, *commerce*, and *policy-making*. The lower left quadrant is emerging or declining themes, namely a collection of themes that have recently emerged or are currently fading. Usually, these themes start to be abandoned because the issues become less relevant to be discussed. The themes in this quadrant are *sustainable development*, *firm performance*, *regression analysis*, and *corporate governance*. The lower right quadrant is basic themes. This quadrant describes the underlying themes related to ESG disclosure. This theme is general, but the density is low. The themes in this quadrant are *governance approach*, *stakeholders*, and *sustainability*.



**Figure 13. Thematic Map**

## 5. CONCLUSION AND SUGGESTION

Publications regarding ESG disclosures began to be detected by Scopus indexers from 2015 to 2023. This issue is closely related to the Sustainable Development Goals (SDGs), which were started in September 2015 by the United Nations as part of the sustainable development agenda.

The development of ESG disclosure publications has fluctuated but tends to increase. Likewise, citations to publications also develop in a fluctuating manner but tend to experience the opposite. So that this condition becomes a gap because it is not positively correlated. More than 75% of authors write only one article on this theme.

The most productive source (journal) is *Sustainability*. This journal is a journal that consistently publishes articles related to sustainability issues published by MDPI. It is currently occupying the quartile 1 (Q1). Meanwhile, the journal that has had the most impact on developing ESG disclosure publications is *Business Strategy and the Environment*. This journal also occupies quartile 1 (Q1) and is published by John Wiley and Sons Ltd.

The most prolific and impactful author of ESG disclosure publications is Elili from Abudhabi University. At the same time, the author who ranks second in productivity and impact is Wasiuzzaman from the Brunei Technological University.

Based on the correspondence, China is the country that has published the most articles regarding ESG disclosure, followed by Italy and the USA. However, most of his publications are carried out only in collaboration with fellow citizens of his country. That some don't collaborate with others country. Meanwhile, the country with the most citations was the United Kingdom, followed by Italy, Australia, USA, France, and others. While China is productive, it is not included in the top ten most cited countries.

The topics that most often appear in ESG disclosure publications are related to the governance approach. This theme proved important for the author to discuss in the article because it relates to corporate governance. Good corporate governance can improve the performance and trust of the public; even good governance can encourage concern for the environment so that it will maintain the sustainability of its business (Horwitz, 2015). The capital market, investment, commerce, and policy-making are widely discussed and have recently become the driving force for ESG disclosures.

The findings of this research provide many implications. The question is the identification of the trend of publication of ESG disclosure which continues to increase so that it helps researchers see the direction of ESG disclosure research through the emergence of research topics currently being widely discussed. In addition, academic performance can be evaluated on the impact of authors who are almost the same as the ranks of authors with the highest impact. Maybe it's because more than 75% of researchers only write once regarding ESG disclosure, so they haven't shown good productivity among researchers. In addition, most research collaborations are still carried out only with fellow authors from one country. This description shows that there are still many opportunities to develop the topic of ESG disclosure.

The topics that can still be developed in the future can be illustrated from the quite diverse visualization of co-occurrence networks as related to small and medium enterprises, corporate strategy, gender relations, policy-making, environmental management, and finance. These topics are connected with the governance approach. Then, economic development, profitability, and industrial performance are connected to stakeholder topics. In addition, panel data and regression analysis can also be used. Considering that data related to ESG disclosure has begun to be widely published in company reports, it easier to find research data based on secondary data.

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