

The Current and Future Research on Environmental, Social, and Governance (ESG) Performance: A Bibliometric Analysis

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Abstract

The study in the area of ESG has not been able to draw an ultimate conclusion which can define the phenomenon. The purpose of this research is to give a more complete and accurate analysis of the development trend of ESG performance from the earliest ESG publication in Scopus in 2006 to 2022. The purpose of the study is to establish bibliometric analysis as an extensive review ESG performance literature. The method used in this study consists of five steps: defining search keywords, initializing search results, compiling preliminary data statistics, and analyzing data. The result shows that as many as 267 datasets were and collected from Scopus databases and visualized using Vosviewer. The study also presents the potential topics for future study based on the analysis of keywords with less frequent occurrence.

Keywords

ESG Performance, Bibliometric, Analysis, Review, and vosviewer.

1. Introduction

In order to address global concerns like social injustice, environmental degradation, and climatic change, the Agenda of 2030 was set as a comprehensive plan that unifies all 17 Sustainable Development Goals (SDGs) and 169 associated goals. The SDGs are the name given to these goals and targets. The SDGs call for coordinated global action by governments, businesses, and civil society organizations in order to achieve sustainable and shared prosperity (Khaled et al., 2021). One method to determine how far along businesses are in terms of their influence on the SDGs is to measure the effect on SDGs based on how well corporations do with sustainability. Academic research has frequently used Environmental, Social, and Governance (ESG) ratings to empirically quantify corporate sustainability performance. (Tamimi and Sebastianelli, 2017). Nonetheless, there is no correlation between these ratings and the Sustainable Development Goals (SDGs), it is hard for firms to demonstrate the value of their ESG initiatives contribute directly to particular SDGs and objectives. (Khaled et al., 2021).

Over the past ten years, there has been an increase in the amount of information shared regarding firms' environmental, social, and governance (ESG) activities. This is due to the growing emphasis on sustainability issues (Conca et al., 2021). The relevance of corporate responsibility for societal and environmental issues is highlighted by the expanding

influence of corporations on a diverse spectrum of stakeholders. Since ESG practices are crucial components of long-term management, businesses strive to improve them.

The overall operational effectiveness of firms is connected with their Environmental, Social, and Governance (ESG) disclosure (Xie et al., 2019). There is mounting evidence that firms' ESG disclosure procedures have an impact on their profitability (Conca et al., 2021). Additional research indicates that companies in the Eurostoxx50 index that made ESG investments and communicated their ESG plans saw a positive impact on their stock returns (Torre et al., 2020). However, more research on different markets is needed to determine whether there is a link between environmental, social, and governance factors and the success of financial and non-financial firms (Liu et al., 2022).

The association between ESG initiatives and corporate financial success has, however, been uneven according to earlier research. This is because the internal mechanisms and environmental influences were not fully taken into account in the research. The results of a unified moderated mediation model that examined how institutional context affects the relationship between environmental, social, and governance (ESG) activities of businesses and their financial performance demonstrate that every ESG action has a positive impact on the success of such businesses. This study shows how important sustainable management is for getting better results in dynamic environments, as well as the significance of multidisciplinary study in the fields of institutional theory and environmentally responsible management (Liu et al., 2022). Among the various categories of ESG, a company's corporate culture has a significant influence, especially for companies with poor governance (Kim and Li, 2021). The current study will fill a gap left by previous ESG research by examining the trend of ESG performance. The study's findings would be beneficial to the growth of ESG.

In this study, we would like to conduct bibliometric analysis to review the research trend in area of ESG performance since the research topic of ESG performance is still emerging. The research questions (RQ) are proposed as follows:

- RQ1 : How is the trend of ESG performance research based on the number of publications per year?
- RQ2 : What journals have most papers published in the area of ESG performance research?
- RQ3 : Who are the most contributing authors in publication of ESG performance research?
- RQ4 : Which are the countries of author that contribute the most to the publication in ESG performance research and their collaboration?
- RQ5 : What are main research topics and in ESG performance field?
- RQ6 : What are potential topics for future study in area of ESG performance research?

