

Carbon Emission Disclosure and Corporate Value: Does Company Size Play a Critical Role?

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Abstract— This research aims to analyze the effect of carbon emissions disclosure on firm value by considering the company size factor as a moderating variable. The data analysis used is balanced panel data regression. The sample of non-financial companies was selected based on the specified criteria. The research results indicate that carbon emission disclosure (CED) has a negative effect on firm value. Meanwhile, the company size moderates the positive impact of carbon emission disclosure on firm value. This research implies that disclosure of carbon emissions can damage a business's reputation, therefore concrete action is needed to comply with the regulations and quickly respond to the actions to reduce environmental damage resulting from their business activities. This research contributes to the accounting literature by emphasizing the importance of the quality and context of carbon emissions disclosure, especially in companies listed on IDX-IC shares.

Keywords: Carbon Emission Disclosure, Firm value, Company Size

1. INTRODUCTION

Environmental issues are increasingly becoming a global concern because their impacts can adversely impact human health and cause ecosystem imbalances and can be a threat to the sustainability of life on this planet. Aggravating environmental degradation from corporate business practices has resulted in increasing public concern about the impacts, one of which is the increasing risk caused by climate change. Currently, this situation has caused the issue of carbon emissions to become an important topic for corporates. As a result, corporate managers face greater pressure to reduce the impacts related to carbon emissions and are required for disclosure (Lee & Cho, 2021). One of the most important ways to guarantee a business's sustainability is to control carbon emissions. Particularly, Indonesia ranks sixth globally and third in Asia, after China and India, in terms of carbon dioxide emissions, making it one of the major contributors to global emissions (Kurnia et al., 2021).

Every year, Indonesia experiences an increase in carbon emissions, as shown in Figure 1.

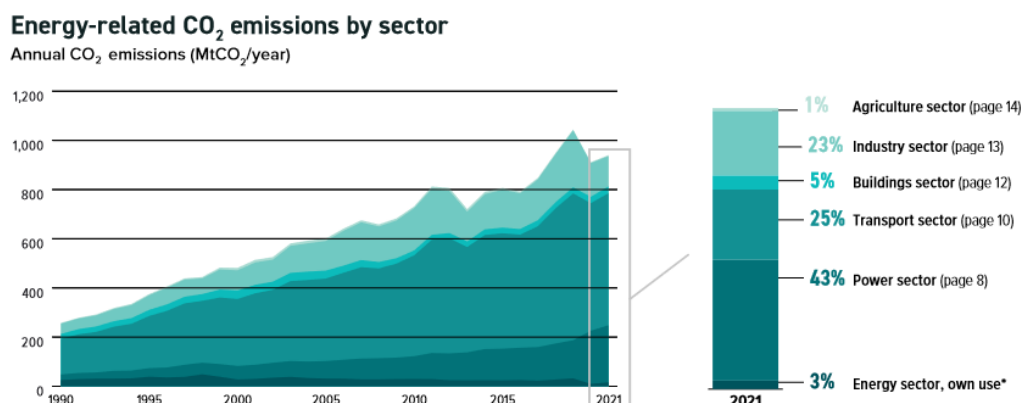


Figure 1. Total Carbon Emissions (CO₂)
Source: Climate Transparency (2022)

Based on Figure 1, it can be observed that CO₂ emissions have increased since 1990 although there was a slight decrease in 2020 possibly due to response measures to COVID-19. Meanwhile,

as the economy recovered, emissions increased again in 2021, where the largest contributor to CO₂ emissions is the electricity sector (43%), followed by the transportation and other sectors. According to (Mushtaq et al., 2023), the impact of CO₂ emissions has become a major concern because it contributes to global warming. Natural catastrophes are predicted to happen more frequently and with higher severity as a result of the phenomenon. Quoted from [cnbcindonesia.com](https://www.cnbcindonesia.com), as part of its commitment to curb global warming, Indonesia increased its Enhanced Nationally Determined Contribution (E-NDC) reduction target to 32% or the equivalent of 912 million tonnes of CO₂ by 2030. Therefore, to support this target, various regulations have been established although they may be implemented in stages (Setiawan, 2023).

