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DOES ESG IMPACT FINANCIAL PERFORMANCE? FINANCIAL CONSTRAINTS AND FINANCIAL SLACK AS MODERATORS

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Abstract. This study aims to examine the effect of Environmental, Social, and Governance (ESG) factors on financial performance, with financial constraints and financial slack serving as moderating variables. The study population consists of all energy sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2020–2024. The sample was determined using purposive sampling, resulting in 7 companies with a total of 35 observations. Data analysis was conducted using Moderated Regression Analysis (MRA) with EViews software version 13. The results indicate that ESG has a positive effect on financial performance with a coefficient of 6.670 and a significance level of 0.034, financial constraints do not moderate the relationship between ESG and financial performance, as evidenced by a coefficient of -0.068 with a probability of 0.964. Conversely, financial slack was found to strengthen the effect of ESG on financial performance, with a coefficient of 3.029 and a significance level of 0.001. This study contributes to the development of ESG literature by incorporating financial condition as a moderating factor and provides practical implications for management in optimizing resources to support ESG implementation.

Keywords: ESG; Financial Constraints; Financial Performance; Financial Slack

I. INTRODUCTION

In the modern business era, sustainability issues are increasingly becoming a top priority for companies, particularly in the energy sector, which has a significant impact on the environment [1]. Activities in the energy sector, whether based on conventional or renewable energy, are closely linked to the large-scale use of natural resources and high levels of carbon emissions, making them a top priority in efforts to preserve the environment [2]. These significant environmental pressures are driving companies in the energy sector to adopt Environmental, Social, and Governance (ESG) principles as a strategy for managing sustainability risks. The implementation of ESG has the potential to influence a company's economic aspects through changes in cost structures, investment needs, and operational efficiency, which in turn impact financial performance [3].

Financial performance is an evaluation of the financial condition of a company or organization, indicating how well the company manages its resources to achieve its objectives and generate revenue. One of the key indicators in assessing financial performance is return on assets (ROA), which measures how effectively a company uses its total assets to generate profit. The higher the ROA value, the lower a company's risk of bankruptcy [4]. ROA can be calculated by dividing net profit after tax by total assets [5]. The following is a summary of data for companies in the energy sector based on Return on Assets (ROA) categories for the 2020–2024 period.

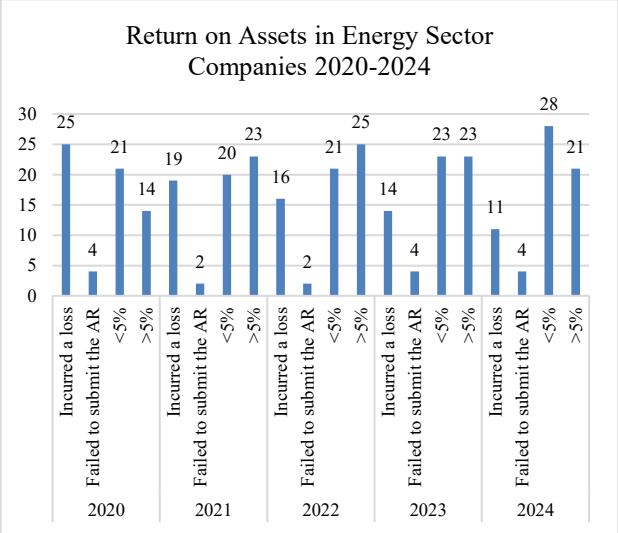

Figure 1

Return on Assets of Energy Sector Companies for the Period 2020-2024

Source: Data processed by researchers, 2026

Based on the Return on Assets (ROA) data of companies in the energy sector for the 2020-2024 period, the number of companies with an ROA above 5% ranges from 14 to 25 companies. This condition shows that only some companies are

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able to manage their assets effectively in generating profits. Meanwhile, the number of companies with an ROA below 5% ranges from 20 to 28 companies, indicating low profitability and suboptimal asset management. These findings show that the financial performance of energy sector companies as measured by ROA is still suboptimal, requiring further study of factors that can affect financial performance, including the implementation of Environmental, Social, and Governance (ESG) principles.

