Finance, Accounting and Business Analysis

Finance, Accounting and Business Analysis
Volume 5 Issue 2, 2023
http://faba.bg/
ISSN 2603-5324

Environmental Accounting and its Impact to Firm Value: Study of Environmentally Sensitive Companies in Indonesia

Diajeng Fitri Wulan[1*], Reni Oktavia[2], Usep Syaipudin[3], Adilah Sabrina Muti'ah[4]
Accounting Department, University of Lampung, Indonesia[1]
Accounting Department, University of Lampung, Indonesia[2]
Accounting Department, University of Lampung, Indonesia[3]
Accounting Department, University of Lampung, Indonesia[4]
* Corresponding author

Info Articles

History Article:
Submitted 28 August 2023
Revised 29 November 2023
Accepted 9 December 2023

Keywords:
Firm Value, Environmental Cost, Eco-efficiency, CSR, Environmental Performance

JEL: M41, Q56, G32.

Abstract

Purpose: This research aims to explore more about the escalating investor interest in environmental risks and their recognition of a company's environmental performance as pivotal to its long-term viability.
Design/Methodology/Approach: Utilizing multiple regression analysis, we investigate the influence of environmental cost, eco-efficiency, corporate social responsibility (CSR), and environmental performance on a company's value.
Originality: The originality and value of this research lie in its exploration of the increasing investor interest in environmental considerations and their recognition of a company's environmental performance as a key determinant of its long-term viability.
Findings: Our findings reveal a positive impact of these factors on overall company value, suggesting that improvements in environmental performance, eco-efficiency, and transparent reporting of environmental expenses and CSR contribute significantly to a firm's market valuation.
Practical Implication: This underscores the critical role of open and honest communication about environmental practices in attracting investors and enhancing a company's market standing. The company should highlight the importance of integrating environmentally responsible practices into business strategies for sustained success and investor appeal.
Limitation and suggestion: Notably, the study is limited to environmentally conscious businesses, signaling the necessity for future research to broaden its scope for a more comprehensive evaluation of these relationships across diverse industries.
Paper Type: Research Paper

* Address Correspondence:
E-mail : diajengfitriw@gmail.com[1]
renioktavia@gmail.com[2]
usepsyaipudin@gmail.com[3]
adilahsabrinamutiah08@gmail.com[4]

INTRODUCTION

Recently, there has been a noticeable surge in investor attention and recognition of the potential risks associated with environmental problems and other non-financial considerations such as social responsibility and effective corporate governance. This circumstance compels organizations to intensify their endeavors and prioritize the non-financial dimensions of company success that are closely associated with company worth. Based on the findings of (Aydoğmuş et al. 2022; Benkraiem et al. 2023; Cahyani and Mayangsari 2022; Yousaf 2021), there is a growing expectation among various stakeholders, including investors, employees, suppliers, customers, and the government, for enterprises to prioritize and evaluate their performance in terms of both financial and non-financial aspects. Consequently, numerous organizations seek to adopt ethical and sustainable business practices with a long-term outlook, emphasizing the integration of environmental, governance, social, and community considerations (Sugianto et al. 2022).

According to (Felisha and Rossieta 2018; Schneider 2008), companies that exhibit subpar environmental performance are often perceived as precarious and are unlikely to sustain themselves in the long run. The presence of these erroneous beliefs and unrealistic expectations will have a detrimental impact on the overall worth of the organization. In light of significant public scrutiny and demanding market expectations, organizations must carefully deliberate strategies to effectively address market demands (Li et al. 2020). This entails the provision of advantageous outcomes while concurrently ensuring the sustainable preservation of the environment. Based on the findings of (Abdi et al. 2020), it can be observed that investors exhibit a significant degree of sensitivity toward companies' ability to meet their obligations to stakeholders, particularly regarding the sustainability of the company. It is widely anticipated that firms, particularly those that are publicly traded, should take into account strategies related to environmental conservation and implement practices and initiatives aimed at enhancing their environmental performance (Abdelhalim et al. 2023; Jabbour et al. 2018; Shen and Chen 2020).

According to (Nguyen et al. 2021), legitimacy theory posits that corporations demonstrate a commitment to environmentally responsible practices to satisfy the demands of company stakeholders and align with societal norms and interests. Moreover, the concept of legitimacy theory, as discussed by (Liao et al. 2015), posits that a firm's dedication to enhanced environmental accountability has the potential to bolster its legitimacy and corporate image by fostering positive business associations with external stakeholders. In order to fulfill the expectations of a company's stakeholders, organizations have the option to implement environmental-based accounting practices as a means of attaining favorable environmental performance (Okafor, 2018). Environmental accounting is utilized to attain sustainable development, foster positive community relations, and execute environmental conservation efforts in a successful and efficient manner. Accounting professionals face the task of allocating expenses in a manner that aligns with societal norms and interests. Consequently, the significance of environmental reporting and accounting has become increasingly pronounced in recent years (Bassey et al. 2013; Riyadh et al. 2020). Environmental accounting promotes improved corporate management by emphasizing the consideration of many stakeholders' interests, primarily focusing on assessing the environmental consequences of managerial actions. The necessity for government assistance in enhancing the environmental performance of the enterprise, which is intricately linked to the community, is substantiated. The current administration in Indonesia has implemented a green economy, also known as a green economy, as a plan for economic change. The concept of a green economy refers to an economic state that aims to uphold a harmonious equilibrium between the welfare of society and the preservation of the environment (Dewi et al. 2023).

Establishing a green economy in Indonesia is underpinned by several legal frameworks, including POJK 51/POJK.03/2017, which pertains to the execution of sustainable finance for financial institutions, issuers, and public companies. Additionally, OJK Circular No. 16/SEOJK.04/2021 has been introduced to amend Financial Services Authority Regulation Number 57/POJK.04/2020, which addresses securities offerings through crowdfunding services based on information technology. The Otoritas Jasa Keuangan (OJK), as the regulatory body overseeing the implementation of the capital market in Indonesia, has established a set of strategic plans to promote corporate sustainability. These plans are outlined in the Roadmap for Sustainable Finance in Indonesia (2015-2019) and further developed in the Roadmap for Sustainable Finance in Indonesia Phase II (2021-2025). Implementing green economy principles will enhance the company's environmental performance and influence its perceived value among the general public. The trust and satisfaction of the general public towards firm products are contingent upon their favorable environmental performance. The adverse environmental performance will have implications for individuals who opt to abstain from utilizing products deemed environmentally unfriendly and capable of causing harm to ecosystems (Aini and Faisal 2021). Subsequently, this endeavor in environmental management represents one of the company's measures of responsibility aimed at garnering stakeholder support to generate a favorable influence on enhancing firm value (Kim et al. 2021; Septianingrum 2022).

