Environmental, Social, and Governance (ESG) Fraud: A bibliometric study and systematic literature review

Tarjo Tarjo[1*], *Alexander* Anggono[1], *Jamaliah* Said[2], *Eklamsia* Sakti[3]

[1]Universitas Trunojoyo Madura, Indonesia
[2]Universiti Teknologi MARA, ARI, HICoE, Malaysia
[3]Sekolah Tinggi Ilmu Kesehatan Ngudia Husada Madura, Indonesia

Abstract. This research explores the application of Environmental, Social, and Governance (ESG) fraud. This research also describes the trends and developments in ESG fraud from year to year. Apart from that, this research explains trends in research methods, research objects, the ESG fraud triangle, and ESG fraud schemes. To achieve all these objectives, the research methods used are bibliometrics and systematic literature review. The analytical tool used is MS. Excel and VOSviewer. The number of papers in the research sample was 66 papers. These articles contain controversial issues regarding the implementation of ESG, company performance and audits. The research results prove that the pandemic is vital in developing ESG fraud. When the pandemic hit, many researchers started researching ESG fraud, and at its peak, when the pandemic was over, there were still many researchers studying ESG fraud. There are two main findings in the research. First, pressure is a factor that often causes companies to practice ESG fraud. Second, non-financial reporting fraud schemes are often used to carry out ESG fraud practices.

Keyword: ESG fraud, fraud triangle, environmental, social, governance, bibliometrics, systematic literature review.

1 Introduction

The issue of Environmental, Social, and Governance (ESG) research became increasingly widely discussed when the pandemic began to hit the world. Several researchers reported that starting in 2019, the number of ESG research has proliferated [1]–[5]. In the last ten years, several researchers have discussed the issues of ESG information [6], reporting [7], risk-adjusted performance [8], transparency of ESG reporting [9], investment decisions [10], earnings management [11], financial performance [12], firm value [13], price inefficiency [14], and brand [15]. ESG research has also penetrated various industrial sectors such as mining [16], banking [17], manufacturing [18], transportation [19], technology [20], real estate [21], materials [22], entertainment [23], retail [24], services [25], health [26], and tourism [27]. Based on the literature above, the development of ESG issues continues to interest many researchers. Not only researching theoretically, the application of ESG has also been studied by various researchers. Many empirical studies in various sectors of the world prove this. Thus, the ESG issue has become the most exotic in recent years.

The rapid development of ESG puts enormous pressure on companies [28]. This pressure makes many companies use various methods to implement ESG even though they contain controversial actions in their implementation [29]. The ESG controversy can increase employee rights problems, environmental damage, and damage to corporate order [30]. Worse still, some parties resort to corruption, making false reports, misappropriating assets, and fraudulent financial reports to circumvent the implementation of ESG [31]. Controversial ESG practices lead to fraud. Therefore, controversial ESG issues are closely related to the emergence of ESG fraud practices.

The development of ESG fraud issues has also made history over the last ten years. In 2014, the issue of ESG fraud was driven by [32] research, which specifically highlighted the potential for fraud in the implementation of ESG. Issues continue to develop and begin to discuss ESG risk assessment issues [33], ESG red flags [34], corporate fraud [35], ESG controversy [36], supply chain controversies [37], company performance [38], persistence of ESG controversies [39], ESG fraud [40], and the end ESG [41]. Based on the literature above, the development of ESG fraud research is also increasingly mushrooming among researchers. Seeing the hot issue of ESG fraud, researchers are interested in exploring more deeply the theory and practice of ESG fraud from various publications from various previous researchers.

* Corresponding author: tarjo@trunojoyo.ac.id

This research will conduct a bibliometric analysis and systematic literature review to investigate ESG fraud. Systematic literature review and bibliometric approaches are popular among ESG researchers. Several researchers have studied ESG trends [2]–[5], sustainable finance [42], ESG issues in banking [43], ESG and financial performance [44], and ESG disclosure [1] using a bibliometric approach. Meanwhile, from a systematic literature review perspective, some researchers explore the issue of the influence of the Covid-19 pandemic on ESG implementation [45], ESG investment responsibility [46], new ESG themes [47], ESG practices [48], and developments in ESG issues [49]. Based on previous literature, there are gaps that have not been researched, such as ESG fraud. Research that raises the issue of ESG fraud using bibliometrics and systematic literature reviews is still rare. Therefore, this research aims to review and export research that raises ESG issues using a bibliometric and systematic literature review approach.

The main contribution of this research is to add new literature regarding ESG fraud. Another theoretical contribution is to provide an overview of trends in ESG fraud research, an overview of the factors that encourage the emergence of ESG fraud, ESG fraud schemes, and research opportunities. Meanwhile, on the practical side, this research explains ESG fraud so that practitioners can prevent, detect, and investigate ESG fraud cases. The final aim of this research is that the research results can contribute to reducing ESG fraud practices worldwide.

2 Literature review

The issue of ESG fraud arose due to the many controversies in implementing ESG. ESG controversy is the value for companies of the amount of negative media coverage related to ESG issues [50]. Usually, researchers measure ESG controversy using the 23 categories of ESG controversy reported by Thomson Reuters [51]. The lower the controversial ESG score, the higher the potential for ESG deviation [39]. Some of the practices included in the ESG controversy index are controversies regarding the application of "society," "human rights," "management," "product responsibility," "resource use," "shareholders," and "labor" [52]. More profoundly, the controversial application of ESG intersects with the practices of corruption, fraud, false reporting, and abuse [53]. Thus, controversial ESG practices are included in ESG fraud practices.

ESG fraud is fraudulent practices in implementing ESG. According to [54], there are two types of ESG fraud perpetrators, namely fraudsters from internal and external parties. Managers and employees carry out ESG fraud from internal parties. Usually, ESG fraud is reporting false or misleading ESG information by omitting material ESG facts or by inappropriate disclosure of ESG initiatives, programs, and metrics. Internal ESG fraud can also involve corruption. Meanwhile, ESG fraud from external parties is carried out by vendors in the organization's supply chain, contractors, customers, or other third parties. External party ESG fraud acts in the form of deliberate actions to deceive an organization by omitting material facts or disclosing false or misleading information related to the ESG program. As suppliers feel pressure to adopt ESG policies consistent with their key customers, external fraud schemes may develop related to reporting false and misleading statements about ESG policies and adoption.

ACFE and Thornton noted three factors that encourage ESG fraud, namely opportunity, pressure, and rationalization [54]. Opportunity describes the environment that allows fraud to occur. The opportunity for fraud to occur increases when organizations do not have a controlled environment to mitigate the inherent fraud risks properly. In an ESG context, such a control environment can include clear policies establishing ESG metrics, as well as oversight of internal and external actors to ensure compliance with these policies. Pressure describes the burden potential fraudsters feel that would encourage them to commit fraud. Lastly, rationalization is the ability of fraudsters to convince themselves that circumstances justify their illicit actions.

In terms of ESG fraud schemes there are four ESG fraud schemes, namely corruption, asset misappropriation, financial statement fraud, and non-financial report fraud [54]. Corruption is related to bribery, conflicts of interest, illegal gratification, and extortion. Misuse of assets such as larceny and misuse. Financial statement fraud refers to financial fraud in hiding the value of ESG liabilities and expenses, mark-up of ESG liability and expense accounts, deliberate recording errors in calculating ESG assets, and ESG reporting fraud. Lastly, non-financial reporting fraud involves false labeling or advertising, false disclosures or representations, false/dishonest certifications or pledges, and failure to disclose or report.

3 Method

This research uses a bibliometric approach and a systematic literature review. A bibliometric approach is used to describe trends and developments in ESG fraud, as well as the web or relationship of each study. This bibliometric approach uses MS applications. Excel and VOSviewer. Meanwhile, the systematic literature review approach will discuss all bibliometric analysis results, starting from the ESG fraud triangle, ESG fraud schemes, and research opportunities. The use of these two methods is to provide a clear picture of the development of ESG fraud as well as provide information on the factors that cause the emergence of ESG fraud, what schemes are used, and future research opportunities.

