

## Research Article

# A Systematic Review of Firm Sustainability Metrics: Analytical Approaches to Performance and Impact Assessment

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## Abstract.

This study aims to identify key factors that influence firm sustainability, examining their impacts and other related relationships. Using a Systematic Literature Review (SLR) approach, the research seeks to determine the most effective sustainability metrics applicable across various industrial sectors and to evaluate their impact on firm sustainability. The review was conducted using articles sourced from the Scopus database, selected based on predetermined criteria. Following a screening process, 20 relevant articles were selected and analyzed in detail, considering elements such as research type, year of publication, methodologies, and key findings. The findings indicate that both internal and external organizational factors can influence firm sustainability. This study contributes to the growing body of knowledge on sustainability by offering insights into effective metrics and framework. It is also intended to support companies in developing strategies to enhance long-term sustainability while enriching the theoretical understanding of sustainability in organizational contexts.

**Keywords:** firm sustainability, sustainability metrics, systematic literature review

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## 1. Introduction

At the moment, the issue of firm sustainability is one of the most topical in numerous management and economic fields of study. This is not only because of climate change and the exhaustion of raw materials but also because of pressure from stakeholders to make business more sustainable. This paper defines firm sustainability as the ability of firms to sustain their performance in the long run; this does not only entail environmental sustainability but also social and economic sustainability [1]. Therefore, sustainability performance must be measured in terms of key performance indicators.

Measuring firms' sustainability using the right metrics is crucial in responding to global challenges. Sustainability measures can include the carbon footprint and waste management on the environmental side, while the social side of sustainability measures



includes labour relations and community responsibility [2]. However, identifying the right metrics for evaluating firms' sustainability still poses a challenge, given that firms operate in different industries and scales [3]. This paper systematically discusses the various measures adopted in evaluating firm sustainability and the analytical techniques used in the process.

Checklists such as the Global Reporting Initiative (GRI) have been popular as a framework of reference when developing sustainability reports [4]. GRI offers specific guidance to companies on quantifying and disclosing their sustainability impacts, making it easier for the company to be more informative in presenting data to the stakeholders. Nevertheless, these standards are not uniform across countries and sectors. Thus, the quality and reliability of sustainability reports are questionable [5].

Other studies have established that organizations implementing sustainability strategies will likely reap several benefits including improved image and more investor appeal [6]. On the other hand, other research works suggest that firms with effective sustainability reporting have better longterm financial performance [7]. Therefore, sustainability measures are not only important for increasing the level of social responsibility but also for increasing the economic performance of businesses.

Nevertheless, some challenges have been observed to hinder the adoption of sustainability reporting. Inconsistencies in the reports are generally due to differences in the interpretation and implementation of sustainability metrics among companies and industry sectors [8]. Moreover, some companies encounter difficulties in gathering the appropriate data to assess the effects of sustainability, particularly in industries where reporting is still inadequate [9]. This underlines the importance of creating new, more effective, flexible measurement approaches and instruments.

To go further, a systematic literature review on sustainability metrics can offer valuable insights into the tools adopted to assess sustainability effects [10]. Thus, the purpose of this literature review is to determine which performance measures can be implemented across different industrial sectors and to assess the influence of these measures on firm sustainability. This approach can assist companies in developing more effective sustainability strategies that can be quantified.

From this research, it is hoped that a positive correlation between the application of sustainability metrics and the enhancement of firm performance will be achieved. Therefore, this systematic review can be used as a reference model for best practices in

evaluating firm sustainability and assisting companies in addressing stakeholder expectations, improving operational performance, and achieving sustainable development objectives.

## 2. Literature Review

Firm sustainability has become a critical area of interest in business studies as companies face increasing pressures to integrate sustainable practices into their core strategies. According to Elkington [11], the concept of sustainability in business extends beyond financial performance and encompasses environmental and social dimensions, forming the foundation of the “triple bottom line” framework. This model suggests that a firm’s success should be measured not only by profit but also by its impact on people and the planet. By focusing on these three pillars, firms can address stakeholder demands for responsible and ethical practices, enhancing their reputation and long-term viability [12]. Additionally, sustainable practices help companies mitigate operational risks, such as regulatory challenges and resource scarcity, which can disrupt business continuity [13]. As a result, sustainability has evolved from a peripheral consideration to a strategic imperative for firms aiming to maintain competitive advantage and resilience.