This research uses some data on situations where companies globally are experiencing a crisis period caused by the COVID-19 pandemic. Since early 2020, COVID-19 infections have had a devastating impact on nations all over the world. The pandemic's effects are devastating because they have affected not only the world's mortality rate and health conditions but also the world's social structure, economy, and corporate sector. Strong COVID-19 GHG emission results improved the company's ability to secure outside funding. Furthermore, when the SS market and the company are subjected to negative shocks, the company's GHG emission performance can lessen the negative effects (Nababan & Siregar, 2023).

In a different situation, previous research, such as Rachmawati (2021) that corporate value is negatively correlated with carbon emissions. Furthermore, Lee & Cho (2021) conducted research in Korean companies (Chaebol & Non-Chaebol) on the relationship between carbon emissions and firm value. Return was used as a proxy for firm value which was considered better than looking at its profitability. They revealed that carbon emissions and firm value were positively correlated. Wenni et al. research (2022) found that carbon emissions disclosure did not affect firm value. Hardiyansah et al. (2021) use moderation of industry type and environmental performance. The results of his research show that disclosure of carbon emissions affects firm value. Kurnia et al. (2021) found that carbon emissions disclosure affects firm value.

The effect of disclosing carbon emissions on firm value is the main focus of this study, which also looks into whether different-sized companies have different views on the importance of carbon emissions disclosure as part of their sustainability program. Company size is often an important part to highlight in non-financial information disclosure. The size of the business will have an impact on its value because larger businesses are thought to have more assets that can increase their profitability, which in turn affects the value of the company (Margono & Gantino, 2021). Bigger businesses typically have more financial resources available for sustainability projects, such as lowering carbon emissions and producing relevant reports. But larger businesses also frequently have wider supply chains and more intricate operations. It can be more challenging and complex to monitor and manage carbon emissions within an organization than it is for smaller, more straightforward businesses.

The stakeholder theory states that the existence of a company is affected by stakeholder support for the company (Murdiansyah et al., 2023), and stakeholder support affects a company's ability to sustain itself (Sari et al., 2022). For both internal and external stakeholders, the firm's responsibility, which was previously assessed using economic indicators found in the financial statements, must change to non-economic indicators. Therefore, as one of the non-economic indicators, carbon emission disclosure can be used to generate value and benefit for all parties involved (Andriadi et al., 2023). By fostering trust with business stakeholders, carbon disclosure can help reduce the inherent risks associated with conflict within the business community (Ramadhan et al., 2023). The primary goal of stakeholder theory is to help business management minimize losses for stakeholders and increase value creation due to operations (Prayogo et al., 2023).

Based on the signaling theory, disclosure of carbon emissions can be good news for investors because companies voluntarily provide the information sought by investors. This theory assumes that disclosing their carbon emissions is dedicated to lessening the harm that their operations cause to the environment (Hardiyansah et al., 2021). Therefore, companies are not only required to disclose their operational activities but also other activities, especially those related to the environment, such as the company's concern about the issue of global warming due to elevating carbon emissions.

The legitimacy theory is widely and consistently accepted for social and environmental disclosure used in this study. In this legitimacy theory, there is a relationship between companies and society which is governed by regulations. More significantly, the legitimacy theory for organizations is the

restriction of social norms and societal beliefs so that the company will continue to operate and be accepted by the public (Bedi & Singh, 2024).

Firm value refers to investors' perceptions of a company's effectiveness in managing its resources, which are frequently correlated with share prices on the market (Nababan & Siregar, 2023; Susilawati et al., 2024). A firm with a high share price is highly valued by the market and has an impact on confidence in both the company's present performance and its prospects for the future (Rachmawati, 2021). However, several factors affect share prices, such as financial information reflected in financial statements and non-financial information that has the power to sway investors' opinions (Nababan & Siregar, 2023).