Environmental, Social, and Governance (ESG) refers to a range of a company's operational activities that focus not only on profit but also on good corporate governance practices, social aspects, and environmental considerations [6]. Companies use ESG to manage non-financial risks that could impact their financial performance [7], and these are generally measured using the GRI Standards, developed by the Global Reporting Initiative as a transparent and organized framework for sustainability reporting [8]. Based on stakeholder theory, a company is responsible to all stakeholders, not just shareholders alone, but encompasses all interested parties [9]. The implementation of ESG principles can enhance financial performance as it reflects effective governance practices and the company's ability to meet stakeholder expectations [10] Research conducted by [11], [12], and [13] consistently shows that ESG has a positive impact on financial performance. This contrasts with research by [14], which states that ESG has no effect on financial performance. These differing research results suggest that the impact of ESG on financial performance is not always consistent, implying that other factors may weaken or strengthen the influence of ESG on financial performance.

One factor that could potentially limit the effectiveness of ESG is the presence of financial constraints, which increase the risk of financial stress and hinder access to external capital; this makes ESG integration more difficult and ultimately leads to a decline in a company's financial performance. High financial constraints can prevent companies from implementing ESG principles and may result in a decline in financial performance [15]. Therefore, a company's ability to optimize ESG implementation to improve financial performance is influenced by the level of financial constraints. This finding is supported by previous studies [16] and [15], which revealed that financial constraints weaken the impact of ESG on financial performance. However, this condition does not apply to all companies, as some companies possess a higher level of financial flexibility to support ESG implementation.

This study builds upon a previous study [16] that examined the impact of ESG on financial performance, with financial constraints serving as a moderating variable. That study focused on manufacturing companies during the 2016–2020 period. In contrast, this study focuses on companies in the energy sector during the 2020-2024 period, which are considered to have a high level of risk in the implementation of ESG aspects because their operational activities are directly related to the utilization of natural resources [17]. In addition to differences in research subjects and periods, this study builds upon previous research by adding financial slack as an additional moderating variable. Financial slack refers to a company's unallocated cash reserves. In practice, this allows companies to invest in innovation and sustainable practices without compromising core operations [18]. The presence of financial slack alleviates short-term pressure from investors or the capital market, thereby granting managers the freedom to pursue sustainability goals [19]. In this context, companies with high levels of financial slack have greater capacity to implement ESG in an efficient and optimal manner [19]. Thus, this study provides an empirical perspective on the influence of a company's financial condition on ESG and its impact on financial performance.

Based on the preceding discussion, the following hypotheses are formulated:

H1: ESG has a positive effect on financial performance

H2: Financial constraints moderate the effect of ESG on financial performance

H3: Financial slack moderates the effect of ESG on financial performance

II. RESEARCH METHODS

The population of this study comprises energy sector companies listed on the Indonesia Stock Exchange during the 2020-2024 period. The selection of the energy sector is based on its high relevance to environmental and social issues, making the implementation of Environmental, Social, and Governance (ESG) principles relevant and potentially influential on corporate financial performance. The sample was determined using purposive sampling, a technique based on specific criteria tailored to the research objectives to ensure the sample adequately represents the population. The sample size in this study is relatively limited, consisting of 7 companies with a total of 35 observations, due to the limited availability of ESG data based on Global Reporting Initiative (GRI) standards, given that not all companies consistently disclosed ESG information during the study period. Therefore, only companies meeting the data completeness criteria were included as the research sample. The criteria for the sample size are as follows:

Table 1. Number of Research Samples

No	Criteria	Number
1	Energy sector companies listed on the Indonesia Stock Exchange (IDX) consecutively during the 2020-2024 period.	91
2	Energy companies that did not publish complete and consecutive annual reports and sustainability reports in 2020-2024.	(48)
3	Energy companies that experienced consecutive profits in 2020-2024.	(36)
	Research sample	**7**

ESG is represented by GRI standards, which were created by the Global Reporting Initiative with global consistency to provide a platform for public reporting on social, environmental, and governance issues. ESG assessments refer to GRI indices that are presented explicitly. Sustainability report disclosure is measured by giving a score of one if an item is disclosed, and zero if it is not [8].

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$$\text{ESG}: \frac{\text{Number of Company Disclosure Items}}{\text{GRI Standard Disclosure Items}} \quad (1)$$

Financial performance is used to assess the extent to which a company has implemented and managed financial rules appropriately and in accordance with regulations. Financial performance is proxied using a measure of profitability, namely ROA [20].

$$\text{ROA}: \frac{\text{Net Profit}}{\text{Total Asset}} \times 100\% \quad (2)$$

Financial constraints are a significant risk of bankruptcy and are very important to a business's ability to maintain its operations. Financial constraints are measured using the Altman Z-Score, an indicator used because it can show a company's level of financial stress, where a low Z-Score indicates greater financial constraints [16].