1.1 Objectives

The goal of this study is to give a more complete and accurate analysis on the development trend of ESG performance from 2006 to 2022 through bibliometric analysis.

2. Literature Review

2.1 ESG Performance

ESG ratings are assessments of a company's quality, standard, or performance in relation to environmental, social, or governance issues. SRAs, or sustainability rating agencies, evaluate companies and offer information on a number of particular issues that fall under the E, S, and G categories, like pollutant emissions, human rights, and management. Additionally, they consistently offer a general assessment of organizational performance based on a composite score of the effectiveness of numerous ESG issues. ESG and/or sustainability-related indicators are also produced by a large number of organizations. These indices are built up of lists of businesses that adhere to particular ESG standards, and these businesses are selected from a bigger pool of rated businesses. The SRAs in question here are MSCI, Sustainalytics, and Refinitiv (Clementino and Perkins, 2021). Sustainalytics' approach to sustainability. The Ratings of ESG Risk evaluate the degree to which a corporation's economic value is at risk as a result of ESG issues in order to determine the magnitude of a company's unmanaged ESG risks, or, to put it another way, the extent to which a company's economic value is at risk due to ESG reporting. A numerical score and a risk category make up the two components of an organization's ESG risk rating. Lower scores indicate a lower amount of unmanaged risk, and the numerical score is meant to represent units of mismanaged ESG risk. Unmanaged risk is evaluated using an open-ended scale with a maximum score of less than 50 and a starting point of zero (no risk). Companies are classified into one of five risk categories based on their quantitative scores (negligible, low, medium, high, severe). These risk categories are absolute, which means that a "high risk" assessment indicates an equivalent level of unmanaged environmental, social, and governance risk across all subindustries included. As a result, a direct comparison between,

say, a bank is possible. We developed a single currency for assessing ESG risk, which is based on the ESG Risk Ratings scores (Sustainalytics Inc., 2021).

2.2 Bibliometric Analysis

Bibliometric analysis is a quantitative method for analyzing bibliographic data in articles/journals. This analysis is commonly used to investigate references to scientific articles cited in a journal, map the scientific field of a journal, and categorize scientific articles according to a research field. This method is applicable in sociology, humanities, communication, marketing, and management, among other fields. In bibliometric analysis, the citation analysis approach is used to find one article cited by another, whereas the co-citation analysis approach is used to find two or more articles cited by one. The words used in a document (co-words) can reveal the scientific concept contained within it. The co-occurrence of words or keywords in two or more documents used to index documents is the basis for co-word analysis (Effendy et al. 2021).

3. Methods

The bibliometric analysis in this research follows the suggestion (Garza-Reyes, 2015). The process is performed systematically and uses explicit stages; therefore, it can be reproduced by other researchers. A bibliometric analysis can also be accomplished with a mind-mapping approach that shows the limits of knowledge (Tranfield et al. 2003). Bibliometric analysis is commonly used in various disciplines and focus on quantitative studies in journal articles, books, or other forms of written publications (Heersmink van den Hoven, van Eck, and van Berg, 2011).

In this research, the stages of the bibliometric analysis will be adapted into four phase, consisting of defining the search keywords, initial search results, compiling preliminary data statistics, and data analysis (Garza-Reyes, 2015).

4. Data Collection

This research was performed on 15th July, 2022, using keywords in the form of search strings relevant to ESG performance where keywords are searched based on the title, keywords, and abstract of the article as follows: TITLE-ABS-KEY ("ESG Performance"). Based on the defined keywords, the process of searching for articles in an electronic database is utilized as a source of information. The electronic database used in this research is Scopus, considering that Scopus is the largest reputable scientific database currently available and provides various peer-reviewed journal articles; thus, the quality of the articles obtained can be guaranteed.

The initial search results with keywords yielded 267 Scopus documents. In finding articles, the period is limited from 2006 to 2022. There is no refinement of search result conducted in this study since we cover all type of article including journals, proceedings, book chapter and book. We also did not limit the publication years for pragmatic reasons to obtain more articles, which are in line with the recommendations by Donthu (2021).