Prior research has been undertaken to examine the impact of different corporate environmental initiatives on the valuation of firms. Several studies have examined the relationship between a company's environmental performance and value. (Chouaibi et al. 2022) conducted research in the UK and Germany, while (Kim et al. 2021) conducted a similar study in Korea. (Agyemang et al. 2021) focused on China, and (Shabbir and Wisdom 2020) conducted their research in Nigeria. These studies collectively suggest a positive association between a company's environmental performance and value. Additionally, research conducted in Indonesia by (Ermaya and Mashuri 2020; Harahap et al. 2019; Utomo et al. 2020; Wahidawati and Ardini 2021) also support this finding. Contrary to the findings of previous studies (Aini and Faisal 2021; Fahad and Busru 2021), it is evident that various factors may contribute to this discrepancy. These factors encompass the absence of proactive initiatives by companies about environmental and social endeavors, the dearth of a sustainable investment culture among investors, and a lack of consumer sensitivity and awareness regarding corporate social responsibility practices.

Several other studies also examine the environmental costs associated with implementing corporate environmental accounting. Environmental costs are utilized by companies as financial resources to implement a range of programs and initiatives focused on the environment to benefit the community. The study conducted by (Hapsari and Kurniawan 2020; Nababan and Hasyir 2019) revealed a favorable correlation between environmental expenses and corporate value and performance. Contrarily, alternative studies done by (Okafor 2018; Siagian 2021) yielded contrasting results, as they observed that heightened environmental expenses had a detrimental impact on the organization's financial performance, leading to an escalation in expenditure items.

The company's eco-efficiency can provide further insights into its environmental endeavors, encompassing environmental performance and costs and other initiatives undertaken in this domain. The concept of eco-efficiency underscores a company's capacity to meet consumer demands while simultaneously reducing the environmental impact of its production processes and addressing stakeholder and governmental pressures (Abdelhalim et al. 2023; Vásquez et al. 2019). The study conducted by (Safitri and Nani 2021; Yao et al. 2019) revealed a positive correlation between eco-efficiency and company value. This relationship is attributed to the gradual reduction of environmental impact and conservation of natural resources while producing goods and services. As a result, the enhanced eco-efficiency positively influences the perception of the company's value in the public domain. However, contrasting findings were presented by (Abdelhalim et al. 2023; Septianingrum 2022).

Corporate Social Responsibility (CSR) can serve as a strategic initiative for companies to actively engage with the community, thereby enhancing their corporate image. Corporate Social Responsibility (CSR) refers to the practice undertaken by companies to effectively communicate their obligations and duties to various stakeholders (Ikram et al., 2019). Previous studies conducted by (Cahyani and Mayangsari 2022; Gerged et al. 2021) have demonstrated a positive relationship between Corporate Social Responsibility (CSR) and company value. These studies have shown that CSR indicates a company's commitment to societal welfare, employee well-being, and environmental sustainability, thereby fulfilling its social obligations. However, contrasting findings have been reported by (Fahad and Busru, 2021; Kraus et al. 2020), who attribute the differing results to investor backgrounds and preferences variations.

Environmental innovation refers to a company's collective endeavor to enhance the quality and sustainability of current products and processes. This is achieved by adopting environmentally conscious practices such as the utilization of eco-friendly raw materials, waste reduction, incorporation of environmentally friendly design principles in product development, mitigation of carbon emissions, and minimizing the consumption of water, electricity, and other essential resources (Rehman et al. 2021). Environmental innovation has a significant role in preserving resources, safeguarding the environment, and fostering financial prosperity. According to (Chouaibi et al. 2022), implementing environmental innovation is a proactive approach to attaining the advantages of sustainable environmental development. The potential of environmental innovation to enhance a company's environmental initiatives and enhance its corporate value has been identified in various studies. (Novitasari and Agustia 2021) researched this topic in Indonesia, while (Guo et al. 2020; Li et al. 2020) explored it in China. (Kraus et al. 2020) investigated the relationship between environmental innovation and corporate value in Malaysia, and (Andries and Stephan 2019) examined it in Belgium.

The main objective of our research is to assess the impact of environmental initiatives on the market value of environmentally sensitive companies listed on the Indonesia Stock Exchange (IDX). With a growing investor focus on environmental considerations and non-financial aspects such as social responsibility and corporate governance, our study seeks to investigate the relationship between environmental performance, eco-efficiency, corporate social responsibility (CSR), and environmental innovation on the market value of these companies. Employing a robust methodology, we employ multiple regression analysis to analyze the quantitative associations between the aforementioned environmental factors and the market valuation of companies in the IDX. By focusing on environmentally sensitive firms, we aim to provide insights into the financial implications of their environmental practices, offering valuable information for investors, policymakers, and company stakeholders. This research is expected to contribute valuable insights into the financial implications of environmentally responsible practices, assisting investors, policymakers, and stakeholders in making informed decisions and fostering sustainable business practices.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Legitimacy Theory

Legitimacy Theory refers to the perspective that organizations seek to establish and maintain legitimacy in the eyes of their stakeholders. The concept of legitimacy theory elucidates the reciprocal relationship, known as the social contract, between firms and the broader general public (Chen and Roberts 2010). Legitimacy can be regarded as a possible advantage or resource that enables a corporation to endure and thrive (Dowling and Pfeffer 1975). The social contract allows firms to align their actions with societal norms and values. Assessing a company's environmental performance is a strategic mechanism employed to acquire and uphold the company's legitimacy among various stakeholders (Ifada et al. 2021; Kuzey and Uyar 2017). In order to safeguard their interests, corporations must align their operations with societal demands and expectations. The Legitimacy Theory posits that corporations must undertake various actions to fulfill public expectations and ensure their long-term viability.

Firm Values

The concept of firm values refers to the guiding principles and beliefs that shape an organization's behavior and decision-making processes. The correlation between the company's value and the level of interest in its social and environmental performance has been highlighted in previous research (Jo et al. 2016). The value of a company is determined by the performance of the company, as indicated by the share price that is influenced by the forces of supply and demand in the stock market. This share price indicates the public's evaluation of the company's performance (Aini and Faisal 2021; Harmono 2022). The significance of firm value lies in its impact on enterprises and their owners, as a higher firm value corresponds to increased profits for shareholders. The valuation of a firm is a reflection of its operational performance and future growth potential, which in turn generates investor interest due to its strong performance. Companies that embrace stringent global environmental regulations exhibit a significantly elevated market worth. Enhanced environmental performance has the potential to augment the value of a company due to its ability to mitigate compliance expenses, produce tax advantages, diminish the likelihood of environmental litigation, and, more broadly, cultivate a corporate reputation aligned with prevailing regulatory frameworks (Habib and Bhuiyan 2017; Kim et al. 2021). Organizations that have implemented environmental accounting practices have gained more legitimacy among their stakeholders, enhancing their ability to access diverse resources, including securing reduced capital costs or tax exemptions (Gerged et al. 2021; Ntim 2016).