The disclosure of a company's carbon emissions has grown in importance as a means of assessing its financial performance as well as possible "unrecorded" liabilities and expenses (Lee & Cho, 2021). Based on 'SEOJK Number 16 /SEOJK.04/2021', only a few carbon emission disclosures are mandatory for public companies in Indonesia. Total carbon, the amount and intensity of emissions generated by type, the efforts and successes made to reduce emissions, the amount and intensity of energy consumed, and the efforts and successes made to employ renewable energy and energy efficiency are all included in this disclosure. Apart from that, these items are still voluntary (Ladista et al., 2023). By research Hardiyansah et al. (2021) content analysis is used to measure the disclosure of carbon emissions. Climate change, greenhouse gas emissions, energy consumption, greenhouse gas emissions reductions and costs, and carbon emissions accountability are the five primary disclosure groups that are based on the Carbon Disclosure Project (CDP), whose questionnaire served as the basis for this checklist. Each disclosure group is further subdivided into eighteen acquisition items.

The Company size is measured by the size of the company's assets (Hapsoro & Falih, 2020), sales, and market capitalization (Susilawati & Suryaningsih, 2020). Total assets owned indicate the size of the company. The larger total asset owned shows that the company has more capacity (resources) to satisfy stakeholder requests and generate value. In addition, older firms will usually have better adjustments to their business strategies. They develop a more mature identity and can minimize business risks that will impact the value of the company (Rahman & Yilun, 2021).

Pressure from shareholders and various external organizations provides momentum for the company's internal management control system to gather data about the climate change. This pressure encourages the corporates to admit this phenomenon and act by disclosing their information regarding carbon emissions (Lee & Cho, 2021). Disclosure of carbon emissions can increase firm value as investors can be focused more on global environmental issues in the future. Disclosure of carbon emissions encourages customers to purchase environmentally friendly products and generates higher revenues. Higher income will result in higher profitability thus motivating investors to invest, and eventually it will lead to an increase in share prices. Meanwhile, the disclosure of carbon emissions provides a signal that companies can improve their performance in the future by being responsible for the environment (Kurnia et al., 2020).

Carbon emissions disclosure can be good news for investors because companies voluntarily provide the information investors need (signaling theory). They assume that companies that reveal their carbon emissions are committed to lessening the harm that their operations cause to the environment. Therefore, investors' interest in the company will consequently increase. Companies can demonstrate their commitment to environmental sustainability by disclosing their carbon emissions, which is also essential to their long-term viability (Hardiyansah et al., 2021).

H₁: Carbon emission disclosure has a positive effect on firm value.

Company size is often an important part to highlight non-financial information disclosure. The size of the company will affect the company's value based on the fact that the larger a company is, the greater the level of asset addition so that it can earn profits which will affect the value of the company (Margono & Gantino, 2021). Companies with large assets are generally at a mature stage in business. This stage is characterized by stable cash flow and promising long-term prospects. With this condition, the company is considered to have a higher level of stability and greater ability to generate profits compared to companies with smaller asset values. The large size of the company also reflects the potential for growth and high ability to generate profits in the future. This condition provides a good signal for investors which can ultimately increase the stock price and the overall value of the company (Lambey et al., 2021).

Large companies generally face greater public pressure to engage in disclosure activities. By

responding to such pressure proactively, companies can improve their financial performance. In addition, large companies usually have better resource capacity and competence in managing the disclosure process than small companies. Therefore, they are more able to invest in carbon emission reporting, which in turn can drive improved corporate performance and ultimately increase corporate value. Thus, corporate size is a key factor influencing the nature of the relationship between carbon emission disclosure and corporate value (Bedi & Singh, 2024). In addition, large assets reflect the company's capacity to fund expansion and innovation, which indirectly increases investor confidence and increases the company's market value

H₂: Firm value is positively impacted by company size.

