Can Environmental Performance Protect Shareholder Value During the Covid-19 Pandemic? (A literature Review)

Ayu Dwiny Octary[1], Syaharani Noer Fathia[2], Rona Majidah[3], Harsono Edwin Puspita[4]
{ayu.dwiny@feb.unila.ac.id[1] , syaharani.noer@feb.unila.ac.id[2], rona.majidah@feb.unila.ac.id[3], harsono.edwin@feb.unila.ac.id[4]}

University of Lampung[1], University of Lampung [2], University of Lampung[3], University of Lampung[4]

Abstract. This study aims to measure the influence of whether voluntary disclosure and environmental performance can affect shareholder value. Improved environmental performance is expected to provide access to new markets [1], especially during the economic crisis due to the COVID-19 pandemic. It is hoped that the company's environmental management performance can become positive additional information thereby influencing shareholder value to stimulate the capital market during the COVID19 pandemic. The company's environmental performance on shareholder value has developed into an attraction for researchers in recent years and is growing from year to year [2]. The result indicate that there is a strong and complex interplay between environmental performance, environmental disclosure, and shareholder value. Both sections of the hypothesis development underscore the importance of positive signals, transparency, and responsible practices in enhancing a company's reputation, reducing risk, and ultimately influencing stock market responses and firm value.

Keywords: Environmental Performance, Shareholder Value, Covid-19 Pandemic

Introduction

The spread of the Coronavirus (COVID-19) has been ongoing for 2 years since it was announced by the World Health Organization (WHO) as a global pandemic on March 11, 2020. As of January 2023, the confirmed cases worldwide have exceeded 752 million people, with COVID-19-related deaths surpassing 6 million. Various countries have taken measures to prevent the spread of the coronavirus, including implementing regional and national lockdowns. The Indonesian government has been managing COVID-19 by enforcing Large-Scale Social Restrictions (PSBB) until the implementation of Community Activity Restrictions at various levels.

The other side of implementing community activity restrictions during the pandemic has led to economic slowdown and severe crises, such as a drastic decrease in production, cash flow issues, unemployment, and bankruptcies in various industries worldwide [3]. In Indonesia itself, based on a survey conducted by BPS, 82.85% of companies experienced revenue declines, and 6.78% of companies ceased operations due to the COVID-19 pandemic. In line with this, the Financial Services Authority (OJK) stated that the COVID-19 pandemic crisis had significant global impacts, including on the Composite Stock Price Index (CSPI). Transaction volumes

ICEBE 2023, September 13-14, Bandar Lampung, Indonesia
Copyright © 2023 EAI
DOI 10.4108/eai.13-9-2023.2341205

sharply declined from 36,534,971,048 in 2019 to 27,495,947,445 in 2020. This indicates that investors were concerned about the market conditions during the pandemic.

Corporate environmental performance has gained increasing attention since the Earth Summit in Rio De Janeiro in 1992, which focused on monitoring production patterns, using alternative energy to mitigate global climate change, and reducing greenhouse gas emissions. Since then, governments of various countries have started regulating policies across sectors to achieve the goal of reducing the impacts of global climate change. Even during the COVID-19 pandemic crisis, RM Karliansyah, the Director General of Pollution Control and Environmental Damage (KLHK), ensured that efforts to manage environmental impacts remained a necessity to be adhered to by management. Improving environmental performance is expected to provide access to new markets [1], especially during economic crises like the COVID-19 pandemic, where environmental performance is anticipated to be a positive factor influencing shareholder value.

The issue of corporate environmental performance's impact on shareholder value has become an intriguing topic for researchers in recent years and has been evolving from year to year [2], [4]–[7]. Investors view environmental performance announcements as positive, leading to an increase in abnormal returns [8]; investors are more consistent in reacting to negative information related to corporate environmental performance [1], [9]. Corporate environmental performance has a positive and significant impact on company reputation [10]. On the other hand, Hassel et al. [11] concluded that information about corporate environmental performance is not very meaningful to investors in decision-making. Furthermore, there is a need for further research on the influence of environmental performance on shareholder value [4]. Moreover, these studies only tested this relationship under normal economic conditions. Therefore, this study aims to fill the empirical evidence gap regarding the impact of environmental performance on investor assessment during the economic crisis caused by the COVID-19 pandemic in Indonesia.