Environmental Cost and firm value

The environmental costs encompass the company's internal and external expenses, and all incurred costs are directly associated with environmental harm or conservation efforts (Nababan and Hasyir 2019). Typically, these costs arise due to non-compliance with environmental requirements, resulting in substandard environmental conditions (Ladyve 2020). They encompass a spectrum of organizational expenses related to environmental management, including prevention, planning, expenditures, and remediation of damages. Typically, these expenses encompass the expenditures organizations incur regarding environmental management, including those associated with prevention, expenditure, planning, and remediation of damages. Companies have the potential to mitigate environmental failures by allocating more excellent resources toward preventive and detection efforts via the implementation of robust environmental management systems. In order to maintain operational efficiency and long-term viability, companies must allocate resources towards capital and expenses, which are encompassed within the environmental cost component or corporate social responsibility (CSR). According to (Meiyana and Aisyah 2019), corporations can enhance their corporate performance by effectively and judiciously allocating environmental expenditures. This necessitates a substantial financial investment, but the returns are enduring and yield lasting benefits for the organization. Enhancing performance necessitates a substantial financial investment; nonetheless, this endeavor will yield enduring and permanent advantages for the organization. The allocation of environmental expenses owned by a company has been found to have a positive effect on corporate performance, hence influencing the company's overall value (Hapsari and Kurniawan 2020; Nababan and Hasyir 2019; Okafor 2018). This implies that companies dedicating resources to environmental management not only comply with regulations and ethical standards but also position themselves for sustained success and increased market value.

H1: There is a positive influence of environmental costs on firm value

Environmental performance and firm values

Environmental performance refers to a company's capacity to incorporate its commitment to environmental activities and operations proactively. According to (Siagian 2021), a positive correlation exists between a company's level of involvement in environmental initiatives and its perceived reputation among stakeholders. Environmental performance refers to the extent to which a corporation engages in activities to preserve and safeguard the natural environment, particularly within the geographical context of its operations (Dewi et al. 2023). The present study assessed the environmental performance by utilizing the Pollution Control, Evaluation, and Rating Program (PROPER) established by the Indonesian Ministry of Environment. This investigation draws upon the research completed by (Cahyani and Mayangsari 2022; Ifada et al. 2021; Novitasari and Agustia 2021). The primary objective of the PROPER program is to promote and strengthen the firm's involvement in environmental management. This process involves assessing each company's operational facilities and evaluating their adherence to established environmental standards (Sarumpaet 2005).

Those that exhibit solid environmental performance are more likely to provide comprehensive and transparent disclosures regarding the amount and quality of their environmental impact, in contrast to those that demonstrate weak environmental performance. The impact of environmental performance on business value is beneficial. Companies with strong environmental performance are more likely to provide comprehensive and transparent disclosures about their environmental impact compared to those with weak performance. The increasing number of firms engaging in environmentally-focused initiatives and demonstrating a solid commitment to social responsibility has led to heightened awareness within the community regarding the extent of their contributions to the environment. Hence, it can be inferred that there exists a positive correlation between a company's environmental performance and its societal value, as supported by the studies conducted by (Chouaibi et al. 2022; Safitri and Nani 2021; Yao et al. 2019). These studies provide empirical evidence supporting the idea that companies with strong environmental performance not only enhance their reputation but also contribute positively to their overall societal value.

H2: There is a positive influence of environmental performance on firm value

Eco-Efficiency and firm value

As to the Ministry of Environment of the Republic of Indonesia, Eco-Efficiency is a conceptual framework that encompasses optimizing natural resources, energy utilization, and production processes to minimize the consumption of raw materials, water, and environmental impact. The concept of eco-efficiency entails the integration of assessments of environmental sustainability into organizational plans and operations, driven by the influence of stakeholders and governmental entities (Rehman et al. 2021; Shao et al. 2019). Organizations must actively oversee and uphold Eco-Efficiency within their operational frameworks encompassing resource allocation, water and energy consumption, and waste management. This commitment is crucial for advancing and enhancing the environmental sustainability performance of the company (Abdelhalim et al. 2023); the organizations are required to actively manage various facets of their operations, including resource allocation, water and energy consumption, and waste management. The commitment to these practices is not merely a compliance measure but is recognized as pivotal for advancing and improving a company's environmental sustainability performance.

Furthermore, effective internal management practices within companies, encompassing informed decision-making, standardized procedures, and attention to employee well-being, are intricately linked to the successful implementation of environmental management strategies. This implies that companies with robust internal management practices are better equipped to navigate the complexities of integrating Eco-Efficiency principles into their operations. Attention is given to employee comfort, productivity performance, and the overall quality of the work environment. Companies with effective managerial practices are better positioned to implement environmental management strategies successfully. Consequently, the concept of Eco-Efficiency plays a substantial role in influencing the overall performance of a company, thereby impacting its market value. Consequently, a positive relationship exists between Eco-Efficiency and company value, as supported by (Safitri and Nani 2021; Yao et al. 2019).

H3: There is a positive effect of eco-efficiency on firm value

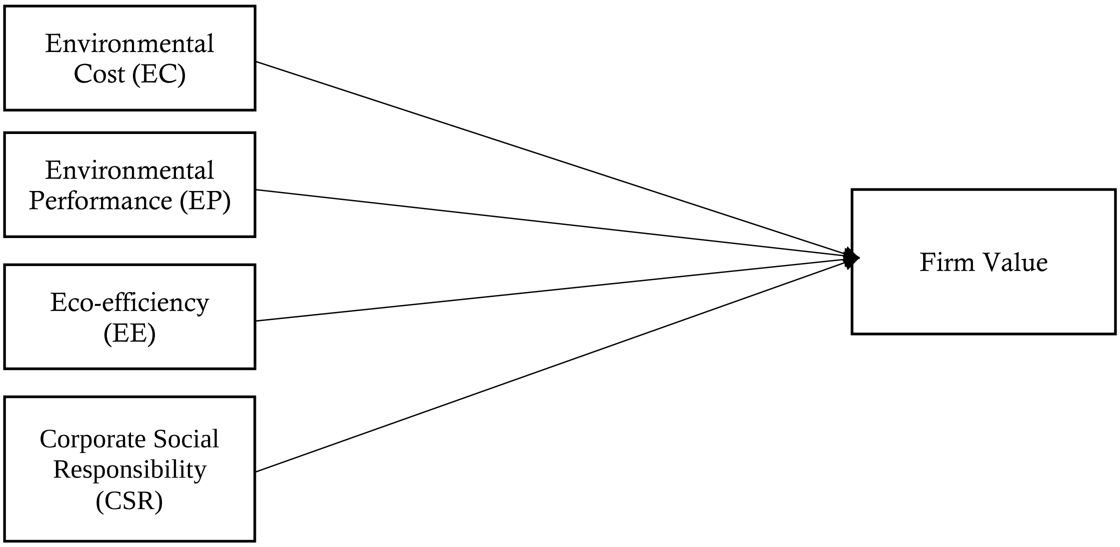
CSR and firm values

Corporate Social Responsibility (CSR) is a strategic approach that confers a competitive edge on firms by enhancing company performance through a heightened focus on social responsibility (Kowalczyk 2019; Newman et al. 2020). Corporate Social Responsibility (CSR) is an essential practice that every corporation should do in order to align the company's operations with the values and expectations of the community. Implementing Corporate Social Responsibility (CSR) has been found to be beneficial for organizations in generating profits and fostering a greater focus on environmental sustainability, societal well-being, and employee welfare (Cahyani and Mayangsari 2022). Moreover, the correlation between the enhancement of quality and performance in CSR practices and the acquisition of accounting information from robust business processes and effective management practices is crucial. This linkage emphasizes the strategic role of accounting information as a valuable resource, empowering stakeholders to make informed and rational economic decisions.