Implementing sustainability initiatives often requires a firm to innovate in its operations, supply chains, and product offerings. Research by Lozano [14] highlights that firms integrating sustainable practices experience changes in organizational culture and processes, fostering innovation and agility. Furthermore, sustainable firms are more likely to attract and retain skilled employees who value responsible business practices, thereby enhancing organizational capability and resilience [15]. However, transitioning to sustainable operations presents challenges, including the need for initial investments, shifts in corporate mindset, and balancing short-term costs with long-term benefits [16]. Despite these challenges, firms that pursue sustainability can experience a range of benefits, including improved stakeholder relations, brand loyalty, and access to green financing, all contributing to sustained competitive advantage [17].

## 3. Material and Methods

This research uses a qualitative analysis method in the form of a Systematic Literature Review (SLR). SLR is a systematic and systematic approach to finding and assessing all the available literature on a particular research question. The main purpose of SLR is to

give the reader a systematic review of the literature available on a given topic and to answer certain research questions or hypotheses [19-20]. This study focuses on “firm sustainability,” which will serve as the main subject of the research. More specifically, this research aims to uncover the factors that influence and are influenced by firm sustainability.

The literature review will be conducted comprehensively, adhering to the specified guidelines and procedures to achieve the research objectives. The data used in this research is sourced from the Scopus Database. Scopus was chosen because it is one of the largest and most wellknown databases among researchers. For this reason, highquality articles are expected to be obtained, thereby providing precise and accurate answers to the research objectives. In selecting the articles, specific criteria align with the research objectives. Table 1 below details the inclusion and exclusion criteria set for this study.

TABLE 1: Inclusion and Exclusion Criteria.

Inclusion Criteria	Exclusion Criteria
Articles published in the last two years (2023-2024) Articles that are final and have undergone peer review Articles written in English Articles with qualitative, quantitative, or mixed-method approaches Articles that discuss firm sustainability as either the primary or secondary subject	Articles that only display the abstract (closed access) Articles that present incomplete manuscripts Articles that do not discuss firm sustainability at all

The research objectives are expected to be comprehensively addressed by applying the inclusion and exclusion criteria. The method for obtaining data will be explained in the following subsection.

3.1. Data collection procedure

After determining the database and specific criteria, the next step is to extract articles following the established guidelines. As mentioned earlier, the database used in this research is the Scopus Database. In line with the research objectives, the keyword “firm sustainability” was entered into Scopus, explicitly using the following syntax:

*TITLE ( "firm sustainability" )*

This was done to ensure that the articles obtained aligned with the primary research objectives. Once some articles were retrieved and filtered according to the predetermined criteria. The filtering was performed using Scopus’ built-in features. Below is the syntax used for filtering the articles:

*TITLE ( "firm sustainability" ) AND ( LIMIT-TO ( OA , "all" ) ) AND ( LIMIT-TO ( PUBYEAR , 2023 ) OR LIMIT-TO ( PUBYEAR , 2024 ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( PUBSTAGE , "final" ) )*

After filtering based on the established criteria, the next step was to screen all the articles. Of the 22 articles that met the inclusion criteria, 2 were classified under the exclusion criteria. The first article was incomplete, lacking even the authors' names, and was therefore excluded. The second article did not focus on "firm sustainability," so it was also excluded. As a result, 20 articles were selected for analysis on firm sustainability.

4. Results

After the article collection process, following the established procedures and guidelines, 20 articles were obtained after the article collection process. These 20 articles were then comprehensively analyzed on the research theme of firm sustainability. The articles were categorized based on specific criteria, and Table 2 presents a summary of the 20 articles that have been collected and analyzed.

TABLE 2: Summary of 20 Selected Articles.

No	Authors	Title	Types of research	Highlight
1	Azzam [20]	"The association between CEO characteristics and privileges and the extent of firms' sustainability disclosure: The role of board independence"	Quantitative	The age of the CEO has a significant impact on enhancing sustainability disclosure when the board of commissioners is independent.
2	Hariprasad & Doraiswamy [21]	"Examining Internal Stakeholder Influence on Firm Sustainability: The Moderating Role of Organizational Support"	Quantitative	Organizational support does not significantly influence firm sustainability, but employee environmental awareness becomes a key factor.
3	Kotzian [22]	"Firms' sustainability engagement and sustainability-related controversies"	Quantitative	The level of involvement in sustainability significantly helps companies avoid sustainability-related controversies; however, factors such as company size and country of origin have a major influence, which is not entirely within the company's control.