This study aims to discover empirical evidence of the relationship between corporate environmental performance and shareholder value during the COVID-19 pandemic. Environmental performance in this study is examined using two variables: voluntary disclosure in separate Annual Reports or Sustainability Reports, and the PROPER rating of corporate environmental performance.

The results of this research are expected to contribute in the following ways: First, enriching the literature on the influence of environmental performance on shareholder value. Second, providing contributions to companies by informing them of the extent to which their environmental efforts are positively evaluated by investors. Third, contributing to policymaking for regulators, especially the Government's Ministry of Environment, as an evaluation material regarding the utility of the PROPER rating as a benchmark for corporate environmental performance.

1. Literature and Theoretical Framework

1.1. Signalling Theory

Spence in 1973 [12], no date specified. The signaling theory was first introduced, explaining that the information sender provides signals in the form of data and information that reflect the company's condition and are useful for investors, the receivers. According to Brigham and Houston (2011), the signaling theory interprets management's view of future company improvements when they can influence potential investors' reactions to the company.

Announcements sent by the company and responded to by investors are examined beforehand and assessed whether the data pathway can be determined as a positive signal (good information) or a negative signal (bad information).

1.2. Environmental Performance

Various measurements of environmental performance have been used in previous research, such as the ISO 14001 certificate [1], indices issued by the Swedish firm CaringCompany (CC) Research [11], Dow Jones Sustainability Index (DJSI) [13]; company participation in the USEPA Climate Leaders Program [14]; and KLD STATS [15]. These studies utilize information generated by third parties that are considered more independent and objective compared to voluntary disclosures by internal management.

The Ministry of Environment launched an industrial performance ranking evaluation program in environmental management called PROPER. In a press statement in 2011, the Ministry of Environment explained that PROPER is an environmental compliance program for companies that is publicly disclosed, allowing the public to evaluate a company's performance in minimizing negative environmental impacts according to the achieved PROPER rating. Based on the Regulation on PROPER issued by the Minister of Environment No. 5 of 2011, PROPER ratings are categorized as: Gold (5), Green (4), Blue (3), Red (2), and Black (1).

1.3. Environmental Disclosure

Environmental Disclosure is information voluntarily published by companies about how they manage waste and other negative impacts of their operations to avoid environmental pollution. Companies are obligated to provide comprehensive reports that contain substantial matters to stakeholders and shareholders. The intended reports are sustainability reports or continuous reports, which encompass disclosure about economic, social, and environmental aspects. The Global Reporting Initiative (GRI) is the primary reference for crafting sustainability reports, and its standards have undergone several revisions to become GRI G4. GRI G4 consists of components that companies are required to complete, covering various multidimensional categories and aspects.

Reporting within the sustainability report is divided into 6 dimensions of disclosure (GRI G4, 2016): economic category, environmental category, social category, human rights category, society category, and product responsibility category. This study focuses on the disclosure of environmental categories in sustainability reports. The GRI standards for environmental indicators consist of eleven aspects: materials, biodiversity, water, energy, emissions, effluents and waste, products and services, compliance, transportation, and supplier environmental assessment.

1.4. Shareholder Value

The argument in support of corporate management to create shareholder value originated in the United States in the 1980s [16]. Companies generate shareholder value when the return on invested capital (ROIC) exceeds its opportunity cost [17]. Shareholder value is a financial value obtained by investors from their ownership of shares in a company. According to Emengini et al [18], a primary and significant achievement for a company is to enhance both the company's

value and shareholder value through dividend payments, stock price increases, and maximizing profits. Shareholder value can be obtained using the Tobin's Q measurement, which has been widely used as a measure of economic, marketing, and management performance to test the effects of strategic choices on shareholder value [19]. Tobin's Q represents the market value of a company divided by its book value [20]. Tobin's Q is considered a forward-looking, riskadjusted measure that can be compared across companies and is grounded in economic theory. Consequently, the use of Tobin's Q has become increasingly common in industrial companies and marketing literature [19].