H₃: Company size moderates the effect of carbon emission disclosure on firm value.

2. RESEARCH METHODS

This research is a type of causality research. The unit of analysis is an organization (company), namely a non-financial company listed on IDX-IC shares on the IDX for the period 2019 – 2022. The sample selection method uses purposive sampling. One of the criteria is a company that consistently reports annual reports and sustainability reports for the period 2019-2022. Based on these criteria, the number of selected samples was 75 companies, or 300 annual company data (75 x 4).

The analysis uses panel data regression. The research model is as follows:

$$FV_{i,t} = \beta_0 + \beta_1 CED_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CED * SIZE_{i,t} + \beta_4 AGE_{i,t} + \epsilon_{i,t}$$

Where:

FV : Firm value

CED : Carbon emission disclosure

SIZE : Company size

AGE : Company age

Dependent variable: firm value was measured using the Tobin's Q value.

Moderating variable: company size based on total asset value (Ln (total assets)).

Independent variable: carbon emissions adopting the CDP questionnaire, which consisted of 18 items. The carbon emissions variable indicator was measured by assigning a score. Every item had a value of 1 = if the firm had revealed in the report, and 0 = otherwise. The scores for each company were then added up and divided by 18 (Hardiyansah et al., 2021).

Volume Carbon emissions were measured using content analysis to determine the volume of carbon emissions disclosure in sustainability reports (Hardiyansah et al., 2021). Based on the assessment of scores 1 and 0, CED index is then created:

$$CEDI_{i,t} = \frac{\sum X_{i,t}}{n_{i,t}}$$

Where:

$CEDI_{i,t}$: Carbon emission disclosure index

$\sum X_{i,t}$: Total number or score obtained by each company in year t, using content analysis

$n_{i,t}$: Number of items

Control variable: Company age. The natural log of the number of years since the company's founding was used to calculate the age of the company.

2. RESULTS AND DISCUSSION

Descriptive Analysis

Descriptive statistical analysis describes the minimum, maximum, average, and standard deviation values (Table 1).

Table 1. Descriptive Analysis

	FV	CED	SIZE	AGE
Mean	1.573	0.631	30.494	3.629
Maximum	11.878	0.889	33.655	4.754
Minimum	0.462	0.278	26.881	1.386
Std. Dev.	1.587	0.152	1.364	0.607
Obs.	300			

Source: data is processed using statistical software.

Based on Table 1, the maximum value of the firm value is 11,878, which occurs in the company Multi Bintang Indonesia Tbk. The interpretation of it is that this company has the highest market value and has succeeded in managing its costs and resources well, resulting in a high level of

profitability and an impact on high firm value as well. The lowest value, 0.462, occurred at Bakrieland Development Tbk. It can be interpreted that this company has a low market value. The average value is 1.573 and the stand. deviation is 1.587. Mean < std. deviation indicates that the data is heterogeneous. The maximum value of CED is 0.889 and the lowest value is 0.278. The average value is 0.631 > 0.152, indicating that the data is homogeneous. The average value is close to the maximum value so that the average disclosure of non-financial companies during the 2019-2022 period tends to be good. The maximum value of SIZE is 33.655 and the lowest value is 26.881. The average value is 30.494 > 1.364, indicating that the data is homogeneous. Control variable (AGE): the average value is 3.629 > 0.607, indicating that the data is homogeneous.

Regression Analysis

Model feasibility testing is essential in panel data analysis. This test helps determine which model is the best and most appropriate to use. In this study, it was found that the best fixed effect model (FEM) is the best model. Heteroscedasticity and multicollinearity tests were carried out as the assumption tests. Meanwhile, the correlation value between variables is < 0.8 (does not have symptoms of multicollinearity). The results of the Glejser test show that the probability value for all variables is > 0.05 (does not have symptoms of heteroscedasticity). Next, hypothesis testing can be conducted as described in Table 2.