TABLE 2: Continued.

No	Authors	Title	Types of research	Highlight
4	Magnano [23]	"Disentangling circular economy practices and firm's sustainability performance: A systematic literature review of past achievements and future promises"	Qualitative	The research found that R&D, digital technology, and stakeholder pressure significantly influence the relationship between circular economy practices and sustainability performance.
5	Jha & Verma [24]	"Social Media Platforms and User Engagement: A Multi-Platform Study on One-way Firm Sustainability Communication"	Quantitative	One-way sustainability communication on social media platforms. Different sustainability communication on Twitter and Facebook affects user engagement differently.
6	Wang & Wang [25]	"Supply chain agility as the antecedent to firm sustainability in the post-COVID-19"	Quantitative	Supply chain agility and relationships have a positive impact on firm sustainability, ultimately helping to reduce the effects of the pandemic.
7	Collevecchio [26]	"Sustainable Governance: Board Sustainability Experience and the Interplay with Board Age for Firm Sustainability"	Quantitative	The sustainability experience of board members and the age of the board. Younger boards amplify the positive impact of sustainability experience, while older boards diminish this effect.
8	Liu [27]	"Green procurement or green supply? A meta-analysis of their impacts on firm sustainability performance"	Quantitative	Green procurement and green supply have varying impacts on a company's sustainability performance in financial, environmental, operational, and social aspects.
9	Wang [28]	"Does Increasing Supply Chain Flexibility Contribute to the Enhancement of a Firm's Sustainability Performance?"	Quantitative	Supply chain flexibility, supply chain visibility, and supply chain agility. Supply chain flexibility does not always have a positive impact on firm sustainability.
10	Ishak [29]	"Green policy effect on firm sustainability: examining the stock performance of ESG adopters in the heavy-polluter industry in Malaysia"	Quantitative	Green policy effect on firm sustainability
11	Pletnev & Naumova [30]	"High-growth firms' sustainability and efficiency in the Russian energy sector during pandemic"	Quantitative	Gazelles (high-growth firms' sustainability) outperform in terms of growth, profitability, solvency, and job creation, but efficiency does not differ significantly.
12	Mwesiumo [31]	"Unravelling the black box between coopetition and firms' sustainability performance"	Quantitative	Competition enhances dynamic capabilities, and sustainability awareness fully mediates the relationship between competition and sustainability performance.

TABLE 2: Continued.

No	Authors	Title	Types of research	Highlight
13	Wen [32]	"The Moderating Role of Ownership Concentration on Financing Decisions and Firm's Sustainability: Evidence from China"	Quantitative	Firm sustainability is influenced by financing decisions, where debt funding positively impacts ESG performance. Additionally, ownership concentration moderates the relationship between debt funding and sustainability, while equity funding shows inconsistent relationships.
14	Zhuang [33]	"Examining Firms' Sustainability Frontier: Efficiency in Reaching the Triple Bottom Line"	Quantitative	Sustainability efficiency decreases when sustainability performance increases but rises again after a certain threshold is reached.
15	Toumi [34]	"The role of Fintech firms' sustainability during the COVID-19 period"	Quantitative	Environmental disclosure is crucial in improving market sustainability performance during the pandemic.
16	Velinov & Strach [35]	"Diversity and Inclusion Practices as a Booster for Firm Sustainability: Evidence from the Czech Automotive Sector"	Quantitative	Diversity and inclusion are essential steps for strategic sustainability development in the Czech automotive sector.
17	Zhou [36]	"Does ESG Impact Firms' Sustainability Performance? The Mediating Effect of Innovation Performance"	Quantitative	Innovation fully mediates the relationship between ESG and sustainability.
18	Agoraki et al. [37]	"Firms' sustainability, financial performance, and regulatory dynamics: Evidence from European firms"	Quantitative	Firm sustainability is influenced by ESG reputational risk, with lower risks improving financial performance and reducing information asymmetry. ESG regulations in the European Union and the challenges of COVID-19 demonstrate that firm sustainability strengthens market trust and reduces financial risk.
19	Owousu Yeboah [38]	"Social media marketing, value creation and firm's sustainability performance: a study among young consumers"	Quantitative	Social media marketing: Plays a role in enhancing sustainability performance. Value co-creation: Contributes to improved sustainability. Value co-destruction: Has a negative effect on sustainability.
20	Adjei-Bamfo [39]	"Public procurement for innovation through supplier firms' sustainability lens: A systematic review and research agenda"	Qualitative	The balance between competition and innovation in public procurement can enhance the sustainability of supplier firms.