2. Hypothesis Development

2.1. Environmental Performance and Shareholder Value

The stock market responds differently to companies that effectively manage the residues from their operations compared to companies with poor environmental performance [21]. Information disclosed to the public is useful for investment decision-making by providing signals to investors [22]. During a press release, investors first interpret and analyze the statements as either a positive signal (good information) or a negative signal (bad information). The reason companies are motivated to announce financial information to the public can be explained by signaling theory.

Environmental performance significantly and positively affects a company's reputation [10]. Environmental performance is seen as information that can convey a positive signal to investors, serving as additional information for investment decision-making. Companies that achieve higher environmental performance ratings signal to investors that their management aligns with global sustainability goals, leading investors to believe that the company is committed to longterm prospects.

Several previous research findings consistently support the hypothesis that environmental performance is positively related to stock prices. For instance, research by [23] found that companies with low pollution levels tend to gain additional economic benefits, whereas the opposite is true for highly polluting companies. Habib Jouber, 2023 [24] found a positive association between environmental sustainability performance and shareholder value but he found difference result between Anglo-American and European Economies. This is supported by other studies that yield similar results, indicating that a company's environmental performance influences stock price movements in a positive direction [4], [25], [26].

Research regarding to the effect of environmental performance to the shareholder value show that Environmental performance can help companies be cost-effective and flexible, which can contribute to their survival during a pandemic [27]. Inline with June, Qiu et al (2021)[28] find that companies CSR activities effectively increase firm value showed in the stock returns, companies can invest to the CSR during pandemic to protect communities. Environmental performance can increase trust between a firm and its stakeholders and result in increased external financing [29]. The impact of a firm's environmental performance is more pronounced in sensitive industries (hospitality and retail) [30].

2.2. Environmental Disclosure and Shareholder Value

From an economic perspective, companies will only disclose information to the public if that information can have a positive impact on the company. Social accountability reporting is important additional information for a company's value [31]. In signaling theory, management possesses richer qualitative information about the company compared to external parties, and they use certain measurements to imply the company's quality. Environmental disclosure in a Sustainability Report is seen as data that, if indicating good quality, becomes a basis for decision-making and is integrated into enhancing the company's value, reflecting shareholder value.

According to the Global Reporting Initiatives (GRI), as outlined in 2013, a sustainability report is information published by a company or organization regarding economic performance, environmental performance, and social performance resulting from the company's operational activities in the normal cycle. Each of these performances will be detailed through indicators for each component. Several previous studies support the hypothesis that information in sustainability reports can reduce information asymmetry for users of the reports, thus facilitating investment decision-making. Kaspereit & Lopatta (2016)[32] state that there is a statistically significant positive relationship between disclosing sustainability reports and market value, and several other studies have found similar and supporting results [31], [33]. In Malaysia, Atan et al. (2018)[34] studied ESG issues and financial performance of public limited companies, finding a modest connection between sustainability reporting and profitability and firm value, but a positive relationship with the firm's cost of capital.

ESG reporting transparency helps reduce the volatility and better resist to extreme shocks, but does not necessarily improve stock performance [35]. Firms tend to disclose environmental information on their websites when faced with an environmental crisis (2011). Environmental disclosure mitigates corporate risk for strongly growing industries [36]. Several Studies report thet ESG stocks are associsted with superior stock performance (higher stock returns and firm value) during pandemic [37].

3. Discussion

The hypothesis development presented focuses on the relationship between environmental performance, environmental disclosure, and shareholder value. The discussion revolves around the effects of these factors on stock market responses, company reputation, investor decisionmaking, and overall firm value. The research draws upon various studies to support its hypotheses and claims. Let's delve into the key points and their implications:

Environmental Performance and Shareholder Value:
The first section highlights that companies with effective environmental management practices tend to receive different responses from the stock market compared to those with poor environmental performance. The signaling theory suggests that companies disclose information to investors to convey positive signals. In this context, higher environmental performance is seen as a positive signal. The hypothesis posits that environmental performance significantly and positively affects a company's reputation, signaling to investors that the company is aligned with sustainability goals.

Several previous studies are cited to support the hypothesis. For example, [23] and other researchers have found positive relationships between environmental performance and stock prices. Jouber's (2023)[24] findings indicate a positive association between environmental sustainability performance and shareholder value, albeit with differences across AngloAmerican and European economies. Other studies by Al-Tuwaijri et al. (2004), Endrikat (2016), and Iatridis (2012) also suggest that environmental performance influences stock price movements positively.