The data source for this research is a journal published on Scopus. The following are the criteria for journals used as data sources:(1) Scopus indexed journal, (2) journal periodization from 2014 to 2023, (3) journals that have the scope of business, economics, management, finance and accounting, (4) the journal is accessible, open, and provides the information needed for data analysis, (5) the keywords for this research are "environmental, social, and governance controversy," "ESG controversy," "ESG fraud," and "ESG risk."

The journal selection stage begins by searching for keywords on Google Scholar. The selection of journals from Google Scholar will be checked on the website https://www.scimagojr.com/ to ensure that Scopus indexes the journal. Researchers also use the publish or perish application and journals from publish or perish as well as through filters from the website https://www.scimagojr.com/. Another method is direct access to websites recognized in the research world, such as Elsevier, Emerald Insight, Taylor & Francis, SAGE, Springer, and Wiley. The publishers of these journals are publishers that have been officially indexed in Scopus; therefore, searches also use this method. Next, the journal will be downloaded directly as files and Research Information Systems (RIS). The downloaded file will be used as a data source for bibliometric analysis. This data will be entered into the MS application. Excel. Meanwhile, RIS functions as a data source for the VOSviewer application. After carrying out filters and steps to become research data, 66 journals were eligible for research data.

4 Result

4.1 Bibliometric results

This section will discuss in detail the results and discussion of the bibliometric analysis. Firstly, researchers will explain bibliometric results in the form of research trends from 2014-2023, publishers, research methods used, research objects, ESG fraud triangle, and ESG fraud schemes. Meanwhile, the second part explains research opportunities based on the processed results from the VOSviewer application. The following are the results and discussion of the bibliometric approach:

First, the results of research trends from 2014-2023 can be seen in Fig. 1. The development of ESG fraud research from 2014-2018 is rarely researched. Throughout the 2014-2018 period, there were only one or two researchers who developed ESG fraud. However, after 2018, ESG research began to develop. At its peak during and after the COVID-19 pandemic, the issue of ESG fraud began to emerge. In 2019 (the start of the pandemic), there were already five studies that raised the issue of ESG fraud. In 2020 (during the pandemic), there were eight publications regarding ESG fraud. In 2021 (the end of the pandemic), the issue of ESG fraud has reached its peak with 16 publications. However, in 2014-2021, only controversial ESG issues were hotly discussed. Meanwhile, the issue of ESG fraud emerged in 2022 (after the pandemic), and many researchers have linked controversial ESG practices to ESG fraud. Previously, few believed that the ESG controversy was a practice of ESG fraud after the emergence of ESG fraud, pioneered by Grant Thornton LLP and the Association of Certified Fraud Examiners (ACFE) regarding ESG fraud practices. Since then, controversial ESG views have become part of ESG fraud. Throughout 2021-2023, the publication of ESG fraud has become a hot issue and has been widely discussed by various researchers.

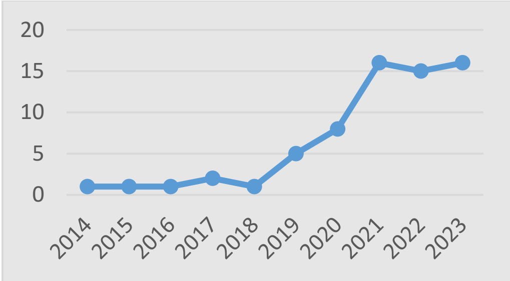

Fig. 1. Research trends from 2014 to 2023.

Second, the side of the party that made the publication from 2014 to 2013 (see Fig. 2). Elsevier is the publisher that most often publishes ESG fraud issues. Elsevier has published 27 ESG fraud papers. Furthermore, Wiley ranked third with 10 publications. The third rank is occupied by Springer with 8 publications. The fourth rank is occupied by two publishers, namely Emerald and Taylor & Francis (6 publications each). Finally, SAGE has contributed 2 papers. Thus, for researchers who want to publish on ESG fraud will be advised to submit in Elsevier, because Elsevier has the most publications that publish journals with ESG fraud issues.

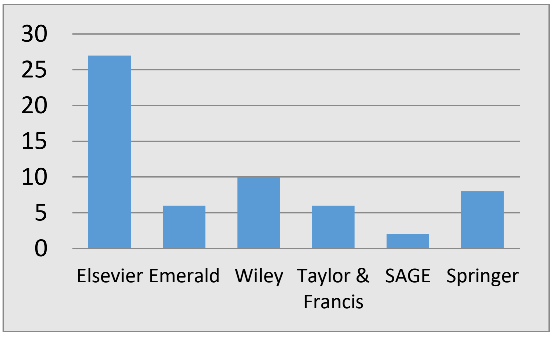

Fig. 2. Publisher.

Third, the results of the research method can be seen in Fig. 3. Based on Fig. 3, the quantitative method is the method preferred by 95% of researchers. Meanwhile, only 5% of researchers use qualitative and mixed methods. These results prove the superiority of quantitative methods in ESG fraud research.

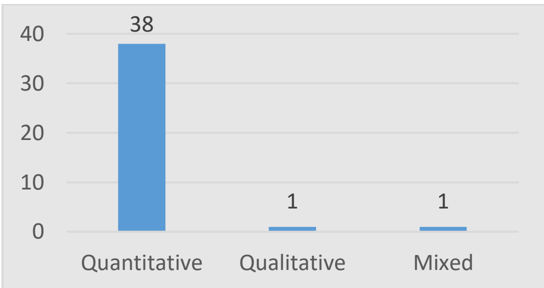

Fig. 3. Research method.

Fourth, we will discuss the object of ESG fraud research. Based on the bibliometric results in Fig. 4, the financial sector is a favorite for many researchers. The financial sector occupies the first position with 13 publications. Ranked second are the mining and manufacturing sectors, each with ten papers. Ranked third, there are three sectors, each with seven papers using that sector, namely the health, materials, and technology sectors. Next there are the transportation sectors (6 papers), real estate (5 papers), utilities (4 papers), retail (4 papers), services (3 papers), and agriculture (1 paper).

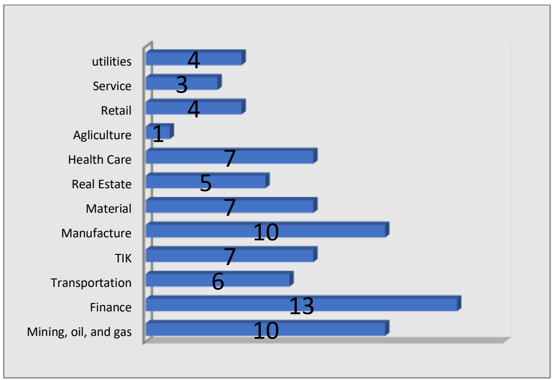

Fig. 4. Research object.

Fifth, the bibliometric results regarding the ESG fraud triangle can be seen in Fig. 5. The results show that pressure is the dominant factor. 72% of researchers believe pressure is the main factor in ESG fraud. Next, the opportunity factor with 21% of research. Finally, rationalize with 7% paper. Thus, these three factors contribute to ESG fraud, especially the pressure factor.

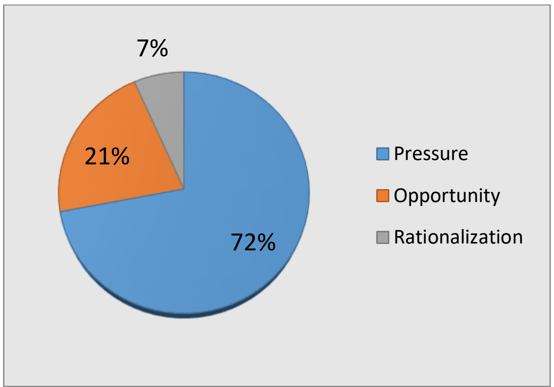

Fig. 5. Triangle ESG fraud.

Sixth, we will discuss the bibliometric results of the ESG fraud scheme can be seen in Fig. 6. 48% of publications believe that non-financial reporting fraud schemes are standard schemes. Furthermore, 27% of researchers discovered corruption schemes in their research. 16% believe that there is financial reporting fraud in ESG reports. Finally, 9% of researchers proved that there was misuse of assets in ESG implementation. Thus, the scheme reported by ACFE occurs in the field and has been successfully proven by many researchers.