Based on the table above, it can be observed that there are various article titles related to firm sustainability. These 20 articles were collected, analyzed, and categorized based on specific criteria. The table above provides information that the 20 articles studied utilized two research methods: quantitative and qualitative. The majority of the

articles employed a quantitative approach, as evidenced by the fact that 18 of the articles used quantitative methods, while only 2 employed qualitative approaches. The table also indicates that research related to firm sustainability can be conducted across various sectors. However, the table does not provide clear information on this aspect. Therefore, Figure 1 illustrates the 20 articles based on subject areas.

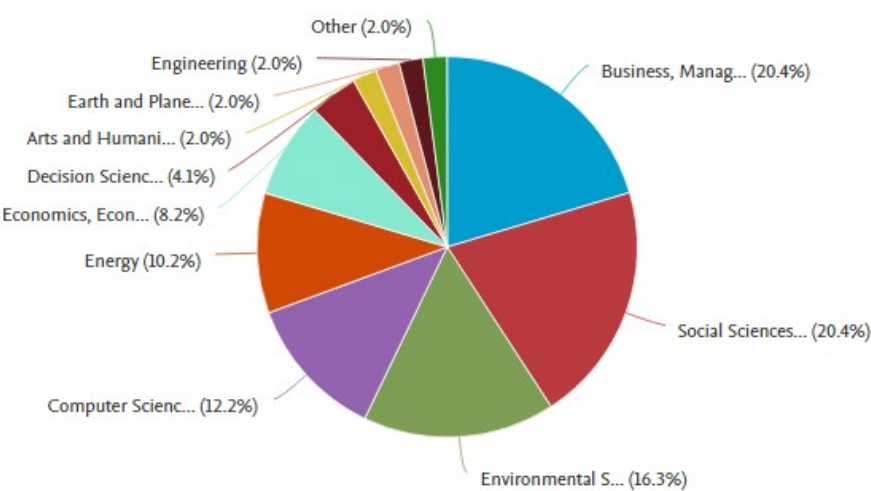


Figure 1: Article by Subject Area.

Based on the figure above, the majority of the 20 articles fall under the subjects of “Business, Management and Accounting,” “Social Science,” “Environmental Science,” and “Computer Science.” This indicates that research on firm sustainability can be conducted across various industrial sectors. Furthermore, these 20 articles are also sourced from a wide range of journals. The complete sources of these 20 journals are presented in Table 3.

The majority of the selected 20 journals were published by “Sustainability,” with a total of 3 documents. Meanwhile, “Business Strategy and the Environment” published 2 articles. The remaining journal sources each published 1 article, ranging from “Aslib Journal of Information Management” to “Uncertain Supply Chain Management.” Additionally, the 20 selected articles were also grouped by country. China continues to dominate as the country with the highest number of publications, totalling 4 articles, followed by Denmark with 3 articles. Meanwhile, countries such as India, Malaysia, Norway, and Spain each contributed 1 journal. The distribution of articles by country is presented in Figure 2.



TABLE 3: Summary Article by Source.

Source	Number of Articles
Sustainability Switzerland	3
Business Strategy And The Environment	2
Aslib Journal Of Information Management	1
Cogent Economics And Finance	1
E3s Web Of Conferences	1
Environmental Science And Pollution Research	1
IEEE Transactions On Engineering Management	1
Industrial Marketing Management	1
Information Systems Frontiers	1
International Journal Of Logistics Management	1
International Journal Of Logistics Research And Applications	1
Journal Of Business Ethics	1
Journal Of Environmental Management	1
Journal Of International Money And Finance	1
Qubahan Academic Journal	1
Review Of Economic Perspectives	1
Uncertain Supply Chain Management	1
Total	20

Documents by country or territory

Compare the document counts for up to 15 countries/territories.