Furthermore, the research discusses how environmental performance can lead to costeffectiveness, flexibility, and increased trust between firms and stakeholders. This aspect becomes particularly relevant during challenging times, such as a pandemic, as evidenced by studies that highlight the connection between environmental performance, CSR activities, and firm value during such periods.

Environmental Disclosure and Shareholder Value:
The second part of the hypothesis development delves into the relationship between environmental disclosure and shareholder value. It suggests that companies disclose information that positively impacts their value. The research emphasizes the importance of sustainability reporting, which provides data on economic, environmental, and social performance. This information helps reduce information asymmetry and supports investment decision-making.

The Global Reporting Initiatives (GRI) and various studies are cited to support this hypothesis. Kaspereit & Lopatta (2016), de Klerk & de Villiers (2012), and Schadewitz & Niskala (2010) find a positive relationship between disclosing sustainability reports and market value. Atan et al. (2018) report a connection between sustainability reporting and profitability, firm value, and the cost of capital.

The research also addresses certain nuances. While ESG reporting transparency reduces volatility and enhances resilience, it may not necessarily improve stock performance. Firms might tend to disclose environmental information when facing crises, indicating that environmental disclosure can help mitigate corporate risk, especially in growing industries.

4. Results and Implications

The discussion and results indicate that there is a strong and complex interplay between environmental performance, environmental disclosure, and shareholder value. Both sections of the hypothesis development underscore the importance of positive signals, transparency, and responsible practices in enhancing a company's reputation, reducing risk, and ultimately influencing stock market responses and firm value. However, the relationship is multifaceted, with different industries, economic contexts, and crises affecting the dynamics.

This research has implications for businesses, investors, and policymakers. Companies that prioritize environmental performance and disclosure can potentially reap benefits in terms of improved reputation, investor confidence, and long-term value. Investors can use environmental performance and disclosure as signals for their investment decisions, understanding the potential impact on a company's financial health and resilience. Policymakers might consider

incentivizing transparent environmental reporting to enhance market efficiency and promote sustainable practices.

In conclusion, the presented hypothesis development contributes to the growing body of literature exploring the intricate connections between environmental factors and shareholder value. It highlights the potential positive impact of responsible environmental practices and disclosure on a company's reputation, investor perceptions, and overall market performance..

References

[1] B. W. Jacobs, V. R. Singhal, and R. Subramanian, "An empirical investigation of environmental performance and the market value of the firm," *J. Oper. Manag.*, vol. 28, no. 5, pp. 430–441, Sep. 2010, doi: 10.1016/j.jom.2010.01.001.

[2] A. Banerjee, P. Niehaus, and T. Suri, "Universal Basic Income in the Developing World," 2019.

[3] T. Papadopoulos, K. N. Baltas, and M. E. Balta, "The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice," *Int. J. Inf. Manag.*, vol. 55, p. 102192, Dec. 2020, doi: 10.1016/j.ijinfomgt.2020.102192.

[4] J. Endrikat, "Market Reactions to Corporate Environmental Performance Related Events: A Meta-analytic Consolidation of the Empirical Evidence," *J. Bus. Ethics*, vol. 138, no. 3, pp. 535–548, Oct. 2016, doi: 10.1007/s10551-015-2598-0.

[5] N. Muhammad, F. Scrimgeour, K. Reddy, and S. Abidin, "The Impact of Corporate Environmental Performance on Market Risk: The Australian Industry Case," *J. Bus. Ethics*, vol. 132, no. 2, pp. 347–362, Dec. 2015, doi: 10.1007/s10551-014-2324-3.

[6] M. E. Porter and C. V. D. Linde, "Toward a New Conception of the EnvironmentCompetitiveness Relationship," *J. Econ. Perspect.*, vol. 9, no. 4, pp. 97–118, Nov. 1995, doi:
10.1257/jep.9.4.97.

[7] D. Williamson, G. Lynch-Wood, and J. Ramsay, "Drivers of Environmental Behaviour in Manufacturing SMEs and the Implications for CSR," *J. Bus. Ethics*, vol. 67, no. 3, pp. 317–330, Oct. 2006, doi: 10.1007/s10551-006-9187-1.