In addition to financial performance, non-financial performance also plays a crucial role in determining the value of a firm (Fahad and Busru 2021). When organizations can enhance their social, environmental, and corporate governance performance by adhering to corporate social responsibility (CSR) values, they have the potential to generate more excellent value for their stakeholders. According to (Cahyani and Mayangsari 2022; Gerged et al. 2021), it has been observed that Corporate Social Responsibility (CSR) positively impacts the value of firms. The creation of a positive corporate reputation through effective CSR implementation is crucial, as suggested by these studies, as it not only benefits society but also provides stakeholders with positive signals, influencing decisions in favor of the organization. This underscores the strategic value of CSR, indicating that its impact extends beyond financial metrics to encompass broader societal impact and the cultivation of positive stakeholder relationships.

H4: There is a positive influence of CSR on firm value

Research framework



Source: Data processed, 2023

Figure 1. Research framework

METHODS

Research type and data

This type of research is quantitative research. The data used is secondary data, with the data source used coming from company sustainability reports which can be accessed from each company's website.

Population and sample

The population of this empirical research comprises environmentally sensitive companies that are part of various indices listed on the Indonesia Stock Exchange (IDX). Specifically, the companies are members of the IDX ESG Leaders, IDX LQ45 Low Carbon Leaders, ESG Sector Leaders IDX KEHATI, SRIKEHATI, and ESG Quality 45 IDX KEHATI indices for the period from 2018 to 2022. These indices are designed to include companies that demonstrate strong environmental, social, and governance (ESG) performance.

The sample selection process employed purposive sampling, with the condition that the selected companies are registered on the IDX throughout the specified timeframe (2018 to 2022). Furthermore, these companies must have issued comprehensive sustainability reports and disclosed detailed information on nominal environmental costs. The selection criteria aim to ensure that the chosen companies have actively reported on their environmental practices and financial commitments to environmental sustainability.

The final sample for this study comprises 32 companies that meet the specified criteria and are actively listed on the IDX. These companies represent a subset of the larger population, allowing for a focused analysis of the financial implications of environmental practices within the context of environmentally sensitive businesses in the Indonesian stock market. The inclusion of companies from various indices provides a diverse representation of industries and sectors with a shared commitment to environmental responsibility, contributing to the robustness and relevance of the empirical findings.

Variable measurement

Table 1. Variable measurement

Variable	Definition	Measurement
[Y] Firm value	Conditions that have been achieved by a company as an illustration of public trust in the company after going through the activity process (Safitri et al. 2019).	Tobin's Q (Aydoğmuş et al. 2022; Safitri et al. 2019; Septianingrum 2022)
[X1] Environmental cost	Costs incurred internally and externally to the company and all costs incurred are related to environmental damage and protection (Nababan and Hasyir 2019).	Environmental costs disclosed in the sustainability report (Ermaya and Mashuri 2020; Ladyve 2020)
[X2] Environmental performance	The company's concrete actions in fulfilling its responsibilities towards the environment and parties affected by its activities (Dewi et al. 2023).	PROPER Value (Cahyani and Mayangsari 2022; Dewi et al. 2023; Ermaya and Mashuri 2020)
[X3] Corporate social responsibility	CSR is an activity in which a company sets aside some of its profits for the benefit of humans and the environment sustainably based on proper and professional procedures (Fersela et al. 2021).	GRI (Cahyani and Mayangsari 2022; Fersela et al. 2021; Kholmi and Nafiza 2022)
[X4] Eco-efficiency	Eco-efficiency is producing goods and services at competitive prices, according to human needs, and can provide a good quality of life (Safitri and Nani 2021).	ISO 14001 ownership (Ermaya and Mashuri 2020; Septianingrum 2022)

Source: Data processed (2023).

RESULT AND DISCUSSION

Data analysis

Data analysis was used using descriptive analysis, classic assumption test, regression analysis (multiple and moderation), and hypothesis testing (coefficient of determination t-test and f-test) using SPSS software.

Descriptive statistics

Table 2. Descriptive statistics result

Variables	Minimum	Maximum	Mean	Std. Deviation
CSR	0.22	0.97	0.509	0.13419
Environmental Cost	11.00	257637.00	30213.516	53563.037
Eco-efficiency	0.00	1.00	0.671	0.471
Environmental performance	0.00	5.00	1.883	2.063
Firm value	0.04	2.30	0.753	0.407

Source: Data processed (2023).

Based on the descriptive tests that have been carried out on 32 companies, several findings were found. Chandra Asri Petrochemical Company has the lowest CSR disclosure, namely only making disclosures of 22 % or 33 indicators out of 151 in the GRI. This lowest disclosure occurred in 2019, although afterward, Chandra Asri Petrochemical increased its disclosures in 2020, 2021, and 2022 by 44 %, 47 %, and 92 %, respectively. Meanwhile, the company with the most significant disclosure, namely Timah Tbk, in 2022 made disclosures of 97 % or 146 indicators out of 151 indicators; this figure shows that Timah Tbk has increased from year to year after previously being at an average disclosure rate of 65 % to 68 %.

The environmental costs disclosed by companies in their sustainability reports have various values and ranges, which can be seen from the standard deviation more remarkable than the mean value obtained. Bank Jatim disclosed the smallest amount of environmental costs in 2018. However, it will continue to increase from 2019 to 2022, and the Indocement Tunggal Prakarsa will disclose the largest in 2022. Eco-efficiency is measured using ISO 14001, where 10 companies out of 32 companies do not yet have international certificates regarding corporate management systems that function to ensure that the processes used and the products, they produce fulfill commitments to the environment, especially in efforts to comply with regulations in the environmental sector, pollution prevention and commitments to continuous improvement. Nearly 30 % of the environmentally sensitive companies observed in this study still needed this certification from 2018 to 2022. On the other hand, 22 other companies managed to meet the requirements of ISO 14001 and hold this certification.

For company performance as measured by PROPER, two companies, namely Bank Negara Indonesia and Bank Rakyat Indonesia, have won PROPER at the gold level, where gold PROPER is the best proper, meaning that the company has implemented environmental management comprehensively and continuously. This research also found that 8 companies still needed the PROPER certification from the Indonesian Ministry of Environment and Forestry. The smallest company value was owned by the Kalbe Farma Tbk company in 2022, and the largest by the Pertamina Gas Negara company with a Tobins'Q value of 2.3 or more than 1, which means that asset management is successful and the shares are overvalued (Dzahabiyya et al. 2020).