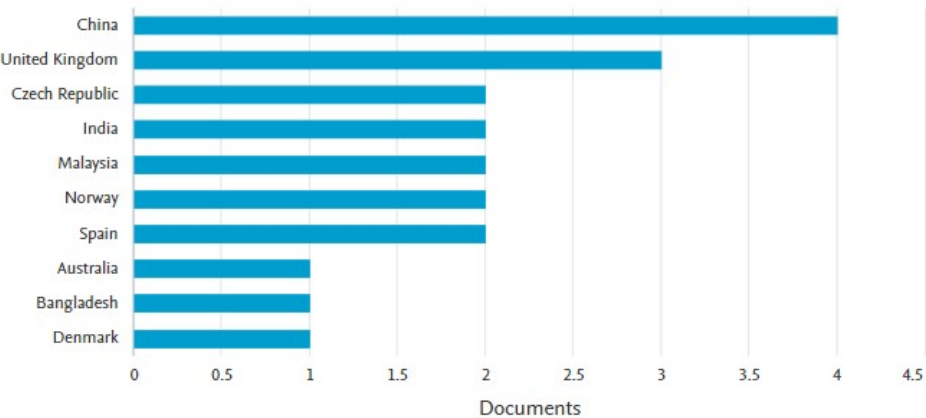


Figure 2: Article Publication by Country or Territory.

#### 4.1. Key determinant firm sustainability

Based on the analysis of the 20 articles, several key factors or keywords related to firm sustainability were identified. These keywords are particularly interesting for further research, offering opportunities for innovation. These keywords can serve as a foundation for research on firm sustainability and can also act as a reference for companies in promoting corporate sustainability. The keywords identified can become determinant factors that influence “firm sustainability.” Thus, the identification of these key or determinant factors has successfully addressed the objectives of this research. Table 4 presents the factors that can influence firm sustainability, which will be explained in detail in the following subsections.

TABLE 4: Key Determinants of Firm Sustainability.

Key Factors	Authors
CEO Characteristics	Azzam [20]
Employee Environmental Awareness	Hariprasad & Doraiswamy [21]
Firm Size and Country of Origin	Kotzian [22]
Digital Technology R&D and Stakeholder Pressure	Magnano [23]
Social Media Communication (One-way)	Jha & Verma [24]
Supply Chain Agility	Wang & Wang [25]
Board Sustainability Experience and Board Age	Collevecchio [26]
Green Procurement and Green Supply	Liu [27]
Supply chain Flexibility, Visibility, and Agility	Wang [28]
Green Policy	Ishak [29]
Coopetition	Mwesiumo [31]
Financing Decisions (Debt and Equity)	Wen [32]
Triple Bottom Line Efficiency	Zhuang [33]
Environmental Disclosure	Toumi [34]
Diversity and Inclusion	Velinov & Strach [35]
Innovation Performance	Zhou [36]
ESG Reputational Risk	Agoraki [37]
Social Media Marketing	Owousu Yeboah [38]
Public Procurement for Innovation	Adjei-Bamfo [39]

## 5. Discussion and Conclusion

Based on the literature review's results, firm sustainability has become an increasingly important aspect across various industries. Previous studies have explained that firm sustainability can be influenced by multiple factors, both internal and external. For example, [20] mentioned that CEO characteristics (such as age and compensation) were found to influence the extent to which a company implements sustainability practices. This highlights the critical role of leadership in shaping the direction of sustainability policies.

Additionally, employee environmental awareness is identified as a key factor driving companies to adopt better sustainability practices [21]. However, organizational support does not always have a significant impact, suggesting that individual internal motivation plays a more crucial role in influencing sustainability. We also found stakeholder pressure and R&D in digital technology to be important in shaping circular economy practices that directly affect sustainability performance [23].

The ability to be agile in the supply chain has been proven to help a company be more resilient to the many challenges including the impact of the COVID-19 pandemic [18]. In addition, supply chain flexibility has different effects on sustainability based on different contextual factors [28].

In addition, this research also identifies other external variables that may affect firm sustainability, including green policies and green procurement. The social, environmental, and financial aspects of firm sustainability are significantly contributed by these factors [27, 29]. Social media and user engagement are increasingly being seen as a communication tool that influences a firm's sustainability, especially in the context of co-creation and co-destruction [38].

The results of this study indicate that firm sustainability is a function of a mix of internal factors (e.g., leadership characteristics and a firm's dynamic capabilities) and external factors (e.g., stakeholder pressure and environmental policies). This analysis indicates that a holistic approach is needed to understand and improve firm sustainability.

## 6. Implication

The results of this study show that leadership and governance are important factors in determining the firm's sustainability as CEO characteristics and board members'

experience affect sustainability practices [20, 26]. It can be a reference for companies and organizations that want to achieve their sustainability goals. The research suggests that companies should invest in leaders with sustainability expertise and that governance structures should match sustainable practices. Investing in employee engagement through environmental awareness programs can foster an internal commitment to sustainability, which is essential for cultivating a culture of environmental responsibility [21]. This provides companies with the insight that improving internal leadership and employee participation is key to achieving long-term sustainability.