As mentioned earlier, the data collected following the search results are stored in the form of RIS files. Then the file is processed with the help of reference manager software (RMS) Mendeley to complete the metadata of the articles obtained such as the author's name, title, keywords, abstract and journal description (journal name, year of publication, volume, issue, pages). The dataset was verified, and the required information was added when there was incomplete data. Then the search result data was analyzed and classified based on the yearly number of publications, publication outlets (journals), contributing authors, and productive countries.

5. Results and Discussion

5.1 Number of Publication per Year (RQ1)

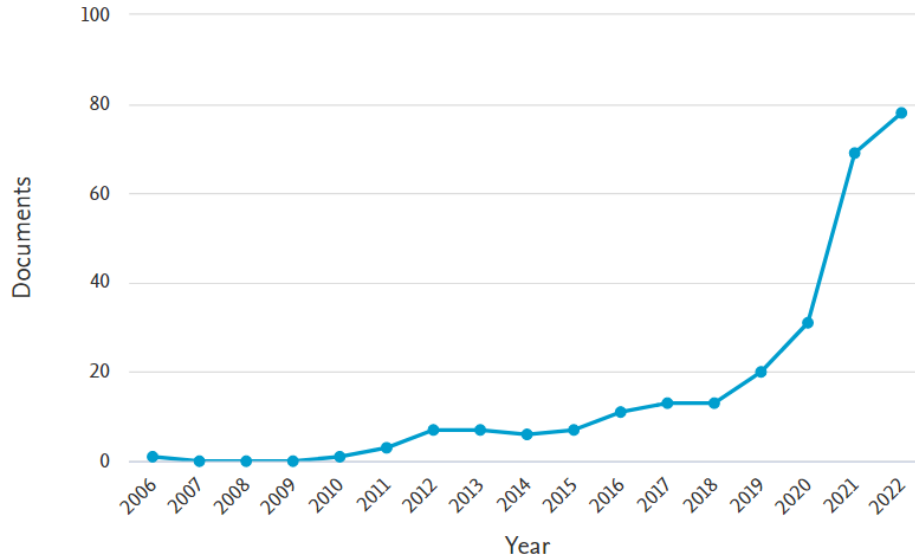


Figure 1. Trend research of ESG performance in the worldwide

Figure 1 shows the trend of research on ESG performance based on the number of articles published per year. In general, ESG performance research in the world grew modestly until 2018, and in 2021 reached significant growth. Research trend is still advancing in terms of the number of publications.