$$Z: 1.2X1 + 1.4X2 + 3.3X3 + 0{,}6X4 + 1{,}0X5 \quad (3)$$

Description :

X1 : working capital/total assets

X2 : retained earnings/total assets

X3 : EBIT/total asset

X4 : market value of equity/total liabilities

X5 : sales/total assets

Financial slack refers to a company's unallocated cash reserves. This variable is calculated using the current ratio because this ratio indicates the availability of current assets that can be used for internal financing [21].

$$\text{Slack}: \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (4)$$

The data analysis and hypothesis testing techniques used are moderated regression analysis (MRA) with a panel data regression approach, where the entire data processing and analysis process is carried out using EViews version 13. The analysis begins with descriptive statistics to provide a brief overview of the research data. In the next step, EViews 13 is used to find the most appropriate panel data regression model. This was done by testing the Chow test and Lagrange Multiplier. The selected estimation model was then tested for feasibility using classical assumption testing, which included tests for normality, heteroscedasticity, and multicollinearity. Hypothesis testing was then carried out based on the best model from the estimation with a significance level of 5%. The research model is as follows.

$$Y: \beta_0 + \beta_1 X + \beta_2 Z1 + \beta_3 Z2 + \beta_4 (X \times M1) + \beta_5 (X \times M2) + e \quad (5)$$

Description :

Y : Measured using ROA

X : ESG

Z1 : Financial Constraints

Z2 : Financial slack

X × Z1: ESG interaction with financial constraints (moderation 1)

X × Z2 : ESG interaction with financial slack (moderation 2)

e : Error (interference error rate)

III. RESULT AND DISCUSSION

Descriptive statistical analysis was conducted to provide an overview of the characteristics of the panel data used in this study. The data consisted of 7 companies observed during 2020-2024, resulting in a total of 35 observations.

Table 2. Descriptive Statistics

	ROA	ESG	Financial Constrainst	Financial Slack
Mean	11.86	1.39	14.60	1.89
Median	07.20	1.44	14.27	1.60
Max	54.90	2.32	24.24	4.48
Min	0.90	0.44	06.02	0.73
Std. Dev.	11.30	0.49	05.78	0.90

Descriptive statistics show that the dependent variable has an average value of 11.86 with a standard deviation of 11.30, indicating variation in performance between observation units and over time. Meanwhile, the independent variable shows a relatively moderate level of variation. Therefore, the data is suitable for further analysis using a panel data regression approach.

Selection of the panel data regression model for this study, Chow's test was used to determine the model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM).

Table 3. Chow Test

Effects Test		Statistic	Probability
Cross-section Test	F	1.412	0.2526
Cross-sectional Chi-square Test		10.976	0.0891

The test results show that the Chow Test probability value is greater than the significance level of 0.05 (p-value > 0.05). This finding indicates that there are no significant individual effect

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differences between observation units, so the Common Effect Model is more appropriate to use than the Fixed Effect Model.

Next, to determine whether the Common Effect Model or Random Effect Model (REM) is more efficient, the Lagrange Multiplier (LM) test is conducted. This test aims to determine the best model between CEM and REM.

Table 4. Lagrange Multiplier Test

Effects Test	Statistic	Probability
LM Cross-section Test	0.04	0.840

The LM test results show a probability value of 0.840, which is greater than the significance level of 0.05. Thus, there is insufficient statistical evidence to support the existence of a random effect, so the Common Effect Model remains the most appropriate estimation model in this study.

Table 5. Normality Test

Normality Test	Statistic	Probability
Uji Jarque-bera	0.858	0.650

The Jarque–Bera normality test results show that the data (residual) has a probability value of 0.650, which is greater than 0.05, so it can be concluded that the data is normally distributed.

Table 6. Heteroscedasticity Test

Dependent Variable : Absolute Residual Value		
Variable	t-staistic	Probability
Constant	-0.145721	0.8851
ESG	0.430100	0.6703
Financial Constraints	-0.664034	0.5119
Financial Slack	1.481266	0.1493
ESG1*Financial Constraits	0.430087	0.6703
ESG1*Financial slack	-1.253261	0.2201

The results of the heteroscedasticity test show that all variables have a probability value above 0.05, so that the regression model meets the assumption of homoscedasticity and can be used to test the hypothesis.