This study is expected to contribute theoretically by reinforcing existing theories. Moreover, it is anticipated to serve as a reference for future theories or research related to firm sustainability. With the changing times, firm sustainability must be prioritized to ensure companies can not only survive but also compete in the future. Therefore, this research aims to provide a theoretical reference on firm sustainability.

## 7. Limitation and Future Research

This study is a qualitative research that focuses on “firm sustainability.” However, some limitations can be addressed in future research. This study only utilized the Scopus database, and the selected articles were open-access. This can be improved by including both open-access and non-open-access articles, and by incorporating other databases such as PubMed or others.

The study identifies key factors or determinants based on the analyzed articles. These can serve as references for future research to conduct holistic and comprehensive studies. Furthermore, future research can explore the relationship between firm sustainability by combining various key factors identified in this study. Additionally, future research could expand the study of firm sustainability across various sectors in both companies and organizations.

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## Conflict of Interest

The authors declare no conflict of interest.

## References

- [1] Montiel I, Delgado-Ceballos J. Defining and measuring corporate sustainability: are we there yet? *Organ Environ.* 2014;27(2):113–39.
- [2] Dyllick T, Muff K. Clarifying the meaning of sustainable business: introducing a typology from business-as-usual to true business sustainability. *Organ Environ.* 2016;29(2):156–74.
- [3] Lozano R, Huisingh D. Inter-linking issues and dimensions in sustainability reporting. *J Clean Prod.* 2011;19(2-3):99–107.
- [4] Herbohn K, Walker J, Loo HY. Corporate social responsibility: the link between sustainability disclosure and sustainability performance. *Abacus.* 2014;50(4):422–59.
- [5] Manetti G, Becatti L. Assurance services for sustainability reports: standards and empirical evidence. *J Bus Ethics.* 2009;87 S1:289–98.
- [6] Eccles RG, Ioannou I, Serafeim G. The impact of corporate sustainability on organizational processes and performance. *Manage Sci.* 2014;60(11):2835–57.
- [7] Clarkson PM, Li Y, Richardson GD, Vasvari FP. Does it pay to be green? Determinants and consequences of proactive environmental strategies. *J Account Public Policy.* 2011;30(2):122–44.
- [8] Milne MJ, Gray R. Whither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *J Bus Ethics.* 2013;118(1):13–29.
- [9] Cho CH, Laine M, Roberts RW, Rodrigue M. The frontstage and backstage of corporate sustainability reporting: Evidence from the Arctic National Wildlife Refuge Bill. *J Bus Ethics.* 2018;152(3):865–86.
- [10] Hahn R, Kühnen M. Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *J Clean Prod.* 2013;59:5–21.
- [11] Elkington J. *Cannibals with forks: The triple bottom line of 21st century business.* New Society Publishers; 1998.

- [12] Bansal P, DesJardine MR. Business sustainability: it is about time. *Strateg Organ*. 2014;12(1):70–8.
- [13] Porter ME, Kramer MR. Strategy and society: the link between competitive advantage and corporate social responsibility. *Harv Bus Rev*. 2006 Dec;84(12):78–92.
- [14] Lozano R. A holistic perspective on corporate sustainability drivers. *Corp Soc Resp Environ Manag*. 2015;22(1):32–44.
- [15] Eccles RG, Ioannou I, Serafeim G. The impact of corporate sustainability on organizational processes and performance. *Manage Sci*. 2014;60(11):2835–57.
- [16] Montiel I, Delgado-Ceballos J. Defining and measuring corporate sustainability: are we there yet? *Organ Environ*. 2014;27(2):113–39.
- [17] Hahn T, Preuss L, Pinkse J, Figge F. Cognitive frames in corporate sustainability: managerial sensemaking with paradoxical and business case frames. *Acad Manage Rev*. 2015;40(2):294–317.
- [18] Rahman A, Santosa TA, Sofianora A, Oktavianti F, Alawiyah R, Putra R, et al. Systematic literature review: TPACK-integrated design thinking in education. *International Journal of Education and Literature*. 2023;2(1):65–77.
- [19] Sari AD, Herman T, Sopandi W, Jupri A. A systematic literature review (SLR): implementasi audiobook pada pembelajaran di sekolah dasar. *Jurnal Elementaria Edukasia*. 2023;6(2):661–7.
- [20] Azzam M. The association between CEO characteristics and privileges and the extent of firms' sustainability disclosure: the role of board independence. *Uncertain Supply Chain Manag*. 2024;12(3):1603–10.
- [21] Hariprasad R, Doraiswamy A. Examining internal stakeholder influence on firm sustainability: the moderating role of organizational support. *Qubahan Academic Journal*. 2024;4(2):184–97.
- [22] Kotzian P. Firms' sustainability engagement and sustainability-related controversies. *Bus Strategy Environ*. 2024;33(3):1610–25.
- [23] Magnano DG, Grimstad SM, Glavee-Geo R, Anwar F. Disentangling circular economy practices and firm's sustainability performance: A systematic literature review of past achievements and future promises. *J Environ Manage*. 2024 Feb;353:120138.
- [24] Jha AK, Verma NK. Social media platforms and user engagement: A multi-platform study on one-way firm sustainability communication. *Inf Syst Front*. 2024;26(1):177–94.