5.2 Most Journal Outlet Publication (RQ2)

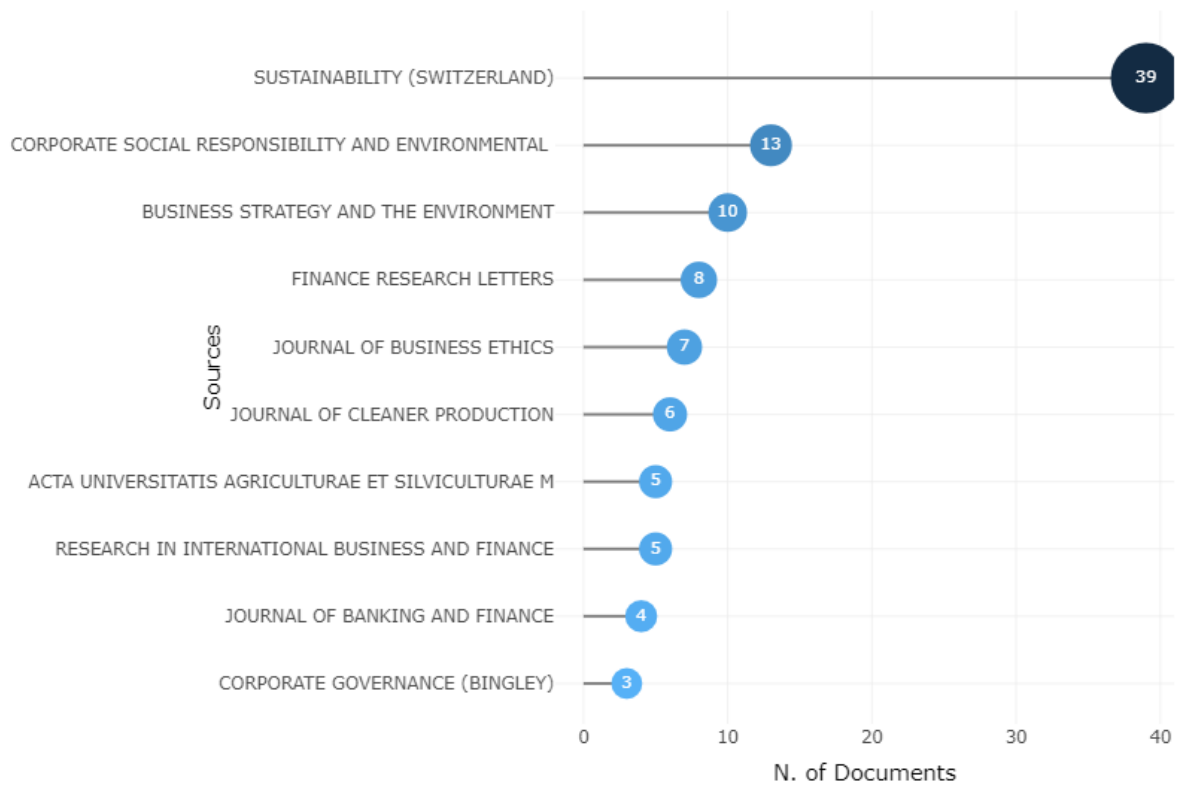


Figure 2. The top ten journals have most papers published in the area of ESG performance research

Figure 2 shows the top ten peer-reviewed journals with the most publications in the research of ESG performance. The journal's leader based on publication numbers is Sustainability (Switzerland), which has a total of 39 articles. This journal was published by Multidisciplinary Digital Publishing Institute (MDPI) AG, then followed by Corporate Social Responsibility and Environmental published by John Willey and Sons Ltd, one of the major scientific publishers in the world.

5.3 Most Productive Authors (RQ3)

Figure 3 indicates the top ten contributing authors with published articles in peer-reviewed journals in ESG performance field. Velte has become the most productive author in the list with 6 articles. Trenz and Štencel have the same number of 5 articles, followed by Crifo, Hřebíček, Kocmanova, Shakil, Diaye, Garcia, and Gholami..