Table 7. Multicollinearity Test

	ROA	ESG	Financial Constraints	Financial slack
ROA	1.00			
ESG	0.05	1.00		
Financial Constraints	-0.24	0.04	1.00	
Financial slack	0.47	0.07	-0.23	1.00

The results of multicollinearity testing show that the correlation values between variables are below the limit of 0.80. On the other hand, a correlation value of 1.00 on the diagonal indicates the relationship between variables and themselves and does not indicate a problem. Therefore, it can be concluded that there is no multicollinearity between independent variables in the regression model.

Table 8. Hypothesis Testing

Variable	Coefficient	t-statistic	Probability
Constant	6.504	2.161	0.039
ESG	6.670	2.226	0.034
ESG*Financial Constraints	-0.068	-0.045	0.964
ESG*Financial Slack	3.029	3.538	0.001

Based on the t-test results in Table 8, the ESG variable shows a regression coefficient of 6.670 with a probability value of 0.034 (< 0.05), which indicates that ESG has a positive effect on financial performance (ROA).

The results of testing the interaction between ESG and financial constraints show a regression coefficient of (0.068) with a significance level of 0.964 (> 0.05). These findings indicate that financial constraints do not have an effect as a moderating variable in the relationship between ESG and ROA financial performance.

The interaction test between ESG and financial slack produced a regression coefficient of 3.029 with a significance value of 0.001 (< 0.05). This result indicates that financial slack strengthens the influence of ESG on ROA.

Table 9. Coefficient of Determination (Adjusted R2)

R-squared	0.481818
Adjusted R-squared	0.392476

The Adjusted R-squared value is 0.392476 or 39.25%, indicating that variable X (ESG) simultaneously affects variable Y (financial performance) by 39.25%, while the remaining 60.75% is influenced by other factors outside the model.

The results of the study indicate that ESG has a positive effect on financial performance. This finding is supported by descriptive statistics in Table 3, which show an average ESG score of 1.39 and ROA of 11.86. As an empirical example, PT ABM Investama Tbk (ABMM) in 2021 recorded an ESG score of 2.19 and an increase in ROA of 16.03, indicating that a higher level of ESG implementation is followed by better financial performance. This condition reflects that companies that implement ESG better can manage assets more efficiently to generate profits. Therefore, it can be concluded that the higher the implementation of ESG, the better the company's financial performance.

The results of this study are in line with stakeholder theory, which states that the application of ESG principles can improve financial performance because it reflects effective governance practices and the company's ability to meet stakeholder expectations [10]. This is consistent with the results of studies by [10], [11] and [12], which state that ESG affects financial performance, but it does not correspond with the results of studies by [14] and [16], which state that ESG does not have a positive effect on financial performance.

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The results of Moderated Regression Analysis (MRA) show that financial constraints do not affect the influence of ESG on financial performance. This finding is indicated by the interaction probability value between ESG and financial constraints of 0.96, which is above the significance level of 0.05. Based on the results of this study's data processing, the relationship between ESG implementation and financial performance remains intact even when companies are in a situation of financial constraints.

Within the stakeholder theory framework, companies are responsible for all stakeholders, not just shareholders, but all interested parties. ESG is maintained as part of the company's long-term strategy to maintain relationships with stakeholders and support the sustainability of the company's operations even in times of financial constraints [22]. Therefore, ESG practices are maintained as a long-term strategy and do not depend on short-term financial conditions, even if the company faces financial constraints. These findings can also be interpreted to mean that ESG practices by companies do not always require large costs, but rather effective management and a strategic approach, so that financial constraints do not moderate the influence of ESG on financial performance. The results of this study differ from the findings of [18], [16] and [23], which state that financial constraints strengthen or weaken the influence of ESG on financial performance.

The results of the study indicate that financial slack strengthens the influence of ESG on financial performance. These findings show that the influence of ESG on a company's financial performance tends to increase in line with the company's high level of financial slack. As an empirical illustration, PT IMC Pelita Logistik Tbk shows a relatively high level of financial slack in 2024, as indicated by its liquidity flexibility and sufficient cash reserves. In addition, this company shows stable financial performance and has a relatively improved level of ESG disclosure, which indicates that the absence of financial constraints allows the company to allocate resources more efficiently to support ESG implementation. This condition is in line with stakeholder theory, which emphasizes the importance of managing stakeholder interests through long-term sustainability strategies.

The results of this study are supported by [19], [24] and [25], which states that ESG implementation requires large initial investments, is long-term in nature, and involves uncertainty regarding financial benefits in the early stages. Companies with adequate financial slack are better able to bear the costs, manage risks, and optimize the economic value of ESG implementation.