Table 2. Regression Results

Variables	Coeff.	Prob.
C	54.3441	0.0013
CED	-29.1106	0.0706**
SIZE	-2.1658	0.0003*
CED*SIZE	0.9118	0.0816**
AGE	3.8621	0.0010*

*sign.5%; **sign. 10%.

Source: data is processed using statistical software.

Based on table 2, the model equation is as follows:

$$FV_{i,t} = 54.3442 - 29.1106CED_{i,t} - 2.1658SIZE_{i,t} + 0.9118CED*SIZE_{i,t} + 3.8621AGE_{i,t} + \varepsilon_{i,t}$$

The value of the carbon emission disclosure (CED) regression coefficient is -29.1106, and the probability value is 0.0706 < 0.1, which means that the CED has a negative effect and is significant on firm value. The regression coefficient of company size (SIZE) and its probability value are -2.1658 and 0.0003 < 0.05, respectively. It means that SIZE has a significantly negative effect on firm value. The test result of CED*SIZE is positively correlated (0.9118) and significant (0.0816 < 0.1). It can be interpreted that SIZE strengthens the positive influence of CED on firm value. The control variable firm age (AGE) shows a coefficient value of 3.8621, and a probability value of 0.0010 < 0.05, meaning that AGE has a significantly positive effect on firm value.

Discussion

The Impact of Carbon Emission Disclosure on Firm Value

The research results show that CED hurts firm value. The company's sales revenue is reliant on investments made in productive assets in the past, higher production, and higher emissions (Dang et al., 2022). Companies must pay for environmental costs associated with complying with emission regulations, which will lower their profits (Nababan & Siregar, 2023). A decline in profits can eventually lower the company's value since it sends a negative signal (bad news) to the investors.

More broadly, some financial institutions or investors are increasingly adapting their portfolios to include ESG factors in investment decisions. If there is no action/strategy to reduce these aspects, disclosing high carbon emissions will make the company less attractive to the investors who prioritize sustainable business practices, which in turn can affect the company's value. The research results align with the findings of Rachmawati (2021) which showed that firm value was negatively correlated with corporate carbon emissions.

The research results are in line with the findings of Yanto & Maryati (2023) who conducted research on industrial sector companies during the pandemic. The results showed that during the pandemic, industrial enterprises disclosed much less or decreased information about waste, energy, water, and carbon emissions. We argue that a change in priorities, scarce resources, and economic instability brought on by the crisis have occurred during the COVID-19 pandemic. Businesses can

concentrate more on preserving financial stability and navigating challenging economic times during this time. It is challenging to allot additional resources for precise carbon emission monitoring and reporting due to workforce and budget cuts. As a result, neither the quality of disclosure in general nor the quality of disclosure of carbon emissions in particular has increased or decreased. Reduced non-financial disclosures coupled with elevated risks as a result of the COVID-19 pandemic cause a company's standing in the marketplace to suffer. According to Ramadhan & Hidayat (2022), the COVID-19 pandemic has sent out negative signals or bad news, which has increased investor interest in selling their shares.

These findings contradict the stakeholder theory which reveals that stakeholders no longer only prioritize financial information but also non-financial disclosures, thereby the disclosure can improve the company's reputation (Eccles et al., 2014; Hammami & Zadeh, 2020). This finding also questions the legitimacy theory that suggests that disclosure of carbon emissions can benefit investors by providing them with the extra information they require.

Transparent disclosure of carbon emissions and the actions taken by companies to reduce the emissions and demonstrate a commitment to responsible business practices (Hardiyansah et al., 2021). However, disclosing high carbon emissions without real emission reduction action can impair the company's image in the eyes of consumers or the public who are increasingly concerned about the environmental sustainability and long-term value of the company. So in the end, it can have an impact on reduced trust in the brand/product produced and influence purchasing decisions, which in the end can affect the company's value.