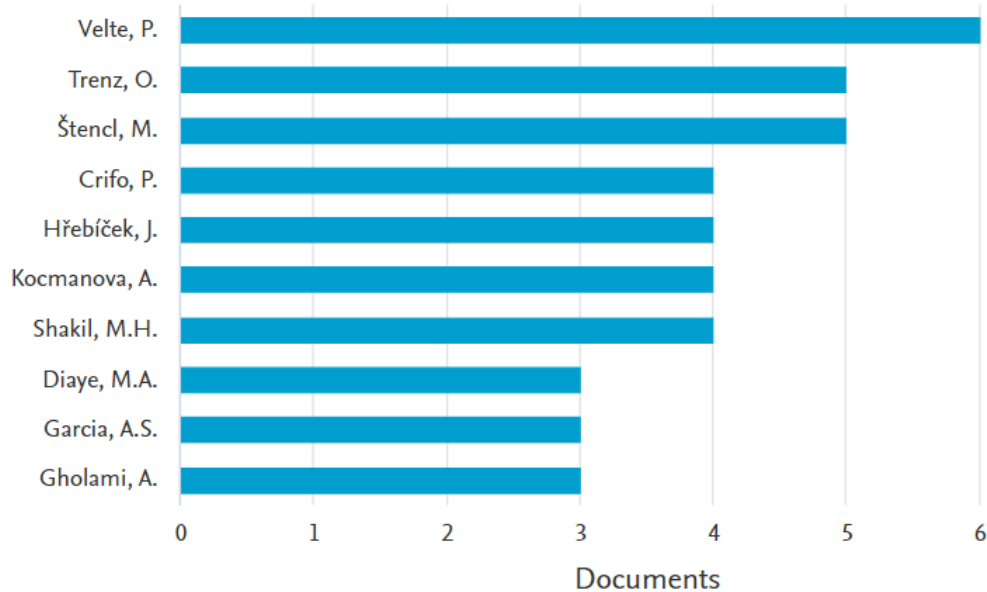


Figure 3. Top ten contributing authors in the area of ESG performance research

5.4 Most Productive Countries (RQ4)

Figure 4 indicates the top ten countries of authors based on publication numbers. China has the most with 34 authors and followed by the United States. Other productive countries include Germany, Italy, Spain, Australia, the United Kingdom, France, Canada, and the Czech Republic