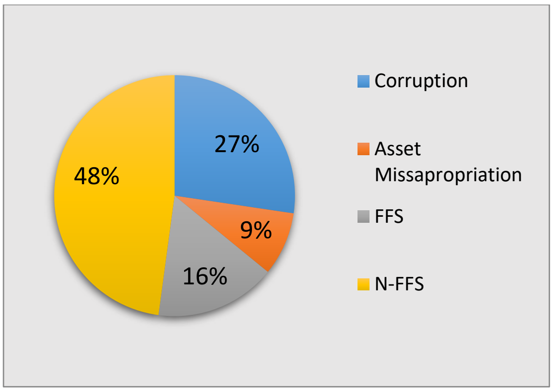

Fig. 6. ESG fraud scheme.

4.2 VOSviewer results

VOSviewer results will be presented in three stages, namely network visualization, overlay visualization, and density visualization. The first part will explain network visualization. Network visualization aims to see the relationship of each keyword. Based on Fig. 7, the keyword "ESG" is directly related to the keywords "initial public offering," "investor sentiment," "environmental controversies," "governance controversies," "corporate social responsibility," "risk," "ESG controversy," and "board gender diversity." Meanwhile, the keyword "ESG" does not have a direct influence on the keywords "environmental" and "ESG controversies". However, the exciting thing is that the keyword "ESG" is still in the same cluster as the keyword "controversies." This shows excellent potential for ESG practice controversies in implementing ESG.

From the perspective of the keyword furthest from the center of the cluster, "ESG." At the top, there are the keywords "environmental performance" and "governance controversies." On the left, there are the keywords "controversy," sustainable investment," ESG risk," and "compensation effect," which are mediated by the keyword "Corporate social responsibility." The most exciting findings are on the right because the keywords there have the furthest distance from the cluster center. For example, if you use the keyword "board gender diversity," there will be an indirect relationship with "ESG controversies." The "ESG controversies" cluster contains many exciting things, such as "corporate governance," information asymmetry," ESG disclosure," firm value," media severity," and "media reach" (see Fig. 7). From the combination of the "ESG," board gender diversity," and "ESG controversies" clusters, there are many research opportunities. On the other hand, if you use the route via "ESG controversy," you will encounter the keyword "environmental." In the "environmental" cluster, there is a lot of discussion about environmental risks that indicate fraud. Some of the keywords there are "social and governance (ESG) performance," "social and governance risks (ESG risks)," "climate change," "carbon risk," and "sustainable investment" (see fig.7). Therefore, the combination of research issues between "ESG," "ESG controversy," and "environmental" will create a lot of research ideas. Thus, "ESG" issues related to the "board gender diversity, "ESG controversies," "ESG controversy," and "environmental" clusters create many research opportunities.

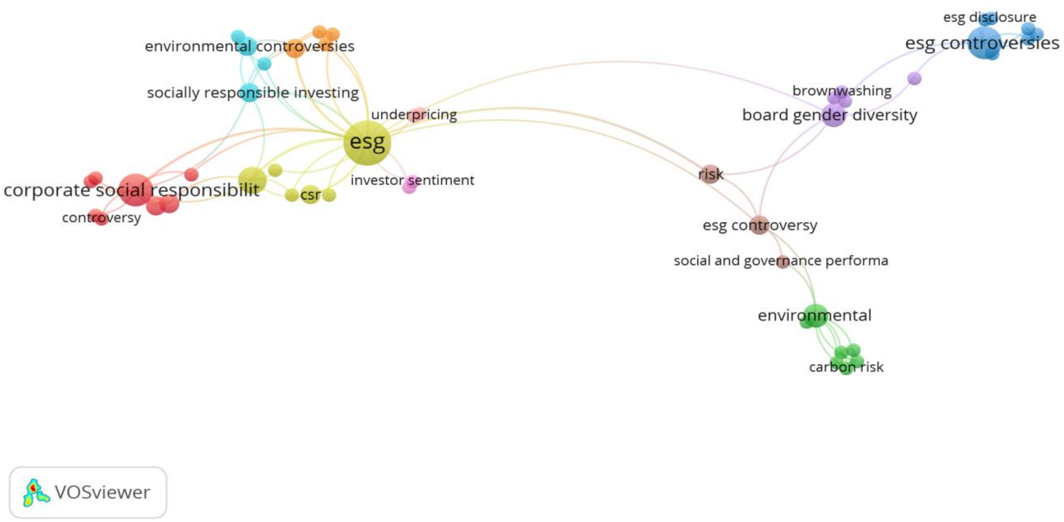

Fig. 7. Network visualization results.

Next, the results of the overlay visualization will be shown in Fig. 8. Overlay visualization aims to analyze the latest research or issues. This difficulty can be a research opportunity for future researchers. Based on Fig. 8, there is a new issue near the center of the "ESG" cluster, namely "market competition." Meanwhile, the keywords furthest from the center of the cluster are in the "board gender diversity," "ESG controversies," and "environmental" sections. In the "board gender diversity" cluster, there are three keywords that are suitable for research, namely the issues of "greenwashing," "brainwashing," "religiosity," and sustainability practices" (see Fig. 8). Next, in the "ESG controversies" cluster, there are "corporate governance," "firm value," "media severity," and "media reach" (see Fig. 8). Finally, in the "environmental" cluster, there is the issue of "social and governance (ESG) performance" which is still emerging (see Fig. 8). Thus, utilizing these latest issues can create new research ideas and models.

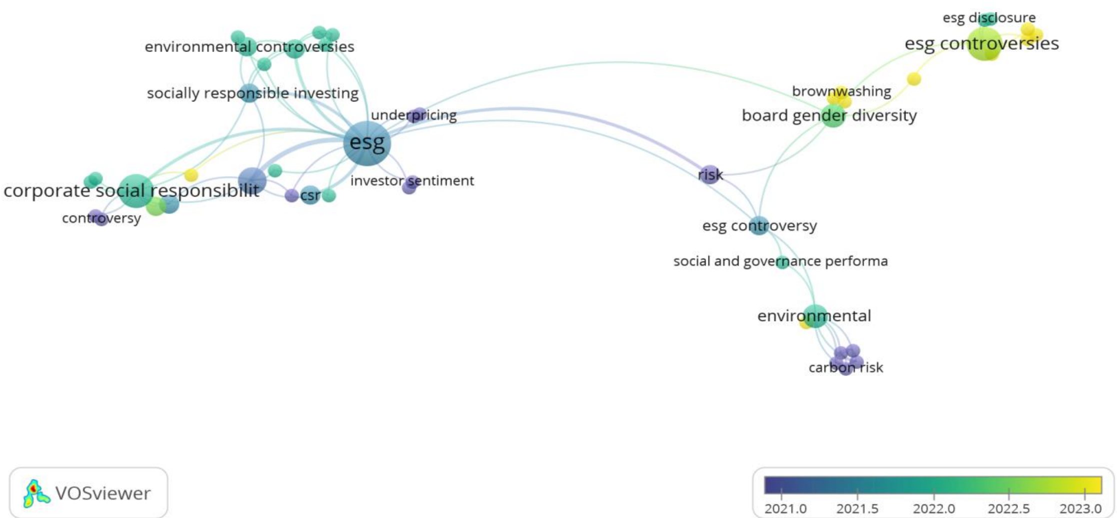

Fig. 8. Overlay visualization results.

The final part of the VOSviewer results is the density visualization results. Density visualization describes the intensity or amount of research on an issue or keyword. The density visualization results will be seen from the colors displayed. The brighter a cluster is, the more researched the issues are, and vice versa. Based on Fig. 9, there are two dark-colored keywords, namely "sustainable practices" (see Fig. 9) and "social and governance (ESG) performance." Apart from that, two keywords are a little more precise, namely "risk" and "ESG controversy." Thus, the keywords mentioned previously can become research opportunities for ESG researchers.