[8] P. L. Yadav, S. H. Han, and J. J. Rho, "Impact of Environmental Performance on Firm Value for Sustainable Investment: Evidence from Large US Firms: Environmental Performance on Firm Value," *Bus. Strategy Environ.*, vol. 25, no. 6, pp. 402–420, Sep. 2016, doi: 10.1002/bse.1883.

[9] N. H. J. Lorraine, D. J. Collison, and D. M. Power, "An analysis of the stock market impact of environmental performance information," *Account. Forum*, vol. 28, no. 1, pp. 7–26, Mar. 2004, doi: 10.1016/j.accfor.2004.04.002.

[10] K. Khanifah, U. Udin, N. Hadi, and F. Alfiana, "ENVIRONMENTAL PERFORMANCE AND FIRM VALUE: TESTING THE ROLE OF FIRM REPUTATION IN
EMERGING COUNTRIES," *Int. J. Energy Econ. Policy*, vol. 10, no. 1, pp. 96–103, Jan. 2020, doi: 10.32479/ijeep.8490.

[11] L. Hassel, H. Nilsson, and S. Nyquist, "The value relevance of environmental performance," *Eur. Account. Rev.*, vol. 14, no. 1, pp. 41–61, Jan. 2005, doi:
10.1080/0963818042000279722.

[12] M. Spence, “Job Market Signaling,” *Q. J. Econ.*, vol. 87, no. 3, p. 355, Aug. 1973, doi: 10.2307/1882010.

[13] M. Robinson, A. Kleffner, and S. Bertels, “Signaling Sustainability Leadership: Empirical Evidence of the Value of DJSI Membership,” *J. Bus. Ethics*, vol. 101, no. 3, pp. 493–505, Jul. 2011, doi: 10.1007/s10551-011-0735-y.

[14] D. M. Keele and S. DeHart, “Partners of USEPA Climate Leaders: an Event Study on Stock Performance,” *Bus. Strategy Environ.*, vol. 20, no. 8, pp. 485–497, Dec. 2011, doi: 10.1002/bse.704.

[15] K. Fisher-Vanden and K. S. Thorburn, “Voluntary corporate environmental initiatives and shareholder wealth,” *J. Environ. Econ. Manag.*, vol. 62, no. 3, pp. 430–445, Nov. 2011, doi: 10.1016/j.jeem.2011.04.003.

[16] W. Lazonick and M. O’Sullivan, “Maximizing shareholder value: a new ideology for corporate governance,” *Econ. Soc.*, vol. 29, no. 1, pp. 13–35, Jan. 2000, doi: 10.1080/030851400360541.

[17] F. Fiordelisi and P. Molyneux, “The determinants of shareholder value in European banking,” *J. Bank. Finance*, vol. 34, no. 6, pp. 1189–1200, Jun. 2010, doi: 10.1016/j.jbankfin.2009.11.018.

[18] E. S. Emengini, N. Modebe, and M. Uche, “Do Drivers of Corporate Governance Influence shareholder Value,” *Eur J Acc.*, vol. 5, no. 3, pp. 41–67, 2017.

[19] V. Mittal, E. W. Anderson, A. Sayrak, and P. Tadikamalla, “Dual Emphasis and the Long-Term Financial Impact of Customer Satisfaction,” *Mark. Sci.*, vol. 24, no. 4, pp. 544– 555, Nov. 2005, doi: 10.1287/mksc.1050.0142.

[20] L. Bebchuk, A. Cohen, and A. Ferrell, “What Matters in Corporate Governance?,” *Rev. Financ. Stud.*, vol. 22, no. 2, pp. 783–827, Feb. 2009, doi: 10.1093/rfs/hhn099.

[21] S. Sarumpaet, M. L. Nelwan, and D. N. Dewi, “The value relevance of environmental performance: evidence from Indonesia,” *Soc. Responsib. J.*, vol. 13, no. 4, pp. 817–827, Oct. 2017, doi: 10.1108/SRJ-01-2017-0003.

[22] H. Jogiyanto, “Teori Portofolio dan Analisis Investasi, Edisi Kesembilan,” *Bpef Yogyak.*, 2014.