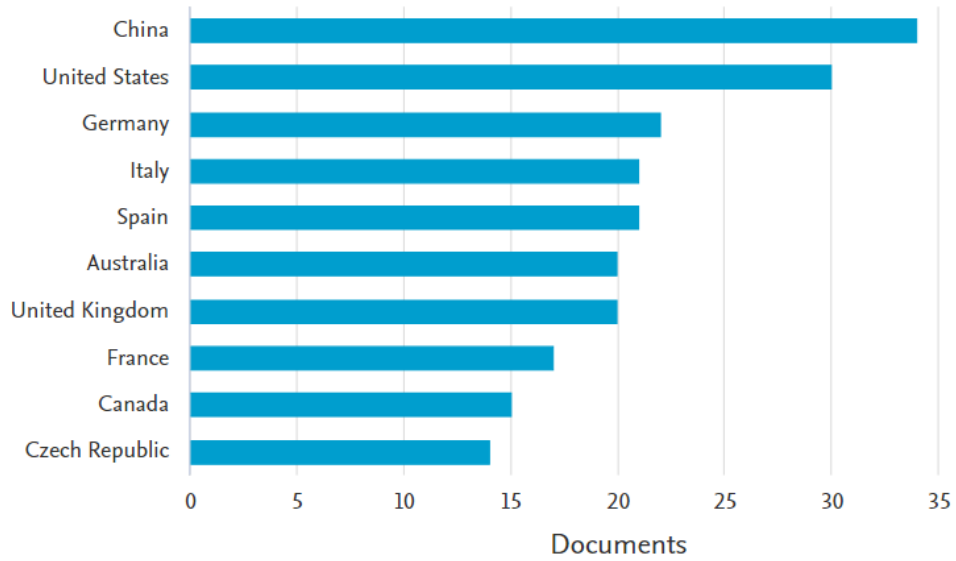


Figure 4. Top ten countries of authors based on publication numbers

5.5. Main Research Topic in ESG Performance (RQ5)

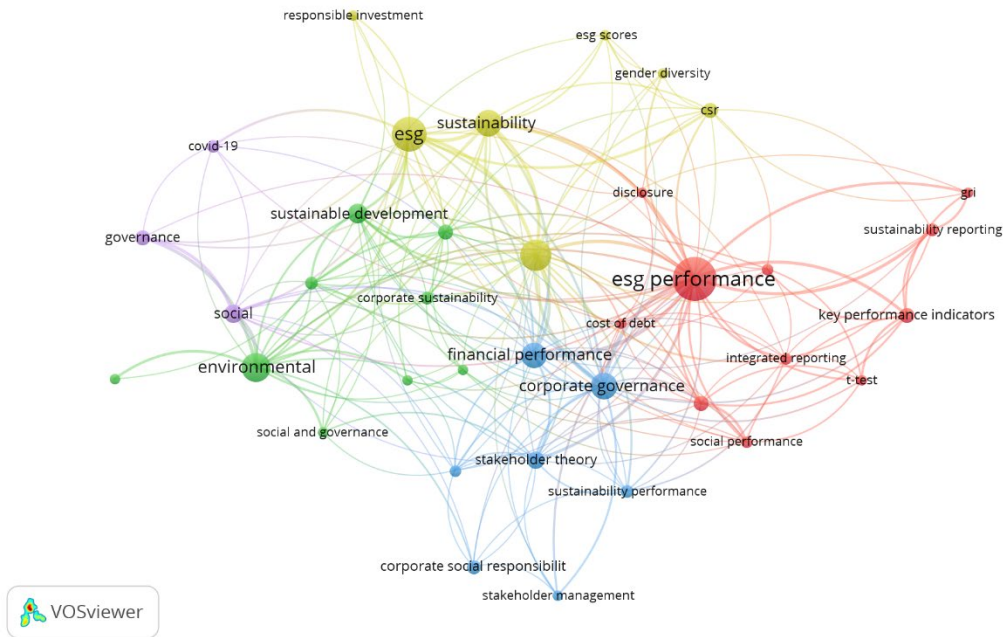


Figure 5. Network visualizations of Scopus database using Vosviewer

In the Figure 5, the network visualization was described through Co-Occurrence analysis especially based on the author keywords. Using Vosviewer, we set a minimum occurrence number is 5 then we obtain about 37 keywords that represent the current topic of research in the area of ESG Performance. After analyzing the result, there are a total of 5 clusters as research topic trend in ESG Performance which is indicated by a different color (red, blue, green, yellow, and purple). Furthermore, the network visualization indicated a topic with a circle and label. The size of the circle shows the extent of a topic has been studied. In other words, the bigger the circle shows that a keyword or topic gets more attention in the literature. We can see that ESG performance in the red cluster (the first cluster) becomes the

central of this study because it is the biggest circle on the map. Moreover, the mainstream research topic can be shown from each cluster. For example, the second cluster (yellow) shows the main research topic is related to corporate social responsibility and sustainability issue since they are the biggest circle in the cluster; the third cluster (blue) is related to corporate governance and financial performance; the fourth cluster (green) emphasized about the research topic of environmental and the last cluster (purple) has the main research topic in the issue of social.

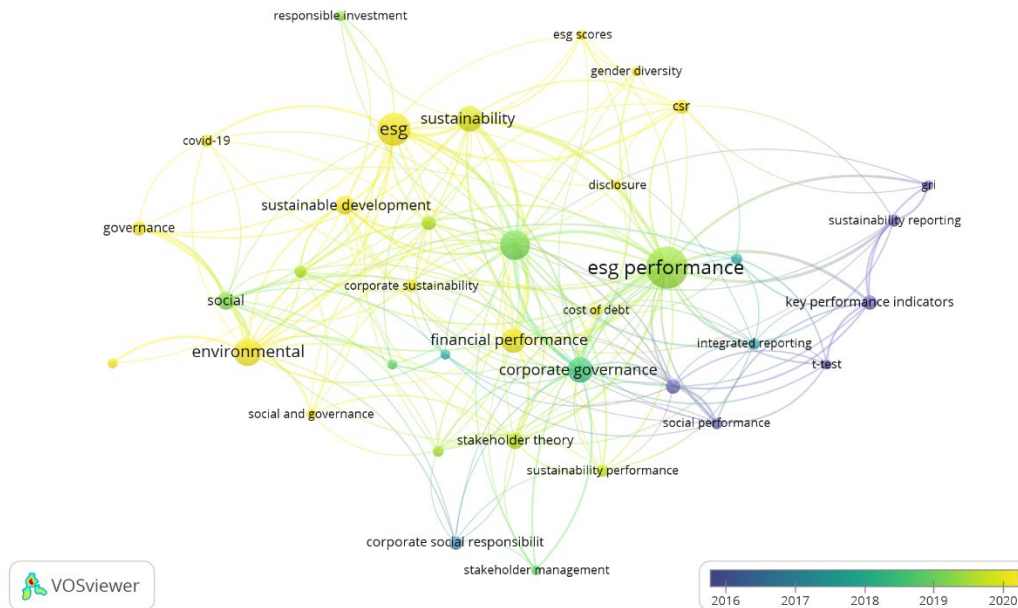


Figure 6. Overlay visualizations of Scopus database using Vosviewer

Figure 6 represents the period of the research topic which was conducted over the range of years. It can be seen that the most occurrence keywords appear from 2016 until 2020. For example, the research topic of ESG, financial performance, environmental was relatively new (2020) regarding other research topics such as corporate governance which appear in about 2019.