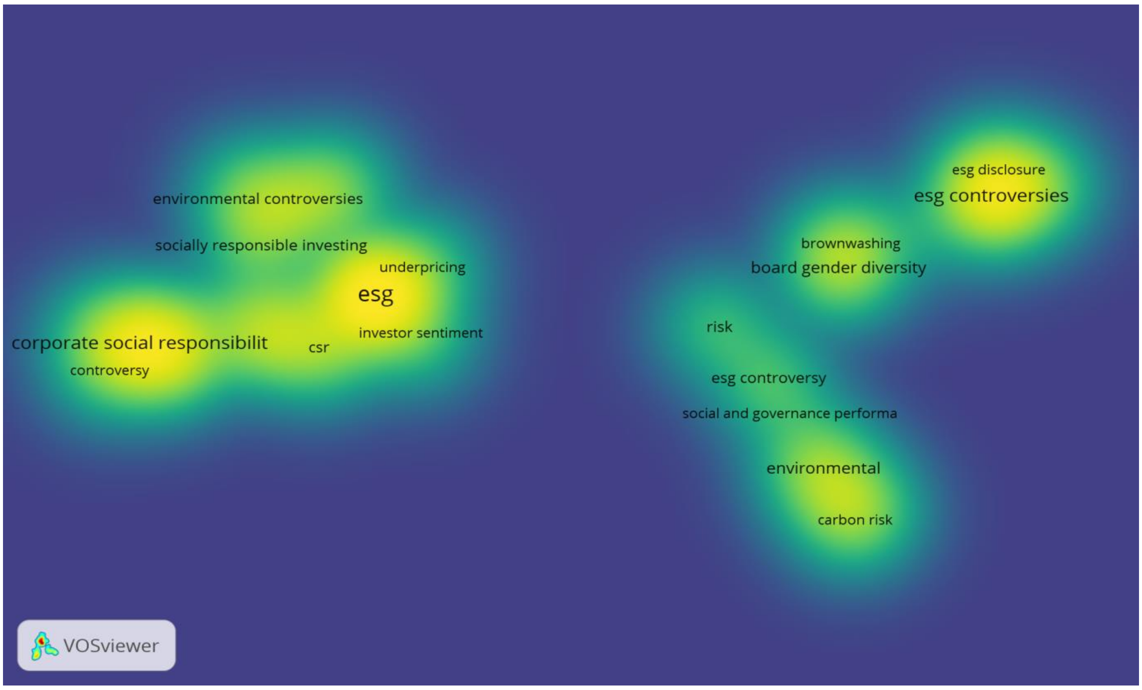

Fig. 9. Density visualization results.

5 Discussion

5.1 ESG fraud triangle

Three factors encourage someone to commit fraud: pressure, opportunity, and rationalization [55]. Based on this theory, it can be concluded that ESG fraud can occur due to pressure, opportunity, and rationalization. According to [54], stress is caused by internal and external pressure, opportunities arise due to weak internal controls, and rationalization arises from justification. These three factors can also be seen from the bibliometric results (see Fig. 5). Based on bibliometric results, the pressure factor is the leading actor that drives ESG fraud in companies. Pressure factors relate to pressures that arise from within (such as desire, greed, complacency, lifestyle, etc.) and from outside (such as financial pressure, pressure from family and superiors) [55]. This is followed by opportunity and rationalization factors. Opportunity factors can arise when the company's internal controls are poor while rationalization arises because of organizational culture [55].

Based on the results of literature studies, ESG fraud arises due to pressure, opportunity, and rationalization. On the pressure side, corporate groups can cause pressure and ESG fraud [56]. Pressure from stakeholders can also create ESG fraud [57]. [58] research explains that pressure comes from shareholders, employees, customers, and the community. [30] argues that social pressure from institutional investors towards implementing ESG can also be a driving factor in the emergence of potential ESG fraud. Research by [59] argues that external pressure from mass media can harm ESG implementation. Based on the findings from various kinds of research above, it is proven that pressure arises from various parties related to the company, such as groups, stakeholders, shareholders, employees, customers, communities, and the mass media. These parties have a significant role in creating pressure on companies so that ESG fraud actions and policies occur. Thus, the pressure factor from various parties causes the company to be forced to do everything to fulfill the wishes of all parties so that the company commits fraud so that ESG practices can be implemented.

Apart from pressure, opportunities also have an impact on ESG fraud. The main factor in ESG fraud is controversy in the implementation of governance [60]. Research by [61] explains that the governance problem in question needs to be more robust internal control. More specifically, research by [62] explains that the factor of inexperienced personnel is what creates opportunities for ESG fraud. Other governance factors that are supporting actors for the emergence of ESG fraud opportunities are weak monitoring [35], board of directors inequality [63], and information asymmetry

[64]. Thus, the leading actor that contributes to the emergence of opportunity factors is governance. Governance controversies must be addressed with internal control, poor monitoring, damage to equality, and a lot of false information. More broadly, governance controversies will trigger other controversies on the environmental and social side. Even worse, governance problems will become fertile ground for fraudsters to commit ESG fraud, especially acts of corruption.

Finally, the rationalization factor is one of the causes of someone committing fraud. The leading cause of rationalization is organizational culture [35]. Research by [64] argues that a particular company's culture can influence the number and categories of controversies involving a company. [65] found evidence that organizational culture is a sign for investors to assess the potential for ESG fraud. Research by [66] highlights the habit of companies committing ESG fraud even though legal action has been taken. So, there are two causes of ESG fraud from a rationalization perspective, namely culture and fraud habits. Organizational culture is essential in creating an excellent organizational culture or vice versa. Poor cultural factors will cause many companies to rationalize because it is accustomed to happening and can justify ESG fraud practices.

Furthermore, an organizational culture that tends to fraud can increase the potential for justification of fraudulent behavior. A culture of fraud will eventually make companies accustomed to committing fraud. Companies and employees use this culture and fraudulent habits to commit ESG fraud for their interests.

5.2 ESG fraud scheme

According to [54], ESG fraud has four central schemes, namely corruption, misuse of assets, financial statement fraud, and non-financial report fraud. First, corruption is related to bribery, gratification, conflicts of interest, and extortion. [53] call ESG corruption the abuse of public office for personal gain (covering a wide range of behavior, from bribery to theft of public funds). Furthermore, [67] describes corporate media scrutiny due to controversies related to bribery, political contributions, inappropriate lobbying, money laundering, parallel imports, or any tax fraud. Research by [68] argues that bribery and tax fraud are acts of ESG corruption. [69] explain acts of coercion, money laundering, managerial rewards, tax optimization, and tax avoidance as ESG corrupt practices. Objective evidence of the ESG corruption scandal has been reported by [66], namely the companies BAE Systems in 2007 and 2009, Bilfinger Berger in 2015, Daimler in 2010, GlaxoSmithKline in 2013, MAN in 2009, Telia Company in 2012, BASF in 2016, Deutsche Bank in 2012, Credit Suisse in 2017, and Walmart in 2012. Thus, in theory and the phenomena mentioned previously, ESG corrupt practices are valid and can be proven. Apart from that, the ESG corruption scheme that often occurs is bribery. However, other actions such as political contributions, inappropriate lobbying, money laundering, parallel imports, tax fraud, coercion, and embezzlement are part of ESG corruption schemes.

Second, misuse of assets is related to acts of theft and misuse. [53] refer to asset misappropriation as stealing, embezzling, or misusing public funds or other state resources for personal or family use carried out by members of the executive (head of state, head of government, and cabinet ministers) or their agents. [66] reported that acts of misuse of ESG assets were carried out by the EDF company in 2009. Thus, acts of misuse of ESG assets took the form of misuse of public funds or other resources for personal or family interests. Apart from that, the EDF company case proves that misuse of ESG assets can take the form of using company facilities to commit fraud and benefit themselves or their group.