- [25] Wang M, Wang B. Supply chain agility as the antecedent to firm sustainability in the post-COVID-19. *Int J Logist Manag.* 2024;35(1):281–303.
- [26] Collevocchio F, Temperini V, Barba-Sanchez V, Meseguer-Martinez A. Sustainable Governance: board sustainability experience and the interplay with board age for firm sustainability. *J Bus Ethics.* 2024;1–19.
- [27] Liu W, Cao Y, Hou J, Cheng Y, Chan HK, Tang O. Green procurement or green supply? A meta-analysis of their impacts on firm sustainability performance. *International Journal of Logistics Research and Applications* 2024:1-36.
- [28] Wang M, Chan RY, Kumar M, Tsolakis N. Does increasing supply chain flexibility contribute to the enhancement of a firm's sustainability performance? *IEEE Trans Eng Manage.* 2024;71:8606–22.
- [29] Ishak N, Abdul Aziz NA, Ab Rahim F. Green policy effect on firm sustainability: examining the stock performance of ESG adopters in the heavy-polluter industry in Malaysia. *Cogent Econ Finance.* 2024;12(1):2334102.
- [30] Pletnev D, Naumova K. High-growth firms' sustainability and efficiency in the Russian energy sector during a pandemic. In *E3S Web of Conferences* 2023;431:02029.
- [31] Mwesiumo D, Harun M, Hogset H. Unravelling the black box between coopetition and firms' sustainability performance. *Ind Mark Manage.* 2023;114:110–24.
- [32] Wen K, Agyemang A, Alessa N, Sulemana I, Osei A. The moderating role of ownership concentration on financing decisions and firm's sustainability: evidence from China. *Sustainability (Basel).* 2023;15(18):13385.
- [33] Zhuang Y, Denizel M, Montabon F. Examining firms' sustainability frontier: efficiency in reaching the triple bottom line. *Sustainability (Basel).* 2023;15(11):8871.
- [34] Toumi A, Najaf K, Dhiaf MM, Li NS, Kanagasabapathy S. The role of Fintech firms' sustainability during the COVID-19 period. *Environ Sci Pollut Res Int.* 2023 Apr;30(20):58855–65.
- [35] Velinov E, Štrach P. Diversity and inclusion practices as a booster for firm sustainability: evidence from the Czech automotive sector. *Review of Economic Perspectives.* 2022;23(1):71–88.
- [36] Zhou S, Rashid MH, Zobair SA, Sobhani FA, Siddik AB. Does ESG impact firms' sustainability performance? The mediating effect of innovation performance. *Sustainability.* 2023;15(6):5586.
- [37] Agoraki ME, Giaka M, Konstantios D, Patsika V. Firms' sustainability, financial performance, and regulatory dynamics: evidence from European firms. *J Int Money*

Finance. 2023;131:102785.

- [38] Owusu Yeboah AY, Kwarteng MA, Novak P. Social media marketing, value creation and firm's sustainability performance: A study among young consumers. *Aslib J Inf Manag.* 2024;76(2):248–68.
- [39] Adjei-Bamfo P, Djajadikerta HG, Jie F, Brown K, Kiani Mavi R. Public procurement for innovation through supplier firms' sustainability lens: A systematic review and research agenda. *Bus Strategy Environ.* 2023;32(1):387–407.