5.6 The Potential Topic in the area of ESG Performance (RQ6)

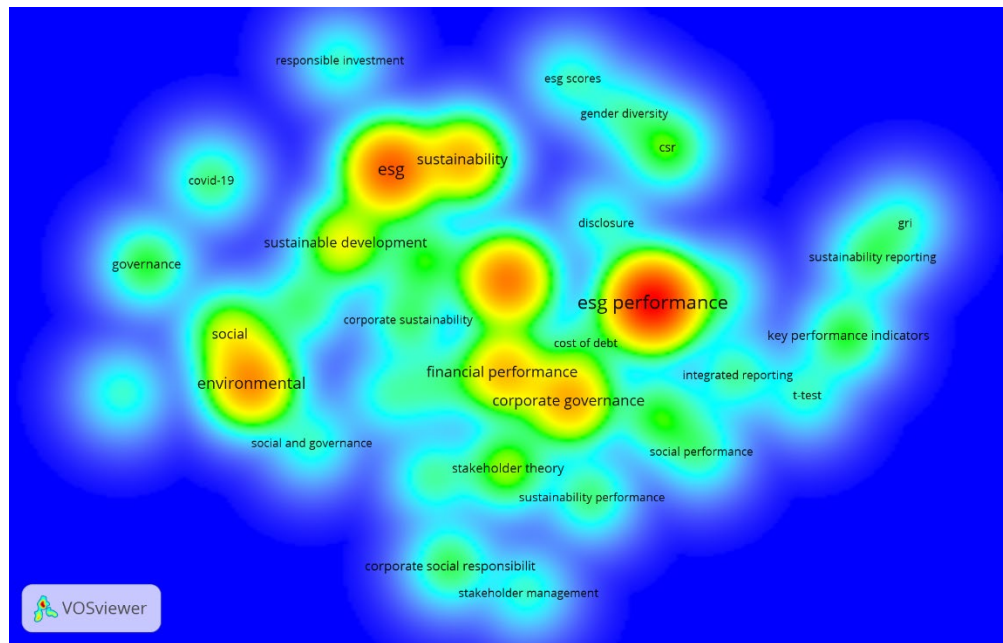


Figure 7. Density visualizations of Scopus database using Vosviewer

Figure 7 shows density visualization using Vosviewer, which indicates the depth of research studied in certain areas of ESG Performance. The density of items determines the appearance of keywords in the number represented by the color. The more concentrated colors indicate the research has grown in high numbers. Thus, we could notice the keyword with less frequent occurrence represented by un-concentrated color, which means the research topic is still limited that need more investigation for future study (potential topic). Some sample of these keywords such as responsible investment, stakeholder management, gri, disclosure, corporate social responsibility, social and governance. Thus, these research topics provide opportunities for researchers to identify the potential topic as a novel contribution to work in the area of ESG performance research.

6. Conclusion

This study employs bibliometric analysis to review all literatures from the Scopus database in ESG performance research areas. ESG performance literature has increasingly raised each year which was marked by the number of publications in recent years. According to the result, at the initial result stage, obtained as much as 267 datasets from Scopus database. The result of this study shows the trends of ESG performance research, publication outlets (peer-reviewed journals), contributing authors, and productive countries. The analysis of keywords with less frequent occurrence indicates the potential topics for future study as contribution of this study. Thus, this study also intended to notice research development and predict potential advancement in future research through bibliometric analysis because there has been a significant increase in ESG performance research. The Vosviewer application had been successfully demonstrated in mapping and visualizing the bibliometric data. The limitation of this study is datasets only taken from Scopus database especially peer-reviewed journals as resources. Thus, we recommend that further research should use various electronic databases such as Web of Science (WoS), Springer, IEEE Xplore et cetera in order to get better scientific contributions.

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