Third, financial statement fraud is manipulating financial reports by utilizing ESG activities. [67] defines financial statement fraud as an aggressive and non-transparent accounting crime. [66] found fraudulent financial reporting practices in companies that manipulated financial data, such as Boeing in 2017, Honda in 2017, IHI in 2017, Kobe Steel in 2017, Mazda in 2017, Mitsubishi H. Industries in 2017, Nissan in 2017, Subaru in 2017, and Toyota in 2017. Based on these findings, the company that manipulated financial data was an automotive company in Japan in 2017. This case involved manipulating data regarding the recording of abusive spare parts. Apart from that, [66] reported that companies were affected by the LIBOR (London Interbank Offered Rate) mega scandal. The LIBOR scandal was a highly publicized scheme in which bankers at several large financial institutions colluded with each other to manipulate the London Interbank Offered Rate (LIBOR). Some companies that have taken this action are JP Morgan, Lloyds, Barclays, Citigroup, Credit Suisse, Deutsche Bank, HSBC, RBS, Societe Generale, and UBS in 2012. Thus, this case can be evidence that financial statement fraud does not only occur in the financial reporting section but must be examined down to the smallest part. This is what companies and auditors must do so that there are no errors in ESG financial reporting and there are no opportunities for fraud to arise. Lastly, this phenomenon and findings alarm companies not to ignore ESG reporting.

Furthermore, [66] found many cases of non-financial reporting fraud. Based on the report, the Apple company did not report abusive working conditions in 2010, child labor in 2012, 2013, and 2016, and batterygate in 2017. Barclays, Citigroup, Credit Suisse, Deutsche Bank, HSBC, JP Morgan, Lloyds, RBS, and Societe Generale manipulated employee data. Baxter, GAP, and Foxconn did not report knowingly employing minors. BP, Chevron, EDF, Exxon, Transocean, and Vale failed to report their oil spills. The Chinese milk scandal has hit companies such as Unilever and Nestle. Not only that, there are still many reports of fraud related to trading in emissions certificates by Deutsche Bank, security problems by General Motors, toxic paint by Mattel, poor working conditions by Microsoft, and unauthorized drug testing on children by Pfizer, dieselgate by Volksvagen, and nuclear disaster by Tokyo Electric

Power. Thus, non-financial reporting fraud becomes a unique scheme for recording ESG fraud. In addition, non-financial reporting fraud schemes are the most frequently discovered and recorded by many researchers.

5.3 Future research

This section will discuss research ideas around ESG fraud. These ideas emerge from all the bibliometric and VOSviewer results. In developing research ideas, researchers were inspired by [70] research. He created a research design from four main components, namely predictors, mediators, moderators, and outcomes (see Fig. 10). Predictors act as independent variables (e.g., ESG). The mediator acts as a mediating variable (e.g., financial performance). The moderator acts as a moderating variable (e.g., gender). Outcomes are the final results of the model, such as the role of the dependent variable (e.g., stock value). Based on this foundation, this research will develop ideas for future research.

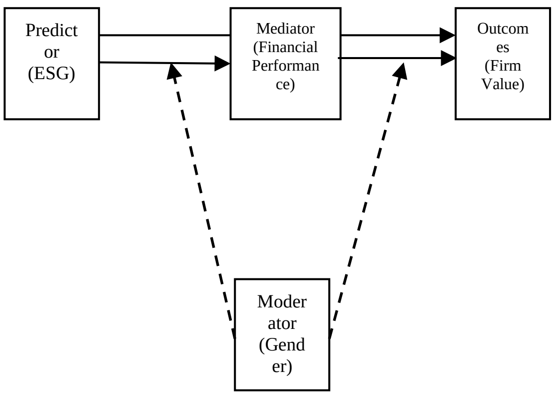

Fig. 10. Research design example.

The first research idea comes from the research method used. In the research results section, researchers found that almost all ESG fraud researchers frequently use quantitative methods. This is the background to the emergence of research opportunities regarding research methods. This research suggests using qualitative methods to ascertain ESG fraud practices. Apart from that, future research can also utilize mixed methods to compare survey results and interview results. The main challenge of using mixed is the survey part because there still needs to be more previous research that uses a survey approach. Another suggestion is to use the experimental method. This method can be used to circumvent limited data sources. The experimental method can also be an update that is worth trying because there are no researchers who have used the experimental method to investigate ESG fraud.

Research ideas emerge from the research object by utilizing qualitative methods and researching objects not studied by previous research (for example, the tourism sector). The tourism sector can be an exciting research object because after the pandemic hit, the tourism sector became the sector that suffered the most [71], [72]. On the other hand, the issue of fraud in the tourism sector is being hotly discussed [73]. Therefore, this sector is sexy enough to be an object of research. Another sector that is no less interesting is the health sector. The background for selecting this sector was the Covid-19 pandemic. The health sector was the busiest when the pandemic hit [74], [75]. The pandemic has an impact on increasing patients but also increasing environmental problems [76]. Apart from that, many parties have criticized the health sector for environmental issues during the pandemic [77]. This factor gives rise to research opportunities to examine the issue of ESG fraud.

Next, this researcher will discuss research ideas originating from the VOSviewer results. Here are ideas and explanations for future research:

5.3.1 ESG, board gender diversity, and ESG controversy (ESG fraud)

ESG is the ESG index value or ESG implementation value. Board gender diversity refers to gender equality between men and women. A similar thing happens to employees or board members who have physical deficiencies (disabilities). Researchers suggest ESG as a predictor, board gender diversity as a mediator, and ESG fraud as an outcome. This model explains that ESG practices will increase equality on the board. The reason is that there are "social" and "governance" themes that regulate issues of equality and board composition. These two themes create fairness on the company board so that it will increase board gender diversity. Increasing board gender diversity will reduce ESG fraud practices. Board gender diversity has a role in reducing the potential for fraud in the company; this will also occur in ESG fraud practices. Therefore, exemplary ESG implementation can indirectly reduce ESG fraud practices in companies through the role of board gender diversity.

5.3.2 Board gender diversity, ESG controversy (ESG fraud), and firm value/media/esg disclosure/information asymmetry

This model makes board gender diversity independent (predictor), ESG controversy as mediator or moderator, and firm value/media/ESG disclosure/information asymmetry as dependent (outcomes). Future research can choose one of the dependent variables (outcomes) and use ESG fraud as a mediator or moderator. First, make ESG fraud a mediator. Board gender diversity is one way to reduce the potential for fraud in the company. This ability will make board gender diversity hurt ESG fraud.

On the other hand, ESG fraud can hurt firm value/media/ESG disclosure and a positive direction for information asymmetry. Therefore, ESG fraud is suitable as a mediating variable. Second, make ESG fraud a moderator. Board gender diversity has a positive influence on firm value/media/ESG disclosure and a negative influence on information asymmetry. Meanwhile, the role of ESG fraud can be a factor that can weaken and strengthen both variables (predictors and outcomes). For example, board gender diversity can increase firm value, but the potential for ESG fraud in the company can weaken the influence of board gender diversity on firm value. This is caused by the negative effect that ESG fraud has on firm value. Similar explanations also occur in other dependent (outcomes) such as media, ESG disclosure, and information asymmetry.

5.3.3 Board gender diversity, sustainability practices, and ESG controversy.

This model is based on the results of density visualization, where sustainability practices are the keyword or issue that is least researched. In this model, board gender diversity is a predictor, sustainability practices are a mediator, and ESG controversy (ESG fraud) is an outcome. The logic of this model is that board gender diversity aims to increase company sustainability. This goal is what makes board gender diversity able to improve sustainability practices. Sustainability practices will try hard to make the company continue to be sustainable and avoid actions that could threaten the company's sustainability (for example, ESG fraud practices). Thus, board gender diversity has a positive effect on sustainability practices, and sustainability practices can hurt ESG fraud. So, it can be concluded that sustainability practices can mediate the influence of board gender diversity on ESG fraud.

5.3.4 ESG, risk, and ESG controversy (ESG fraud)

ESG can play a role in mitigating risk and ESG fraud. Therefore, ESG is suitable as a predictor. Meanwhile, risk is the mediator, and ESG fraud is the outcome. Based on these three variables, the model developed is that ESG can reduce the risk in the company, and reducing risk can reduce the practice of ESG fraud. Thus, ESG indirectly influences ESG fraud through risk.

5.3.5 ESG controversy (ESG fraud), environmental, and climate change/carbon risk/sustainable investment

The focus of this model is on the theme of "environment" by using the environment as a mediator. ESG fraud is a predictor, and climate change/carbon risk/sustainable investment is the outcome. The research idea is that ESG fraud will create problems in environmental practices, so that ESG fraud hurts the environment. The impact arising from the "environmental" theme issue will impact climate change/carbon risk/sustainable investment. Therefore, this model is suitable for development and unique because it focuses on the negative side of the environment.