Coefficient of Determination (R2)

Table 3. Coefficient of Determination result

Regression Statistics	
Multiple R	0.49637622
R Square	**0.24638935**

Source: Data processed (2023)

The R Square of 0.25 suggests that these independent variables collectively explain approximately 25% of the variability observed in company value. Specifically, the individual contributions of CSR, Environmental Cost, Eco-efficiency, and Environmental Performance are not detailed without the coefficients. However, the statistics imply that CSR, along with the other environmental factors, plays a role in influencing company value. Further interpretation would necessitate examining the coefficients associated with each independent variable, offering insights into the strength and direction of their respective relationships with company value, along with statistical significance tests to validate these relationships.

F-test x

Table 4. F-test result

	df	SS	MS	F	Significance F
Regression	8	6.31420619	0.78927577	5.96674904	0.000
Residual	146	19.3127383	0.13227903		
Total	154	25.6269445			

Source: Data processed (2023)

The analysis of variance (ANOVA) table provides key insights into the overall significance of the regression model. The F-statistic, with a value of 5.96674904, tests the overall significance of the model. The p-value (0.000) associated with the F-statistic suggests that the regression model is statistically significant. In summary, the ANOVA results support the conclusion that the model, encompassing variables such as CSR, Environmental Cost, Eco-efficiency, and Environmental Performance, is not a result of random chance and significantly contributes to explaining the variability in company value.

Regression and hypothesis test

Table 5. Regression and hypothesis test result

Variables	Beta	Significance
(Constant)	0.735	0.000
CSR	0.264	0.249
Environmental Cost	**0.251**	**0.000**
Eco-efficiency	**0.138**	**0.038**
Environmental performance	**0.053**	**0.001**

Source: Data processed (2023)

Based on the results of the regression that has been done, the environmental cost, eco-efficiency, environmental performance variables have a positive and significant effect on firm value, while CSR has not had a significant effect. The composition of the multiple regression model in this study is:

$$\text{Firm's Value} = 0.735 + 0.264\text{CSR} + 0.251\text{EC} + 0.138\text{EE} + 0.053\text{EP} \tag{1}$$

Environmental Cost and firm value

According to the conducted hypothesis testing, a statistically significant relationship exists between environmental expenses and business value, as indicated by a significance level of 0.000. The environmental domain encompasses both internal costs related to mitigating the environmental impact of production operations and external expenses involved with remedying the damage caused by waste generation (Ladyve 2020). The current environmental issues faced by the corporation are environmental contamination. Industrial activities, particularly those with a direct impact on natural ecosystems and the environment, have the potential to generate waste that can lead to environmental contamination. It is imperative for industrial enterprises to effectively handle trash prior to its discharge into the surrounding ecosystem. Environmental cost refers to continuous expenses, structures, and necessary resources to facilitate effective decision-making in environmental management. The environmental expenses borne by corporations have the potential to exert a beneficial influence on firm valuation, leading to an increase in overall worth. The allocation of environmental burdens by companies and the prioritization of environmental issues within business operations are critical factors in determining the environmental expenses incurred. These costs are crucial in assessing the impact of environmental programs and activities on company profitability (Dinniyah and Nuzula 2021). This phenomenon is consistent with prior studies undertaken by (Hapsari and Kurniawan 2020; Nababan and Hasyir 2019; Okafor 2018), which assert that the expenditures associated with environmental management exert an inherent influence on both the performance and value of companies. Effectively mitigating the expenses associated with environmental degradation can significantly enhance the firm's performance and ensure its long-term sustainability.

Environmental performance and firm values

The results of the tests indicate a substantial positive relationship between environmental performance and business value, as evidenced by a significance level of 0.038. The public's evaluation incorporates environmental performance as a significant factor due to the growing awareness of environmental concerns, necessitating environmentally sustainable practices within a company's supply chain activities (Khan and Yu 2021). Investors have been shown to incorporate environmental, social, and governance (ESG) performance into their assessments of firm valuations, as indicated by the studies conducted by (Chouaibi et al. 2022; Hapsari and Kurniawan 2020). ESG-related endeavors prioritize enhancing a company's engagement with various stakeholders, encompassing shareholders, community members, suppliers, customers, and the environment. The company's environmental performance refers to its engagement in preserving and safeguarding the environment, particularly within its operational context (Dewi et al., 2023). Furthermore, environmental performance can indicate both favorable and unfavorable environmental circumstances surrounding the company (Iliemena 2020). In the future, the performance of companies is expected to be influenced by their environmental performance. Investors are keenly interested in allocating resources to companies that commit to environmental stewardship. Investors' perception of a company's environmental initiatives plays a crucial role in evaluating its response to the stock market. Investors expect that organizations might generate value through favorable environmental performance, prompting them to engage in bidding activities on the company's share price (Aini and Faisal 2021). This phenomenon is supported by previous studies conducted by (Chouaibi et al. 2022; Safitri and Nani 2021; Yao et al. 2019).

Eco-Efficiency and firm value

Eco-efficiency refers to the corporate endeavor of integrating environmental sustainability into their strategy and operations to respond to the demands and regulatory pressures from stakeholders and governmental entities concerning environmental concerns (Abdelhalim et al. 2023). The conducted experiments have demonstrated that eco-efficiency exhibits a notable and statistically significant impact on business value, as indicated by a significance level of 0.001. This research employs the ISO 14001 standard to evaluate the extent to which a corporation effectively and optimally implements eco-efficiency practices. Eco-efficiency refers to the ability of firms to enhance their profitability by concurrently minimizing environmental consequences, resource consumption, and costs (Safitri et al. 2019). Enhancing the energy eco-efficiency of an industry is a crucial factor in achieving sustainable development objectives within regional and industrial ecosystems. This is accomplished by reducing energy consumption and increasing economic output per unit of natural resources utilized while mitigating adverse environmental consequences. Such efforts are likely to attract the attention of both investors and general public companies (Shah et al. 2020). This finding is consistent with previous research conducted by (Safitri et al. 2019; Yao et al. 2019), suggesting that a strong eco-efficiency will positively influence a company's overall performance and subsequently enhance its market value.

CSR and firm values

Corporate Social Responsibility (CSR) is a strategic approach business adopt to gain a competitive edge while upholding their social obligations. It serves as a framework to address the adverse impacts of business operations and enhance the well-being of stakeholders, encompassing consumers, the environment, and others (Newman et al. 2020; Ying et al. 2022). According to the findings of this study, corporate social responsibility (CSR) does no effect the company value, as indicated by a coefficient of 0.249, which falls below the conventional threshold of 0.05. Implementing corporate social responsibility (CSR) goes beyond enhancing a company's image among shareholders and stakeholders. Corporations must undertake CSR initiatives with a profound understanding of their significance (Cahyani and Mayangsari 2022). This study is consistent with previous studies conducted by Aini and Faisal (2021) and Fahad and Busru (2021), which found that corporate social responsibility (CSR) does not have a statistically significant impact on firm value. Multiple factors contribute to this phenomenon, including the inadequate disclosure and implementation of corporate social responsibility (CSR) practices by numerous corporations in Indonesia and the failure to adhere to the Global Reporting Initiative (GRI) criteria. As mentioned earlier, the phenomenon is evident in the descriptive mean of the statistical data presented in this study, indicating that the observed organizations reveal their corporate social responsibility (CSR) practices to the extent of 51 %, or 76 out of the total 151 indicators. However, the corporations utilized in this study are categorized as environmentally sensitive firms exhibiting commendable environmental performance. Many investors believe that increased corporate social responsibility (CSR) disclosure is detrimental to profitability and a firm's overall value. The lack of positive corporate behavior towards corporate social responsibility (CSR) activities, the absence of a sustainable investment culture among investors, and the relatively lower sensitivity and awareness of consumers towards corporate CSR practices compared to other developed countries have contributed to this phenomenon