IV. CONCLUSIONS

Data analysis in this study shows that ESG has a positive effect on financial performance, which is in line with stakeholder theory that the implementation of ESG practices can improve a company's financial performance because it reflects the company's efforts to meet the interests of stakeholders. The results of the moderation analysis show that financial constraints do not moderate the effect of ESG on financial performance, while financial slack is proven to strengthen the effect of ESG on financial performance, reflecting that sufficient internal financial resources support the implementation of ESG more effectively. This study has limitations in the use of the GRI index as an ESG measurement indicator that is disclosure-oriented and prone to differences in reporting standards between companies, especially since most companies in Indonesia refer to POJK provisions. In addition, the Adjusted R2 value of 39.25% indicates that other factors outside the model used still affect financial performance. Therefore, further research is recommended to add variables such as liquidity as a measure of short-term financial flexibility that can affect financial performance [26]. Furthermore, it is recommended to use the Bloomberg ESG Database because it provides more standardized, consistent, and comprehensive ESG measurements, enabling more objective ESG performance comparisons [16].

REFERENCES

[1] B. Putra and E. Sisdianto, "Penerapan Green Accounting Dalam Mendukung," *J. Media Akad.*, vol. 2, no. 12, pp. XX–XX, 2024.

[2] H. Wang and Z. Lei, "Energy supply from oil and gas, mineral depletion, and total natural resource rents: Impact of oil equivalent energy use CO2 intensity," *Resour. Policy*, vol. 86, p. 104172, 2023.

[3] M. A. Durlista and I. Wahyudi, "Jurnal ESG Durlita & Wahyudi," *Pengaruh Pengungkapan Environ. Soc. Dan Gov. Terhadap Kinerja Perusah. Sub Sekt. Pertamb. Batu Bara Periode 2017-2022*, vol. 7, no. 3, pp. 210–232, 2023.

[4] D. Kajang, G. Pungus, and E. Sumanti, "Sustainable Business and Corporate Financial Sustainability," *J. Account. Financ. Manag.*, vol. 6, no. 2, pp. 598–610, 2025, doi: 10.38035/jafm.v6i2.1877.

[5] K. W. A. Permana, R. Saleh, Nelly, L. Sari, and S. Sutandi, "Analisis Return On Assets (ROA), Return On Equity (ROE), Net Profit Margin (NPM) dan Gross Profit Margin Untuk Mengukur Kinerja Keuangan Pada PT Raje Baginda Jurai di Palembang," *J. Kaji. Ekon. dan Bisnis*, vol. 5, no. 1, pp. 53–70, 2021.

[6] F. Antonius and I. Ida, "pengaruh environmental, social, governance (esg) dan intellectual capital terhadap kinerja perusahaan," 2023. [Online]. Available: http://ejournal.utmj.ac.id/index.php/ekobis126

[7] J. Ekonomi and M. Farhan, "Currency : Currency :," *J. Ekon. dan Perbank. syariah*, vol. 02, no. April, pp. 243–264, 2024.

[8] A. Ghazali and Z. Zulmaita, "Pengaruh pengungkapan environmental, social, and governance (esg) terhadap tingkat profitabilitas perusahaan (studi pada perusahaan sektor infrastruktur yang terdaftar di bursa efek indonesia)," in *Seminar Nasional Akuntansi dan Manajemen PNJ*, 2022.

[9] R. E. Freeman, J. S. Harrison, A. C. Wicks, B. L. Parmar, and S. De Colle, "Stakeholder theory: The state of the art," 2010.

[10] S.-P. Lee and M. Isa, "Environmental, social and governance (ESG) practices and financial performance of Shariah-compliant companies in Malaysia," *J. Islam.*

Account. Bus. Res., vol. 14, no. 2, pp. 295–314, 2023.

[11] A. N. Ihsani, S. R. Nidar, and M. Kurniawan, "Does ESG Performance Affect Financial Performance? Evidence from Indonesia," *Wiga J. Penelit. Ilmu Ekon.*, vol. 13, no. 1, pp. 46–61, Mar. 2023, doi: 10.30741/wiga.v13i1.968.

[12] S. Nurbaiti Pertiwi, A. Muslim, and M. C. Widiastuti, "analisis pengaruh kinerja esg dan corporate governance terhadap financial performance dengan digital transformation sebagai variabel moderasi pada perusahaan lq45," *JurnalIlmiahMEA(Manajemen,Ekonomi,danAkuntansi)*, vol. 8, no. 2, 2024.