5.3.6 Corporate Social Responsibility, Controversy, and ESG

Corporate social responsibility is a predictor. Meanwhile, controversy is a moderator, and ESG is an outcome. The controversy variable is related to fraudulent practices. Quantitative research methods with a survey approach can be used for this model. The logic of this model is that the implementation of corporate social responsibility will undoubtedly have a significant positive effect on the implementation of ESG, but not all corporate social responsibility practices are proper. There is the potential for fraud in implementing corporate social responsibility. Therefore, this potential fraud can weaken the impact of corporate social responsibility on ESG.

6 Conclusion

This research aims to describe the issue of ESG fraud and its practices. This research uses 66 papers that specifically discuss ESG fraud. Based on the bibliometric results of 66 papers, this research found that the trend in ESG fraud research began to rise when the pandemic emerged. During the pandemic, ESG fraud research continued to grow; even after the pandemic was over, there were still many researchers who were interested in researching ESG fraud. In terms of research methods used in the 66 papers, they are quantitative methods, including using survey methods or using secondary data. Regarding research objects, the financial sector is the most popular. On the other hand, there are still many sectors that still need to be researched, for example, the tourism sector.

The main finding of this research is to describe and define the ESG fraud triangle and ESG fraud schemes in the form of a bibliometric and systematic literature review. Based on bibliometric results, it is the pressure factor that causes many companies to commit ESG fraud. The most significant pressure comes from stakeholders. Stakeholders want their company to continue to survive, so they have a great desire for the company to implement ESG. Apart from that, pressure also arises from external parties such as the mass media. The mass media puts enormous pressure on companies and has given rise to controversial ESG issues. If a company is included in the ESG controversy, the company has the potential for a big scandal, which will impact the company's sustainability. Therefore, the mass media is one of the main actors that causes companies to commit ESG fraud.

An equally important finding is the ESG fraud scheme. Based on bibliometric results, non-financial reporting fraud is the scheme most frequently carried out by companies. The results of a systematic literature review show that companies use many tricks for ESG fraud. These practices are related to fraudulent non-financial reporting. Non-financial reporting fraud practices that are pretty popular are failure to record oil spills, employing minors, and manipulating employee conditions. It's not just the practice of cheating on non-financial reports; many companies commit corruption. Usually, the corrupt practices are bribery, tax fraud, gratification, extortion, etc.

Furthermore, this research also succeeded in recording fraudulent financial reporting practices. Based on cases that occurred and were reported by previous research, the type of financial report fraud that occurred was the manipulation of spare part inspection data. Asset misappropriation schemes were also successfully documented by this research. The type of asset misuse found was using government funds or organizational facilities for personal and family interests. Lastly, ESG fraud practices are not only carried out by large companies, but there is the potential to be carried out in small and medium companies, state/regional-owned enterprises, and the government sector.

The theoretical implication of this research is to add to the literature regarding ESG fraud. ESG fraud research is still in its infancy. This is different from ESG and sustainability research, which is already popular. With this research, at least it provides motivation and research opportunities for future researchers to develop ESG fraud. On the other hand, this research provides practical implications for reducing ESG fraud practices. This is based on information regarding the ESG fraud triangle and types of ESG fraud schemes. By knowing the causes of ESG fraud and possible schemes, companies can prevent ESG fraud from occurring. If this has already happened, the company can detect and carry out an investigation using the findings in this research. Thus, this research contributes to reducing the practice of ESG fraud, which is starting to spread throughout the world.

Research limitations lie in the number of samples used. This small number is caused by the limited access that researchers have. Researchers only use journals that can be accessed and delete journals that cannot be accessed. Apart from that, the timeline starts from January 1, 2014, to July 31, 2023, meaning there is still the opportunity for additional papers after July 31, 2023. Meanwhile, the suggestion for future research is to increase the amount of research data. By utilizing open and closed-access journals, you can increase the number of papers used as data. Remember, this research suggests increasing the research timeline to December 31, 2023.

References

1. N. O. D. Ellili, "Bibliometric analysis and systematic review of environmental, social, and governance disclosure papers: Current topics and recommendations for future research," *Environ. Res. Commun.*, vol. 4, no. 9, 2022, doi: 10.1088/2515-7620/ac8b67.
2. S. Gao, F. Meng, Z. Gu, Z. Liu, and M. Farrukh, "Mapping and clustering analysis on environmental, social and governance field a bibliometric analysis using scopus," *Sustain.*, vol. 13, no. 13, 2021, doi: 10.3390/su13137304.
3. S. S. Senadheera, R. Gregory, J. Rinklebe, M. Farrukh, J. H. Rhee, and Y. S. Ok, "The development of research on environmental, social, and governance (ESG): A bibliometric analysis," *Sustain. Environ.*, vol. 8, no. 1, 2022, doi: 10.1080/27658511.2022.2125869.
4. G. Wan, A. Y. Dawod, S. Chanaim, and S. S. Ramasamy, "Hotspots and trends of environmental, social and governance (ESG) research: A bibliometric analysis," *Data Sci. Manag.*, vol. 6, no. 2, pp. 65–75, 2023, doi: 10.1016/j.dsm.2023.03.001.
5. X. Zhao, D. Nan, C. Chen, S. Zhang, S. P. Che, and J. H. Kim, "Bibliometric study on environmental, social, and governance research using CiteSpace," *Front. Environ. Sci.*, vol. 10, no. January, pp. 1–12, 2023, doi: 10.3389/fenvs.2022.1087493.
6. S. Du Rietz, "When accounts become information: A study of investors' ESG analysis practice," *Scand. J. Manag.*, vol. 30, no. 4, pp. 395–408, 2014, doi: https://doi.org/10.1016/j.scaman.2014.09.002.
7. M. A. Camilleri, "Environmental, social and governance disclosures in Europe," *Sustain. Accounting, Manag. Policy J.*, vol. 6, no. 2, pp. 224–242, May 2015, doi: 10.1108/SAMPJ-10-2014-0065.
8. N. C. Ashwin Kumar, C. Smith, L. Badis, N. Wang, P. Ambrosy, and R. Tavares, "ESG factors and risk-adjusted performance: a new quantitative model," *J. Sustain. Financ. Invest.*, vol. 6, no. 4, pp. 292–300, 2016, doi: 10.1080/20430795.2016.1234909.
9. N. Tamimi and R. Sebastianelli, "Transparency among S&P 500 companies: an analysis of ESG disclosure scores," *Manag. Decis.*, vol. 55, no. 8, pp. 1660–1680, Sep. 2017, doi: 10.1108/MD-01-2017-0018.
10. S. Sultana, N. Zulkifli, and D. Zainal, "Environmental, social and governance (ESG) and investment decision in Bangladesh," *Sustain.*, vol. 10, no. 6, pp. 1–19, 2018, doi: 10.3390/su10061831.
11. P. Velte, "The bidirectional relationship between ESG performance and earnings management – empirical evidence from Germany," *J. Glob. Responsib.*, vol. 10, no. 4, pp. 322–338, 2019, doi: 10.1108/JGR-01-2019-0001.
12. P. Velte, "Does CEO power moderate the link between ESG performance and financial performance?: A focus on the German two-tier system," *Manag. Res. Rev.*, vol. 43, no. 5, pp. 497–520, 2020, doi: 10.1108/MRR-04-2019-0182.
13. W. C. Wong, J. A. Batten, A. H. Ahmad, S. B. Mohamed-Arshad, S. Nordin, and A. A. Adzis, "Does ESG certification add firm value?," *Financ. Res. Lett.*, vol. 39, p. 101593, 2021, doi: 10.1016/j.frl.2020.101593.
14. N. Naeem, S. Cankaya, and R. Bildik, "Does ESG performance affect the financial performance of environmentally sensitive industries? A comparison between emerging and developed

markets," *Borsa Istanbul Rev.*, vol. 22, pp. S128–S140, 2022, doi: 10.1016/j.bir.2022.11.014.