[23] P. M. Clarkson, Y. Li, and G. D. Richardson, “The Market Valuation of Environmental Capital Expenditures by Pulp and Paper Companies,” *Account. Rev.*, vol. 79, no. 2, pp. 329–353, Apr. 2004, doi: 10.2308/accr.2004.79.2.329.

[24] H. Jouber, “Environmental sustainability performance and shareholder value: an international fuzzy-set qualitative comparative analysis,” *EuroMed J. Bus.*, 2023.

[25] S. A. Al-Tuwaijri, T. E. Christensen, and K. E. Hughes, “The relations among environmental disclosure, environmental performance, and economic performance: a simultaneous equations approach,” *Account. Organ. Soc.*, vol. 29, no. 5–6, pp. 447–471, Jul. 2004, doi: 10.1016/S0361-3682(03)00032-1.

[26] G. E. Iatridis, “Environmental disclosure quality: Evidence on environmental performance, corporate governance and value relevance,” *Emerg. Mark. Rev.*, vol. 14, pp. 55– 75, Mar. 2013, doi: 10.1016/j.ememar.2012.11.003.

[27] J. P. K. Tam and Y. Fernando, “Ecological performance as a new metric to measure green supply chain practices,” in *Encyclopedia of Information Science and Technology, Fourth Edition*, IGI Global, 2018, pp. 5357–5366.

[28] S. (Charles) Qiu, J. Jiang, X. Liu, M.-H. Chen, and X. Yuan, “Can corporate social responsibility protect firm value during the COVID-19 pandemic?,” *Int. J. Hosp. Manag.*, vol. 93, p. 102759, Feb. 2021, doi: 10.1016/j.ijhm.2020.102759.

[29] N. H. Wellalage, V. Kumar, A. I. Hunjra, and M. A. S. Al-Faryan, “Environmental performance and firm financing during COVID-19 outbreaks: Evidence from SMEs,” *Finance Res. Lett.*, vol. 47, p. 102568, Jun. 2022, doi: 10.1016/j.frl.2021.102568.

[30] N. H. Wellalage and V. Kumar, “Does it pay to be green? Environmental performance and firm financing during COVID-19 outbreaks,” Oct. 2020, doi: 10.21203/rs.3.rs-83297/v1.

[31] H. Schadewitz and M. Niskala, “Communication via responsibility reporting and its effect on firm value in Finland,” *Corp. Soc. Responsib. Environ. Manag.*, p. n/a-n/a, 2010, doi: 10.1002/csr.234.

[32] T. Kaspereit and K. Lopatta, “The value relevance of SAM’s corporate sustainability ranking and GRI sustainability reporting in the European stock markets,” *Bus. Ethics Eur. Rev.*, vol. 25, no. 1, pp. 1–24, Jan. 2016, doi: 10.1111/beer.12079.

[33] M. De Klerk and C. De Villiers, “The value relevance of corporate responsibility reporting: South African evidence,” *Meditari Account. Res.*, vol. 20, no. 1, pp. 21–38, Jun. 2012, doi: 10.1108/10222521211234200.

[34] R. Atan, M. M. Alam, J. Said, and M. Zamri, “The impacts of environmental, social, and governance factors on firm performance: Panel study of Malaysian companies,” *Manag. Environ. Qual. Int. J.*, vol. 29, no. 2, pp. 182–194, 2018.

[35] T.-H.-V. Hoang, E. e A. Segbotangni, and A. Lahiani, “Does ESG Disclosure Transparency Help Mitigate the COVID-19 Pandemic Shock? An Empirical Analysis of Listed Firms in the UK,” *SSRN Electron. J.*, 2020, doi: 10.2139/ssrn.3738256.

[36] Y. Chang, X. Du, and Q. Zeng, “Does environmental information disclosure mitigate corporate risk? Evidence from China,” *J. Contemp. Account. Amp Econ.*, vol. 17, no. 1, p. 100239, Apr. 2021, doi: 10.1016/j.jcae.2020.100239.

[37] H. Mounir and H. Ali, “Corporate immunity during crises and pandemics: does ESG matter? Literature review and future prospects,” *Manag. Amp Sustain. Arab Rev.*, Dec. 2022, doi: 10.1108/msar-10-2022-0047.