The Impact of Company Size Disclosure on Firm Value

Large companies often have complex structures and require more complicated management. If management is inefficient or difficult to organize, it can reduce operational performance and innovation, which can undermine firm value. As for others, some large companies can be too diversified, performing business in many different sectors or markets. If a company's portfolio is too fragmented, it can reduce strategic focus and efficiency, which in the end can affect firm value. The study's findings support those of Ramadhan & Hidayat (2022), who found that SIZE lowers a company's value.

The global outbreak of the coronavirus disease (COVID-19) at the start of 2020 resulted in a drop in business activity (Ramadhan et al., 2023). We contend that there is a great deal of economic uncertainty for businesses of all sizes during the pandemic. Big businesses are more susceptible to unforeseen economic swings because they often have larger workforces, more intricate supply chains, and a greater reliance on international markets. When compared to small or medium-sized businesses, large companies typically have higher operating costs. Large companies are more affected by lower revenue or higher operating costs during a pandemic, particularly if they are slow to adapt.

The Moderating Role of Firm Size

Stakeholder theory suggests that a larger firm will perform better environmentally. The big company engages in intricate operational tasks. The environment will be impacted by operating activities occurring more frequently. It will draw the public's and media's attention. In response, the attraction may enhance environmental performance (Andriadi et al., 2023). Large companies are often susceptible to greater pressure and expectation from the society and stakeholders (Bedi & Singh, 2024), being more subject to stricter regulations regarding the disclosure of carbon emissions. In response to these more stringent regulations, they tend to be more active to participate in transparent and comprehensive disclosure of their carbon emissions data to increase the confidence of investors and other stakeholders. Kartikasary et al. (2023) discovered that larger businesses have the financial and material means to take an active role in reducing carbon emissions and environmental damage. An additional explanation is that big businesses utilize disclosures about their carbon emissions to present a positive image to stakeholders and investors.

4. CONCLUSION

Carbon emission disclosure (CED) has a significantly negative effect on firm value. Disclosure of high carbon emissions can also increase legal risks or face social pressure from environmental activists or other groups concerned about environmental sustainability. In particular during the COVID-19 pandemic. Companies are faced with high risks and are required to adapt quickly. During a pandemic, some companies may be forced to share their resources to address pressing challenges, such as maintaining operational continuity, keeping employees safe, or managing

economic uncertainty. This can reduce the company's focus and priority on carbon emission disclosure initiatives. SIZE impairs firm value. These results indicate that large companies also have a high level of bureaucracy or an inefficient structure. It can result in a waste of resources, high costs, or poor flexibility in adapting to the market changes, which can reduce firm value. Furthermore, SIZE can moderate the influence of CED on firm value. Large companies will possess more opportunities and intentions to disclose carbon emissions at a level far more accurate than tiny. They have adequate funds to carry out actions and strategies to reduce the negative impacts of their business activities on the environment.

Future research is expected to deploy CED measurement using 1-0 content analysis and are recommended to measure it in terms of the level of depth/detail of disclosure to obtain better results.