CONCLUSION

According to existing research, evidence suggests that factors such as environmental cost, eco-efficiency, environmental performance, and corporate social responsibility (CSR) might contribute positively to a business's overall value. However, it is essential to note that CSR, in particular, still requires further examination to ascertain its precise impact on firm value. Nevertheless, this study has demonstrated that the observed companies, which are environmentally conscious, have fulfilled the research assumptions. Specifically, the environmental accounting practices adopted by these companies have effectively enhanced their overall value. Consequently, many company owners and investors perceive the implementation of environmental accounting as a positive attribute for these companies. This observation indicates a favorable trajectory in the adoption of environmental accounting practices among companies in Indonesia. Consequently, organizations can allocate greater attention toward executing diverse policies and programs on environmental sustainability, thereby enhancing their overall corporate value. The study is subject to certain limitations, mostly stemming from the small sample size and reliance on measurement proxies that do not comprehensively understand each variable. It is anticipated that the subsequent study will incorporate a range of variables about environmental accounting, including eco-innovation, which serves as an evaluative measure for associated subjects. Furthermore, it is anticipated that future research endeavors will employ a more extensive and inclusive sample, encompassing environmentally sensitive corporations and entities operating in other industries. This approach will enable researchers to establish meaningful comparisons among these entities. Future research will employ more contemporary proxies to elucidate each component thoroughly. There is an expectation that companies should prioritize the disclosure of environmental costs and corporate social responsibility (CSR) while promptly pursuing ISO 14001 certification and actively seeking the PROPER award. These various elements possess inherent value for both investors and company owners, as they have the potential to enhance the overall value of the company.

REFERENCES

Abdelhalim, A. M., N. Ibrahim, and M. Alomair. 2023. The Moderating Role of Digital Environmental Management Accounting in the Relationship between Eco-Efficiency and Corporate Sustainability. *Sustainability*, *15*(9), 7052. https://doi.org/10.3390/su15097052.

Abdi, Y., X. Li, and X. Càmara-Turull. 2020. Impact of Sustainability on Firm Value and Financial Performance in the Air Transport Industry. *Sustainability*, *12*(23), 9957. https://doi.org/10.3390/su12239957.

Agyemang, A. O., K. Yusheng, A. K. Twum, E. C. Ayamba, M. Kongkuah, M. Musah. 2021. Trend and relationship between environmental accounting disclosure and environmental performance for mining companies listed in China. *Environment, Development and Sustainability*, *23*(8): 12192–12216. https://doi.org/10.1007/s10668-020-01164-4.

Aini, N., and N. T. Faisal. 2021. The Effect of Environmental Performance on Firm Value Using Financial Performance as Mediator Variable. *IJEBD (International Journal of Entrepreneurship and Business Development)*, *4*(3): 390–395. https://doi.org/10.29138/ijebd.v4i3.1391.

Andries, P., and U. Stephan. 2019. Environmental Innovation and Firm Performance: How Firm Size and Motives Matter. *Sustainability*, *11*(13), 3585. https://doi.org/10.3390/su11133585.

Aydoğmuş, M., G. Gülay, and K. Ergun. 2022. Impact of ESG performance on firm value and profitability. *Borsa Istanbul Review*, *22*: S119–S127. https://doi.org/10.1016/j.bir.2022.11.006.

Bassey, B. E., S. O. Effiok, O. E. Eton. 2013. The Impact of Environmental Accounting and Reporting on Organizational Performance of Selected Oil and Gas Companies in Niger Delta Region of Nigeria. *Research Journal of Finance and Accounting*.

Benkraiem, R., E. Dubocage, Y. Lelong, F. Shuwaikh. 2023. The effects of environmental performance and green innovation on corporate venture capital. *Ecological Economics*, *210*, 107860. https://doi.org/10.1016/j.ecolecon.2023.107860.

Cahyani, R. S. A. C., and S. Mayangsari. 2022. The Influence of Environmental Performance, Corporate Governance, and Corporate Social Responsibility on Financial Performance. *Trisakti Economic Journal*, *2*(2): 475–486. https://doi.org/10.25105/jet.v2i2.14321.

Chen, J. K., and R. S. Roberts. 2010. Toward a More Coherent Understanding of the Organization–Society Relationship: A Theoretical Consideration for Social and Environmental Accounting Research. *Journal of Business Ethics*, *97*(4). https://doi.org/10.1007/s10551-010-0531-0.

Chouaibi, S., J. Chouaibi, and M. Rossi. (2022). ESG and corporate financial performance: The mediating role of green innovation: UK common law versus Germany civil law. *EuroMed Journal of Business*, *17*(1:, 46–71. https://doi.org/10.1108/EMJB-09-2020-0101.

Dewi, M. R. K., D. Hapsoro, and T. Trisanti. 2023) Environmental Performance and Environmental Disclosure in Mining Companies and Agricultural Companies. *Accounting journal*, *15*(1): 139–152. https://doi.org/10.28932/jam.v15i1.6051.

Dinniyah, T., and N. F. Nuzula. 2021) *The Influence of Environmental Cost on Profitability and Firm Value: A Study of First Section Chemical Companies Listed on Japan Stock Exchange in 2016 – 2018*. 3rd Annual International Conference on Public and Business Administration (AICoBPA 2020), Bogor, Indonesia. https://doi.org/10.2991/aebmr.k.210928.054.

Dowling, J., and J. Pfeffer. 1975. Organizational Legitimacy: Social Values and Organizational Behavior. *Pacific Sociological Review*, *18*(1): 122–136. https://doi.org/10.2307/1388226.

Dzahabiyya, J., D. Jhoansyah, and R. D. M. Danial. 2020. Analisis Nilai Perusahaan Dengan Model Rasio Tobin's Q [Analysis of Company Value Using the Tobin's Q Ratio Model]. JAD: Dewantara Accounting & Finance Research Journal, 3(1), Article 1. https://doi.org/10.26533/jad.v3i1.520.

Ermaya, H. N. L., and A. A. S. Mashuri. 2020. The Influence of Environmental Performance, Environmental Cost and ISO 14001 on Financial Performance in Non-Financial Companies Listed on the Indonesia Stock Exchange. *Balance Sheet: Journal of Applied Accounting*, *1*(2): 74–83. https://doi.org/10.31334/neraca.v1i2.857.

Fahad, P., and S. A. Busru. 2021. CSR disclosure and firm performance: Evidence from an emerging market. *Corporate Governance: The International Journal of Business in Society*, *21*(4): 553–568. https://doi.org/10.1108/CG-05-2020-0201.