[13] N. A. Nugroho and H. Hersugondo, "Analisis Pengaruh Environmental, Social, Governance (ESG) Disclosure terhadap Kinerja Keuangan Perusahaan," *jurnalilmiah ekon. dan bisnis*, vol. 15, no. 2, pp. 233–243, Dec. 2022, [Online]. Available: http://journal.stekom.ac.id/index.php/E-Bisnispage233

[14] E. V. Husada and S. Handayani, "pengaruh pengungkapan esg terhadap kinerja keuanganperusahaan(studiempirispadaperusahaansektorkeuanganyangterdaftardi bei periode2017-2019)," *J. Bina Akunt.*, vol. 8, pp. 122–144, 2021.

[15] Y. Xu and N. Zhu, "The Effect of Environmental, Social, and Governance (ESG) Performance on Corporate Financial Performance in China: Based on the Perspective of Innovation and Financial Constraints," *Sustain.* , vol. 16, no. 8, Apr. 2024, doi: 10.3390/su16083329.

[16] L. Rizky Bunga Pertiwi, "pengaruh kinerja environmental, social, governance (esg) terhadap kinerja perusahaan dengan kendala keuangan sebagai variabel moderasi (Studi pada Perusahaan Manufaktur yang terdaftar di Bursa Efek Indonesia tahun 2016-2020)," *diponegoro j. Manag.*, vol. 12, no. 1, pp. 2337–3792, 2023, [Online]. Available: http://ejournal-s1.undip.ac.id/index.php/dbr

[17] W. Prihandini and M. A. F. Anshari, "pengaruh pengungkapanenvironmental, social,governance (esg) dan kinerja keuanganterhadapnilai perusahaan pada sektor energydanbasicmaterialyang terdaftar di bursa efek indonesiaperiode tahun 2021–2023," *edunomika,* vol. 08, 2024.

[18] A. Revi Marisa and D. Febriantina Istiqomah, "ESG Impact on Financial Performance: Financial Constraints and CEO Characteristics as Moderators," *J. Ris. Akuntansidan Keuang.*, pp. 1527–1548, 2025, doi: 10.17509/xxxx.xxx.

[19] F. Wahyuni and H. S. Ahdim, "Pengaruh Pengungkapan Environmental, Social, and Governance terhadap Kinerja Keuangan dengan Financial Slack sebagai Moderasi," *Reviu Akunt. dan Bisnis Indones.*, vol. 9, no. 1, pp. 204–227, Mar. 2025, doi: 10.18196/rabin.v9i1.27002.

[20] M. B. A. Francis Hutabarat, *Analisis kinerja keuangan perusahaan*. Desanta Publisher, 2021.

[21] D. Febriani and D. Darmawati, "Pengaruh Carbon Productivity dan Biaya Lingkungan Terhadap Kinerja Keuangan Perusahaan dengan Financial Slacks Sebagai Pemoderasi," *R2J*, vol. 7, no. 3, 2025, doi: 10.38035/rrj.v7i3.

[22] S. Kumar, "A review ESG performance as a measure of stakeholders theory," *Acad. Mark. Stud. J.*, vol. 27, no. S3, 2023.

[23] B. R. Haryono and H. Wirianata, "Pengaruh Kinerja ESG terhadap Kinerja Keuangan Perusahaan: Peran Mediasi Inovasi Hijau dan Moderasi Kendala Keuangan," *J. Econ. Bus. UBS*, vol. 14, no. 3, pp. 525–544, 2025, doi: 10.52644/joeb.v14i3.2714.

[24] R. Nurmala and A. Pratama, "Dampak Penerapan Environmental, Social, Governance (ESG) Terhadap Struktur Modal dan Kinerja Keuangan Pada Perusahaan Manufaktur Di Bursa Efek Indonesia Periode 2019-2024," *RIGGS J. Artif. Intell. Digit. Bus.*, vol. 4, no. 4, pp. 3357–3369, 2025, doi: 10.31004/riggs.v4i4.4042.

[25] E. Duque-Grisales and J. Aguilera-Caracuel, "Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack," *J. Bus. Ethics*, vol. 168, no. 2, pp. 315–334, Jan. 2021, doi: 10.1007/s10551-019-04177-w.

[26] S. R. Putri and S. Mayangsari, "Pengaruh Pertanggungjawaban Environmental, Social dan Governance (ESG), Likuiditas, dan Leverage Terhadap Kinerja Keuangan Perusahaan Publik," *Ekon. Digit.*, vol. 2, no. 2, pp. 133–148, 2024, doi: 10.55837/ed.v2i2.108.