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REFERENCES

- Andriadi, K. D., Werastuti, D. N. S., & Sujana, E. (2023). Determinants of Carbon Emission Disclosure: A Study on Non-Financial Public Companies in Indonesia. *Jurnal Ilmiah Akuntansi*, 8(1), 287–310. <https://doi.org/10.23887/jia.v8i1.46152>
- Bedi, A., & Singh, B. (2024). Exploring the impact of carbon emission disclosure on firm financial performance: moderating role of firm size. *Management Research Review*, 47(11), 1705–1721. <https://doi.org/10.1108/MRR-01-2023-0015>
- Climate Transparency. (2022). *Climate Transparency Report: Comparing G20 Climate Action*. <https://iesr.or.id/en/pustaka/climate-transparency-report-2022>
- Dang, T. V., Wang, Y., & Wang, Z. (2022). The role of financial constraints in firm investment under pollution abatement regulation. *Journal of Corporate Finance*, 76. <https://doi.org/10.1016/j.jcorpfin.2022.102252>
- Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). the Impact of Corporate Sustainability on Organizational Processes. *Management Science*, 60(11), 2835–2857. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Hammami, A., & Zadeh, M. H. (2020). Audit quality, media coverage, environmental, social, and governance disclosure and firm investment efficiency: Evidence from Canada. *International Journal of Accounting and Information Management*, 28(1), 45–72. <https://doi.org/10.1108/IJAIM-03-2019-0041>
- Hapsoro, D., & Falih, Z. N. (2020). The Effect of Firm Size, Profitability, and Liquidity on The Firm Value Moderated by Carbon Emission Disclosure. *Journal of Accounting and Investment*, 21(2). <https://doi.org/10.18196/jai.2102147>
- Hardiyansah, M., Agustini, A. T., & Purnamawati, I. (2021). The Effect of Carbon Emission Disclosure on Firm Value : Environmental Performance and Industrial Type. *Journal of Asian Finance, Economics and Business*, 8(1), 123–133. <https://doi.org/10.13106/jafeb.2021.vol8.no1.123>
- Kartikasary, M., Wijanarko, H. M. R., Tihar, A., & Zaldin, A. (2023). The effect of financial distress and firm size on carbon emission disclosure. *In E3S Web of Conferences*, 426, 02093. <https://doi.org/10.1051/e3sconf/202342602093>
- KURNIA, P., DARLIS, E., & PUTRA, A. A. (2020). Carbon Emission Disclosure, Good Corporate Governance, Financial Performance, and Firm Value. *Journal of Asian Finance, Economics and Business*, 7(12), 223–231. <https://doi.org/10.13106/JAFEB.2020.VOL7.NO12.223>
- Kurnia, P., Nur, D. P. E., & Putra, A. A. (2021). Carbon Emission Disclosure and Firm Value : A Study of Manufacturing Firms in Indonesia and Australia. *International Journal of Energy Economics and Policy*, 11(2), 83–87. <https://doi.org/https://doi.org/10.32479/ijeep.10730>
- Ladista, R. D., Lindrianasari, L., & Syaipudin, U. (2023). Determinan Pengungkapan Emisi Karbon dan Pengaruhnya Terhadap Kinerja Keuangan. *Owner*, 7(3), 2262–2283. <https://doi.org/10.33395/owner.v7i3.1535>
- Lambey, R., Tewal, B., Sondakh, J. J., & Manganta, M. (2021). The effect of profitability, firm size, equity ownership and firm age on firm value. *Archives of Business Research*, 9(1), 128–139.