15. W. Puriwat and S. Tripopsakul, "Sustainability Matters: Unravelling the Power of ESG in Fostering Brand Love and Loyalty across Generations and Product Involvements," *Sustainability*, vol. 15, no. 15. 2023. doi: 10.3390/su151511578.
16. M. Alandejani and H. Al-Shaer, "Macro Uncertainty Impacts on ESG Performance and Carbon Emission Reduction Targets," *Sustain.*, vol. 15, no. 5, pp. 1–15, 2023, doi: 10.3390/su15054249.
17. K. Bax, Ö. Sahin, C. Czado, and S. Paterlini, "ESG, risk, and (tail) dependence," *Int. Rev. Financ. Anal.*, vol. 87, no. 2020, p. 102513, May 2023, doi: 10.1016/j.irfa.2023.102513.
18. G. de la Fuente, M. Ortiz, and P. Velasco, "The value of a firm's engagement in ESG practices: Are we looking at the right side?," *Long Range Plann.*, vol. 55, no. 4, p. 102143, 2022, doi: 10.1016/j.lrp.2021.102143.
19. A. Maaloul, D. Zéghal, W. Ben Amar, and S. Mansour, *The Effect of Environmental, Social, and Governance (ESG) Performance and Disclosure on Cost of Debt: The Mediating Effect of Corporate Reputation*, vol. 26, no. 1. 2023. doi: 10.1057/s41299-021-00130-8.
20. C. Consolandi, R. G. Eccles, and G. Gabbi, "How material is a material issue? Stock returns and the financial relevance and financial intensity of ESG materiality," *J. Sustain. Financ. Invest.*, vol. 12, no. 4, pp. 1045–1068, 2022, doi: 10.1080/20430795.2020.1824889.
21. L. Luo and Q. Tang, "The real effects of ESG reporting and GRI standards on carbon mitigation: International evidence," *Bus. Strateg. Environ.*, no. May, pp. 1–16, Oct. 2022, doi: 10.1002/bse.3281.
22. N. Ahmad, A. Mobarek, and N. N. Roni, "Revisiting the impact of ESG on financial performance of FTSE350 UK firms: Static and dynamic panel data analysis," *Cogent Bus. Manag.*, vol. 8, no. 1, 2021, doi: 10.1080/23311975.2021.1900500.
23. H. Takahashi and K. Yamada, "When the Japanese stock market meets COVID-19: Impact of ownership, China and US exposure, and ESG channels," *Int. Rev. Financ. Anal.*, vol. 74, no. February, p. 101670, 2021, doi: 10.1016/j.irfa.2021.101670.
24. Y. Eliwa, A. Aboud, and A. Saleh, "ESG practices and the cost of debt: Evidence from EU countries," *Crit. Perspect. Account.*, vol. 79, no. xxxx, p. 102097, Sep. 2021, doi: 10.1016/j.cpa.2019.102097.
25. D. Luo, "ESG, liquidity, and stock returns," *J. Int. Financ. Mark. Institutions Money*, vol. 78, p. 101526, 2022, doi: 10.1016/j.intfin.2022.101526.
26. M. Billio, M. Costola, I. Hristova, C. Latino, and L. Pelizzon, "Inside the ESG ratings: (Dis)agreement and performance," *Corp. Soc. Responsib. Environ. Manag.*, vol. 28, no. 5, pp. 1426–1445, 2021, doi: 10.1002/csr.2177.
27. C. Huang, Y. Chan, and M. Y. Hsieh, "The Determinants of ESG for Community LOHASism Sustainable Development Strategy," *Sustainability*, vol. 14, no. 18, p. 11429, Sep. 2022, doi: 10.3390/su141811429.
28. Sustainalytics, *ESG for IPOs: Becoming ESG-Ready for ESG for IPOs*. Morningstar Sustainalytics, 2022.
29. M. Sciarelli, G. Landi, L. Turriziani, and A. Prisco, "Does corporate sustainability mitigate firm risk? An empirical analysis on S&P 500 controversial companies," *Soc. Responsib. J.*, May 2023, doi: 10.1108/SRJ-09-2021-0388.
30. C. Champagne, F. Coggins, and A. Sodjahin, "Can extra-financial ratings serve as an indicator of ESG risk?," *Glob. Financ. J.*, vol. 54, no. February, p. 100638, 2022, doi: 10.1016/j.gfj.2021.100638.
31. S. Treepongkaruna, K. Kyaw, and P. Jiraporn, "Shareholder litigation rights and ESG controversies: A quasi-natural experiment," *Int. Rev. Financ. Anal.*, vol. 84, p. 102396, 2022, doi: https://doi.org/10.1016/j.irfa.2022.102396.
32. M. Singal, "The Link between Firm Financial Performance and Investment in Sustainability Initiatives," *Cornell Hosp. Q.*, vol. 55, no. 1, pp. 19–30, 2014, doi: 10.1177/1938965513505700.
33. G. Dorfleitner, G. Halbritter, and M. Nguyen, "Measuring the level and risk of corporate responsibility – An empirical comparison of different ESG rating approaches," *J. Asset Manag.*, vol. 16, no. 7, pp. 450–466, 2015, doi: 10.1057/jam.2015.31.
34. E. van Duuren, A. Plantinga, and B. Scholtens, "ESG Integration and the Investment Management Process: Fundamental Investing Reinvented," *J. Bus. Ethics*, vol. 138, no. 3, pp. 525–533, 2016, doi: 10.1007/s10551-015-2610-8.
35. M. A. Harjoto, *Corporate social responsibility and corporate fraud*, vol. 13, no. 4. 2017. doi: 10.1108/SRJ-09-2016-0166.
36. A. Aouadi and S. Marsat, "Do ESG Controversies Matter for Firm Value? Evidence from International Data," *J. Bus. Ethics*, vol. 151, no. 4, pp. 1027–1047, 2018, doi: 10.1007/s10551-016-3213-8.
37. I. Tamayo-Torres, L. Gutierrez-Gutierrez, and A. Ruiz-Moreno, "Boosting sustainability and financial performance: the role of supply chain controversies," *Int. J. Prod. Res.*, vol. 57, no. 11, pp. 3719–3734, Jun. 2019, doi: 10.1080/00207543.2018.1562248.
38. I. W. K. Ting, N. A. Azizan, R. K. Bhaskaran, and S. K. Sukumaran, "Corporate social performance and firm performance: Comparative study among developed and emerging market firms," *Sustain.*,

vol. 12, no. 1, 2020, doi: 10.3390/SU12010026.