Felisha, F., and H. Rossieta. 2018. Is Environmental Performance Valued by Investors? The Case of Indonesian Listed Companies. *Proceedings of the 6th International Accounting Conference (IAC 2017)*. 6th International Accounting Conference (IAC 2017), Yogyakarta, Indonesia. https://doi.org/10.2991/iac-17.2018.46.

Fersela, A. B., Y. W. Nugroho, S. S. Pratama, and K. Umam. 2021. *Pengaruh Default Risk dan Corporate Social Responsibility (CSR) Terhadap Earnings Response Coeffisient (ERC) Studi Empiris pada Perusahaan Manufaktur Yang Terdaftar di Bursa Efek Indonesia Tahun 2018 – 2019 [The Influence of Default Risk and Corporate Social Responsibility (CSR) on Earnings Response Coefficient (ERC) Empirical Study of Manufacturing Companies Listed on the Indonesia Stock Exchange 2018 - 2019]. 14.*

Gerged, A. M., E. Beddewela, and C. J. Cowton. 2021. Is corporate environmental disclosure associated with firm value? A multicountry study of Gulf Cooperation Council firms. *Business Strategy and the Environment*, *30*(1): 185–203. https://doi.org/10.1002/bse.2616.

Guo, Y., L. Wang, and Q. Yang. (2020). Do corporate environmental ethics influence firms' green practice? The mediating role of green innovation and the moderating role of personal ties. *Journal of Cleaner Production*, *266*, 122054. https://doi.org/10.1016/j.jclepro.2020.122054.

Habib, A., and M. B. U. Bhuiyan. 2017. Determinants of monetary penalties for environmental violations. *Business Strategy and the Environment*, *26*(6): 754–775. https://doi.org/10.1002/bse.1947.

Hapsari, D. R. I., and K. D. Kurniawan. 2020. Consumer Protection in the Banking Credit Agreement in Accordance with the Principle of Proportionality under Indonesian Laws. *Fiat Justisia: Journal of Legal Studies*, *14*(4): 337–352. https://doi.org/10.25041/fiatjustisia.v14no4.1884.

Harahap, C. D., I. Juliana, and F. F. Lindayani. 2019. The Impact of Environmental Performance and Profitability on Firm Value. *Indonesian Management and Accounting Research*, *17*(1): 53–70. https://doi.org/10.25105/imar.v17i1.4665.

Harmono. (2022). *Manajemen Keuangan: Berbasis Balanced Scorecard [Financial Management: Balanced Scorecard Based]*. Bumi Aksara (Literary Earth).

Ifada, M. L., Munawaroh, I. Kartika, and K. Fuad. 2021. Environmental Performance Announcement and Shareholder Value: The Role of Environmental Disclosure. In *Complex, Intelligent and Software Intensive Systems, 278:* 426–434. Springer International Publishing. https://doi.org/10.1007/978-3-030-79725-6_42.

Ikram, M., R. Sroufe, M. Mohsin, Y. A. Solangi, S. Z. A. Shah, F. Shahzad. 2019. Does CSR influence firm performance? A longitudinal study of SME sectors of Pakistan. *Journal of Global Responsibility*, *11*(1): 27–53. https://doi.org/10.1108/JGR-12-2018-0088.

Iliemena, R. (2020). Environmental Accounting Practices and Corporate Performance: Study of Listed Oil and Gas Companies in Nigeria. *European Journal of Business and Management*. https://doi.org/10.7176/EJBM/12-22-08.

Jabbour, A. B. L. de S., C. J. C. Jabbour, C. Foropon, and M. G. Filho. 2018. When titans meet – Can industry 4.0 revolutionise the environmentally-sustainable manufacturing wave? The role of critical success factors. *Technological Forecasting and Social Change*, *132*: 18–25. https://doi.org/10.1016/j.techfore.2018.01.017.

Jo, H., H. Kim, and K. Park. 2016. Environmental Costs and Firm Value. *Asia-Pacific Journal of Financial Studies*, *45*(6): 813–838. https://doi.org/10.1111/ajfs.12153.

Khan, S. A. R., and Z. Yu. 2021. Assessing the eco-environmental performance: An PLS-SEM approach with practice-based view. *International Journal of Logistics Research and Applications*, *24*(3): 303–321. https://doi.org/10.1080/13675567.2020.1754773

Kholmi, M., and S. A. Nafiza. 2022. Pengaruh Penerapan Green Accounting dan Corporate Social Responsibility Terhadap Profitabilitas (Studi Pada Perusahaan Manufaktur Yang Terdaftar di BEI Tahun 2018-2019) [The Effect of Implementing Green Accounting and Corporate Social Responsibility on Profitability (Study of Manufacturing Companies Listed on the IDX in 2018-2019)]. *Indonesian Accounting and Business Review*, 6(1): 142–154.

Kim, E., S. Kim, J. Lee. 2021. Do Foreign Investors Affect Carbon Emission Disclosure? Evidence from South Korea. *International Journal of Environmental Research and Public Health*, *18*(19), Article 19. https://doi.org/10.3390/ijerph181910097.

Kowalczyk, R. (2019). How Do Stakeholder Pressure Influence On CSR-Practices in Poland? The Construction Industry Case. *Journal of EU Research in Business*, 1–10. https://doi.org/10.5171/2019.102392.

Kraus, S., S. U. Rehman, and F. J. S. García. (2020). Corporate social responsibility and environmental performance: The mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change*, *160*, 120262. https://doi.org/10.1016/j.techfore.2020.120262.

Kuzey, C., and A. Uyar. 2017. Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. *Journal of Cleaner Production*, *143:* 27–39. https://doi.org/10.1016/j.jclepro.2016.12.153.

Ladyve, G. M. (2020). *Pengaruh Kinerja Lingkungan, Biaya Lingkungan, Dan Ukuran Perusahaan Terhadap Kinerja Keuangan Perusahaan Yang Terdaftar Di Bura Efek Indonesia Tahun 2015—2018 [Environmental Performance, Environmental Costs, and Company Size on the Financial Performance of Companies Registered on the Indonesian Stock Exchange 2015—2018]*. *09*(06).

Li, Z., G. Liao, and K. Albitar. 2020. Does corporate environmental responsibility engagement affect firm value? The mediating role of corporate innovation. *Business Strategy and the Environment*, *29*(3): 1045–1055.

Liao, L., L. Luo, and Q. Tang. 2015. Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*, *47*(4): 409–424. https://doi.org/10.1016/j.bar.2014.01.002.

Meiyana, A., and M. N. Aisyah. 2019. Pengaruh kinerja lingkungan, biaya lingkungan, dan ukuran perusahaan terhadap kinerja keuangan dengan corporate social responsibility sebagai variabel intervening [The Influence of Environmental Performance, Environmental Costs, And Company Size On Financial Performance With Corporate Social Responsibility As An Intervening Variable]. *Nominal Barometer for Accounting and Management Research*, *8*(1), Article 1. https://doi.org/10.21831/nominal.v8i1.24495.