- Lee, J., & Cho, J.-H. (2021). Firm-Value Effects of Carbon Emissions and Carbon Disclosures — Evidence from Korea. *International Journal of Environmental Research and Public Health*, 18(22), 1–16. <https://doi.org/https://doi.org/10.3390/ijerph182212166>
- Margono, F. P., & Gantino, R. (2021). Influence of Firm Size, Leverage, Profitability, and Dividend Policy on Firm Value of Companies in Indonesia Stock Exchange. *Copernican Journal of Finance & Accounting*, 10(2), 45–61. <https://doi.org/10.12775/cjfa.2021.007>
- Murdiansyah, I., Pratiwi, D., Khoirunnisa, A., Siswanti, S., & Yuliana, I. (2023). DOES THE VALUE OF COAL MINING COMPANIES IN INDONESIA AFFECT GREEN ACCOUNTING , CSR , AND PROFITABILITY ? *International Conference of Islamic Economics and Business 9th 2023*, 40, 863–870. <http://repository.uin-malang.ac.id/16261/2/16261.pdf>
- Mushtaq, M., Malik, A. M., & Hameed, G. (2023). The externalities of solid fuel CO2 emissions on rice production: A time series analysis for Pakistan. *Economic Journal of Emerging Markets*, 15(2), 212–225. <https://doi.org/10.20885/ejem.vol15.iss2.art8>
- Nababan, M., & Siregar, S. (2023). The Impact of Emission GHG Performance on Financial Performance: Moderating by Financial Constraints and COVID-19. *Indonesian Journal of Economics and Management*, 3(3), 535–550. <https://jurnal.polban.ac.id/ojs-3.1.2/ijem/article/view/4946%0Ahttps://jurnal.polban.ac.id/ojs-3.1.2/ijem/article/download/4946/3246>
- Prayogo, Y., Mutia, A., Hardiningsih, P., & Setiawati, I. (2023). The Relationship of Sustainability Report with Firm Values Jakarta Islamic Index. *Jabe (Journal of Accounting and Business Education)*, 8(2), 99. <https://doi.org/10.17977/jabe.v8i2.46032>
- Rachmawati, S. (2021). Green Strategy Moderate the Effect of Carbon Emission Disclosure and Environmental Performance on Firm Value. *International Journal of Contemporary Accounting*, 3(2), 133–152. <https://doi.org/10.25105/ijca.v3i2.12439>
- Rahman, M. J., & Yilun, L. (2021). Firm Size, Firm Age, and Firm Profitability: Evidence from China. *Journal of Accounting, Business and Management*, 28(April), 101–115.
- Ramadhan, A. J., & Hidayat, T. (2022). IDEAS: Journal of Management and Technology EFFECT OF THE COVID-19 PANDEMIC ON FIRM VALUE WITH PROFITABILITY AS MODERATION. *IDEAS: Journal of Management and Technology*, 2(2), 11–19. <http://e-journal.president.ac.id/presunivojs/index.php/IDEAS>
- Ramadhan, P., Rani, P., & Wahyuni, E. S. (2023). Disclosure of Carbon Emissions, Covid-19, Green Innovations, Financial Performance, and Firm Value. *Jurnal Akuntansi Dan Keuangan*, 25(1), 1–16. <https://doi.org/10.9744/jak.25.1.1-16>
- Sari, C. W., Sudana, I. P., Ratnadi, N. M. D., & Rasmini, N. K. (2022). Stakeholder pressure and environmental performance of manufacturing companies on the Indonesian stock exchange. *Linguistics and Culture Review*, 6(May), 893–903. <https://doi.org/10.21744/lingcure.v6ns1.2187>
- Setiawan, V. N. (2023). No Title. Cnbcindonesia.Com. <https://www.cnbcindonesia.com/news/20230124111513-4-407752/ini-alasan-pemerintah-rilis-aturan-ekonomi-karbon>
- Susilawati, S., Arifiyanti, D., Samukri, Suryaningsih, M., & Kuraesin, A. D. (2024). GREEN ACCOUNTING , CSR DISCLOSURE , FIRM VALUE , AND. *Economic Studies Journal*, 33(1), 14–26. https://www.iki.bas.bg/Journals/EconomicStudies/2024/2024-1/02_Susi-Susilawati.pdf
- Susilawati, S., & Suryaningsih, M. (2020). Firm Value Analysis on Lq45 Companies In 2016-2017. *IRE Journals*, 4(5), 36–43. <https://www.irejournals.com/formatedpaper/1702529.pdf>
- Wenni Anggita, Ari Agung Nugroho, & Suhaidar. (2022). Carbon Emission Disclosure And Green Accounting Practices On The Firm Value. *Jurnal Akuntansi*, 26(3), 464–481. <https://doi.org/10.24912/ja.v26i3.1052>
- Yanto, H., & Maryati, D. (2023). Does the COVID-19 Pandemic Affect the Transparency of Indonesian Industrial Companies in Managing Energy, Water, Carbon Emissions, and Wastes? In *Proceedings of the Unima International Conference on Social Sciences and Humanities (UNICSSH 2022)*. Atlantis Press SARL. https://doi.org/10.2991/978-2-494069-35-0_34