39. G. Dorfleitner, C. Kreuzer, and R. Laschinger, “How socially irresponsible are socially responsible mutual funds? A persistence analysis.,” *Financ. Res. Lett.*, vol. 43, no. October 2020, p. 101990, 2021, doi: 10.1016/j.frl.2021.101990.
40. Y. H. (Andy) Kim, J. Park, and H. Shin, “CEO facial masculinity, fraud, and ESG: Evidence from South Korea,” *Emerg. Mark. Rev.*, vol. 53, p. 100917, Dec. 2022, doi: 10.1016/j.ememar.2022.100917.
41. A. Edmans, “The end of ESG,” *Financ. Manag.*, vol. 52, no. 1, pp. 3–17, Mar. 2023, doi: https://doi.org/10.1111/fima.12413.
42. A. Kashi and M. E. Shah, “Bibliometric Review on Sustainable Finance,” *Sustain.*, vol. 15, no. 9, 2023, doi: 10.3390/su15097119.
43. S. Galletta, S. Mazzù, and V. Naciti, “A bibliometric analysis of ESG performance in the banking industry: From the current status to future directions,” *Res. Int. Bus. Financ.*, vol. 62, p. 101684, 2022, doi: https://doi.org/10.1016/j.ribaf.2022.101684.
44. M. A. Khan, “ESG disclosure and Firm performance: A bibliometric and meta analysis,” *Res. Int. Bus. Financ.*, vol. 61, p. 101668, 2022, doi: https://doi.org/10.1016/j.ribaf.2022.101668.
45. R. Savio, E. D’Andrassi, and F. Ventimiglia, “A Systematic Literature Review on ESG during the COVID-19 Pandemic,” *Sustainability*, vol. 15, no. 3, p. 2020, Jan. 2023, doi: 10.3390/su15032020.
46. L. Widyawati, “A systematic literature review of socially responsible investment and environmental social governance metrics,” *Bus. Strateg. Environ.*, vol. 29, no. 2, pp. 619–637, Feb. 2020, doi: 10.1002/bse.2393.
47. D. Daugaard, “Emerging new themes in environmental, social and governance investing: a systematic literature review,” *Account. Financ.*, vol. 60, no. 2, pp. 1501–1530, 2020, doi: 10.1111/acfi.12479.
48. A. Poyser and D. Daugaard, “Indigenous sustainable finance as a research field: A systematic literature review on indigenising ESG, sustainability and indigenous community practices,” *Account. Financ.*, vol. 63, no. 1, pp. 47–76, Mar. 2023, doi: 10.1111/acfi.13062.
49. E. Steblianskaia, M. Vasiev, A. Denisov, V. Bocharnikov, A. Steblyanskaya, and Q. Wang, “Environmental-social-governance concept bibliometric analysis and systematic literature review: Do investors becoming more environmentally conscious?,” *Environ. Sustain. Indic.*, vol. 17, no. August 2022, p. 100218, 2023, doi: 10.1016/j.indic.2022.100218.
50. A. Melinda and R. Wardhani, “the Effect of Environmental, Social, Governance, and Controversies on Firms’ Value: Evidence From Asia,” *Int. Symp. Econ. Theory Econom.*, vol. 27, no. June 2020, pp. 147–173, 2020, doi: 10.1108/S1571-038620200000027011.
51. R. K. Bhaskaran, I. W. K. Ting, S. K. Sukumaran, and S. D. Sumod, “Environmental, social and governance initiatives and wealth creation for firms: An empirical examination,” *Manag. Decis. Econ.*, vol. 41, no. 5, pp. 710–729, 2020, doi: 10.1002/mde.3131.
52. A. P. Iannuzzi, S. Dell’Atti, E. D’Apolito, and S. Galletta, “Nomination committee characteristics and exposure to environmental, social and governance (ESG) controversies: evidence from European global systemically important banks,” *Corp. Gov.*, 2023, doi: 10.1108/CG-03-2022-0119.
53. I. Passas, K. Ragazou, E. Zafeiriou, A. Garefalakis, and C. Zopounidis, “ESG Controversies: A Quantitative and Qualitative Analysis for the Sociopolitical Determinants in EU Firms,” *Sustain.*, vol. 14, no. 19, pp. 1–17, 2022, doi: 10.3390/su141912879.
54. ACFE and G. Thornton, *Managing Fraud Risks in an Evolving ESG Environment*. 2022.
55. D. R. Cressey, “The Criminal Violation of Financial Trust,” *Am. Sociol. Rev.*, vol. 15, no. 6, pp. 738–743, 1950.
56. G. Cohen, “The impact of ESG risks on corporate value,” *Rev. Quant. Financ. Account.*, vol. 60, no. 4, pp. 1451–1468, 2023, doi: 10.1007/s11156-023-01135-6.
57. M. H. Shakil, “Environmental, social and governance performance and financial risk: Moderating role of ESG controversies and board gender diversity,” *Resour. Policy*, vol. 72, 2021, doi: 10.1016/j.resourpol.2021.102144.
58. G. Cohen, “ESG risks and corporate survival,” *Environ. Syst. Decis.*, vol. 43, no. 1, pp. 16–21, 2023, doi: 10.1007/s10669-022-09886-8.
59. D. Fiaschi, E. Giuliani, F. Nieri, and N. Salvati, “How bad is your company? Measuring corporate wrongdoing beyond the magic of ESG metrics,” *Bus. Horiz.*, vol. 63, no. 3, pp. 287–299, 2020, doi: 10.1016/j.bushor.2019.09.004.
60. J. Svanberg *et al.*, “Corporate governance performance ratings with machine learning,” *Intell. Syst. Accounting, Financ. Manag.*, vol. 29, no. 1, pp. 50–68, 2022, doi: 10.1002/isaf.1505.
61. D. V. Fauser and S. Utz, “Risk Mitigation of Corporate Social Performance in US Class Action Lawsuits,” *Financ. Anal. J.*, vol. 77, no. 2, pp. 43–65, 2021, doi: 10.1080/0015198X.2020.1861896.
62. J. E. Koo and E. S. Ki, “Internal Control Personnel’s Experience, Internal Control Weaknesses, and ESG Rating,” *Sustainability*, vol. 12, no. 20, p. 8645, Oct. 2020, doi: 10.3390/su12208645.
63. A. Issa and J. R. Hanaysha, “Breaking the glass ceiling for a sustainable future: the power of women

on corporate boards in reducing ESG controversies," *Int. J. Account. Inf. Manag.*, 2023, doi: 10.1108/IJAIM-03-2023-0053.

64. I. Arribas, M. D. Espinós-Vañó, F. García, and N. Riley, "Do irresponsible corporate activities prevent membership in sustainable stock indices? The case of the Dow Jones Sustainability Index world," *J. Clean. Prod.*, vol. 298, 2021, doi: 10.1016/j.jclepro.2021.126711.
65. G. Dorfleitner, C. Kreuzer, and C. Sparrer, "ESG controversies and controversial ESG: about silent saints and small sinners," *J. Asset Manag.*, vol. 21, no. 5, pp. 393–412, 2020, doi: 10.1057/s41260-020-00178-x.
66. A. Del Giudice and S. Rigamonti, "Does Audit Improve the Quality of ESG Scores? Evidence from Corporate Misconduct," *Sustainability*, vol. 12, no. 14, p. 5670, Jul. 2020, doi: 10.3390/su12145670.
67. M. Alda, "The reaction to CSR controversies by institutional investors," *BRQ Bus. Res. Q.*, 2022, doi: 10.1177/23409444221110588.
68. D. Lee and D. J. Hess, "Measuring corporate social responsibility: an evaluation of a new sustainable development goals index for Fortune 500 companies," *Int. J. Organ. Anal.*, vol. 30, no. 7, pp. 137–154, 2022, doi: 10.1108/IJOA-12-2021-3082.
69. M. Anita, S. Shveta, S. Yadav Surendra, and M. Arvind, "When do ESG controversies reduce firm value in India?," *Glob. Financ. J.*, vol. 55, no. May, p. 100809, 2023, doi: 10.1016/j.gfj.2023.100809.
70. D. Z. X. Huang, "An integrated theory of the firm approach to environmental, social and governance performance," *Account. Financ.*, vol. 62, no. S1, pp. 1567–1598, 2022, doi: 10.1111/acfi.12832.
71. UNWTO, "International Tourism back to 60% of pre-pandemic levels in January-July 2022," *World Tour. Organ.*, vol. 20, no. 5, p. 1, 2022.
72. World Bank, "How COVID-19 is changing the world: a statistical perspective Volume III," *Comm. Coord. Stat. Act.*, vol. 3, 2021.
73. T. TARJO *et al.*, "Explore the Potential for Tourist Scams in Indonesia," *J. Environ. Manag. Tour.*, vol. 14, no. 2, p. 362, Mar. 2023, doi: 10.14505/jemt.v14.2(66).06.
74. D. Khullar, A. M. Bond, and W. L. Schpero, "COVID-19 and the Financial Health of US Hospitals," *JAMA - J. Am. Med. Assoc.*, vol. 323, no. 21, pp. 2127–2128, 2020, doi: 10.1001/jama.2020.6269.
75. A. Rababah, L. Al-Haddad, M. S. Sial, Z. Chunmei, and J. Cherian, "Analyzing the effects of COVID-19 pandemic on the financial performance of Chinese listed companies," *J. Public Aff.*, vol. 20, no. 4, 2020, doi: 10.1002/pa.2440.
76. Z. Liu *et al.*, "Research on optimization of healthcare waste management system based on green governance principle in the covid-19 pandemic," *Int. J. Environ. Res. Public Health*, vol. 18, no. 10, 2021, doi: 10.3390/ijerph18105316.
77. H. El-Ramady *et al.*, "Planning for disposal of COVID-19 pandemic wastes in developing countries: a review of current challenges," *Environ. Monit. Assess.*, vol. 193, no. 9, 2021, doi: 10.1007/s10661-021-09350-1.