Nababan, L. M., and D. A. Hasyir. 2019. Pengaruh Environmental Cost Dan Environmental Performance Terhadap Financial Performance (Studi Kasus pada Perusahaan Sektor Pertambangan Peserta PROPER Periode 2012 – 2016) [The Influence of Environmental Costs and Environmental Performance on Financial Performance (Case Study of Mining Sector Companies Participating in PROPER for the 2012 – 2016 Period)]. Udayana University Economics and Business E-Journal, 259. https://doi.org/10.24843/EEB.2019.v08.i03.p03.

Newman, C., J. Rand, F. Tarp, and N. Trifkovic. 2020. Corporate Social Responsibility in a Competitive Business Environment. *The Journal of Development Studies*, *56*(8): 1455–1472. https://doi.org/10.1080/00220388.2019.1694144.

Nguyen, T. L. H., N. M. Tran, and M. C. Vu. 2021. The influence of board characteristics and state holding on corporate social responsibility disclosure, evidence from vietnamese listed firms. *Business: Theory and Practice*, *22*(1): 190–201. https://doi.org/10.3846/btp.2021.13490.

Novitasari, M., and D. Agustia. 2021. Green supply chain management and firm performance: The mediating effect of green innovation. *Journal of Industrial Engineering and Management*, *14*(2): 391. https://doi.org/10.3926/jiem.3384.

Ntim, C. G. (2016). Corporate governance, corporate health accounting, and firm value: The case of HIV/AIDS disclosures in Sub-Saharan Africa. *The International Journal of Accounting*, *51*(2): 155–216. https://doi.org/10.1016/j.intacc.2016.04.006.

Okafor, T. (2018). Environmental Costs Accounting and Reporting on firm financial performance: A survey of Nigerian quoted oil companies. *International Journal of Finance and Accounting Studies*, *7*. https://doi.org/10.5923/j.ijfa.20180701.01.

Rehman, S. U., S. Kraus, S.A. Shah, D. Khanin, and R. V. Mahto. 2021. Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change*, *163*, 120481. https://doi.org/10.1016/j.techfore.2020.120481.

Riyadh, H. A., M. A. Al-Shmam, H. H. Huang, B. Gunawan, and S. A. Alfaiza. 2020. The Analysis Of Green Accounting Cost Impact On Corporations Financial Performance. *International Journal of Energy Economics and Policy*, *10*(6): 421–426. https://doi.org/10.32479/ijeep.9238.

Safitri, V. A. D., and D. A. Nani. 2021. *Does Corporate Governance and Eco-Efficiency Contribute to Firm Value? An Empirical Study in Indonesian State- Owned Enterprises (SOEs)*.

Safitri, V. A., L. Sari, and R. R. Gamayuni. 2019. Research and Development, Environmental Investments, to Eco-Efficiency, and Firm Value. *The Indonesian Journal of Accounting Research*, *22*(03). https://doi.org/10.33312/ijar.446.

Sarumpaet, S. (2005). The Relationship Between Environmental Performance And Financial Performance Of Indonesian Companies. *Journal of Accounting and Finance*, *7*(2), Article 2. https://doi.org/10.9744/jak.7.2.pp.

Schneider, T. E. (2008). *Is there a relation between the cost of debt and environmental performance? An empirical investigation of the US Pulp and Paper Industry, 1994-2005.*

Septianingrum, R. (2022). The influence of eco-efficiency on firm value with funding structure as a moderating variable. *JAE (Journal Of Accounting And Economics]*, *7*(1): 82–94. https://doi.org/10.29407/jae.v7i1.16165.

Shabbir, M. S., O. Wisdom. 2020. The relationship between corporate social responsibility, environmental investments and financial performance: Evidence from manufacturing companies. *Environmental Science and Pollution Research*, *27*: 39946–39957.

Shah, I. H., L. Dong, H. S. Park. 2020. Tracking urban sustainability transition: An eco-efficiency analysis on eco-industrial development in Ulsan, Korea. *Journal of Cleaner Production*, *262*, 121286. https://doi.org/10.1016/j.jclepro.2020.121286.

Shao, L., X. Yu, and C. Feng. 2019. Evaluating the eco-efficiency of China's industrial sectors: A two-stage network data envelopment analysis. *Journal of Environmental Management*, *247*: 551–560. https://doi.org/10.1016/j.jenvman.2019.06.099.

Shen, J., and Y. Chen. 2020. A Comparative Study of Environmental Accounting Information Disclosure between China and Developed Countries. *IOP Conference Series: Earth and Environmental Science*, *508*(1), 012011. https://doi.org/10.1088/1755-1315/508/1/012011.

Siagian, N. N. S. U. (2021). A Portrayal of Toxic Masculinity in Thanos's Avengers: Endgame. *LITERA KULTURA : Journal of Literary and Cultural Studies*, *9*(2): 59–65.

https://doi.org/10.26740/lk.v9i2.42188.

Sugianto, N. A. P., C. N. Riandy, S. F. Zainavy, and A. I. Hartikasari. 2022. The Contribution of Environmental, Social, and Governance (ESG) Disclosure to Reduce Investor Asymmetry Information. *Proceedings Series on Social Sciences & Humanities*, *7*: 56–61. https://doi.org/10.30595/pssh.v7i.472.

Utomo, M. N., S. Rahayu, K. Kaujan, and S. A. Irwandi. 2020. Environmental performance, environmental disclosure, and firm value: Empirical study of non-financial companies at Indonesia Stock Exchange. *Green Finance*, *2*(1): 100–113.

Vásquez, J., S. Aguirre, C. F. Fuquene-Retamoso, G. Bruno, P. C. Priarone, and L. Settineri. 2019. A conceptual framework for the eco-efficiency assessment of small- and medium-sized enterprises. *Journal of Cleaner Production*, *237*, 117660. https://doi.org/10.1016/j.jclepro.2019.117660.

Wahidawati, W., and L. Ardini. 2021. Corporate Governance and Environmental Performance: How They Affect Firm Value. *The Journal of Asian Finance, Economics and Business*, *8*(2): 953–962. https://doi.org/10.13106/JAFEB.2021.VOL8.NO2.0953.

Yao, Q., J. Liu, S. Sheng, H. Fang. 2019. Does eco-innovation lift firm value? The contingent role of institutions in emerging markets. *Journal of Business & Industrial Marketing*, *34*(8): 1763–1778. https://doi.org/10.1108/JBIM-06-2018-0201.

Ying, M., H. Shan, G. A. Tikuye. 2022. How Do Stakeholder Pressures Affect Corporate Social Responsibility Adoption? Evidence from Chinese Manufacturing Enterprises in Ethiopia. *Sustainability*, *14*(1), Article 1. https://doi.org/10.3390/su14010443.

Yousaf, Z. (2021). Go for green: Green innovation through green dynamic capabilities: accessing the mediating role of green practices and green value co-creation. *Environmental Science and Pollution Research*, *28*(39): 54863–54875. https://doi.org/10.1007/s11356-021-14343-1.