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Original Article

Determinants of ESG Scores among IDX Energy Companies Listed on the Indonesia Stock Exchange: The Role of Profitability and Audit Quality

[1]Dewi Agustina, [2]Nataherwin, [3]Syariffudin, [4]Andi Kusumawati
[1,2]Trisakti School of Management, Jakarta, Indonesia.
[3]Tarumanagara University, Jakarta, Indonesia.
[4]Hasanuddin University, Sulawesi Selatan, Indonesia.

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Abstract: *This study examines whether profitability and audit quality are associated with Environmental, Social, and Governance (ESG) risk scores among energy companies listed on the Indonesia Stock Exchange in 2025 the purposively selected sample comprised 17 observations. Profitability was measured by return on assets (ROA), and engagement of a Big Four financial statement auditor was used as a proxy for audit quality. Higher ESG scores indicate greater unmanaged ESG risk. Multiple linear regression yielded an adjusted R^2 of 0.140, and the overall model was not statistically significant ($p = 0.136$). ROA had a positive coefficient ($p = 0.061$), while Big Four auditor engagement had a negative coefficient ($p = 0.517$). Neither association was statistically significant at the 5% level. For investors, these findings suggest assessing published ESG risk scores alongside the scope of any independent sustainability assurance. For energy companies, the findings underscore the value of tracking unmanaged ESG risk directly when evaluating sustainability initiatives. The small sample limits the generalizability of the findings.*

Keywords: *ESG Scores, Profitability, Audit Quality, Big Four Audit Firms, IDXENERGY.*

I. INTRODUCTION

Over the past decade, global investment has shifted from a short-term focus on profit toward long-term sustainability through Environmental, Social, and Governance (ESG) considerations. Corporate value can be measured by assessing how a company performs financially, as well as by its corporate purpose. In addition, investors are now using Environmental, Social and Governance (ESG) criteria when evaluating the long-term potential of a business and the associated risks. The Indonesian energy industry has been under much criticism due to the large scale of environmental and social issues it causes, such as CO2 emissions and land destruction. The negative impacts could damage the company's image, the value of the stock, and the long-term survival of the business. Due to the increasing pressure on companies to be transparent, the Financial Services Authority (OJK) implemented Regulation No. 51/POJK.03/2017, which mandates all publicly listed companies to prepare sustainability reporting. However, concerns regarding selective reporting and "green-washing" have raised doubts about whether or not this reporting will provide accurate information.

This research will examine the relationship between profitability and audit quality, which can be seen as two variables that could potentially affect the ESG score of energy companies traded on the Indonesia Stock Exchange (IDX). Profitability, as represented by Return on Assets (ROA), indicates a company's ability to finance its sustainability efforts and its management of environmental and social risks. It is assumed that companies with financial stability will have more resources to devote to sustainable practices, whereas companies facing financial constraints may prioritize short-term profit over long-term sustainability. Audit quality as proxy by the use of one of the top four auditing organizations is used as an instrument for enhancing monitoring and increasing the credibility of financial reporting. The Big Four auditing organizations are assumed to have better mechanisms for evaluating risk, as well as additional resources to detect significant misstatements related to environmental, social and governance (ESG) factors. Therefore, high-quality auditors may be able to promote more reliable ESG disclosure and ensure that important sustainability-related matters are given adequate consideration throughout the auditing process.

The objective of the current research is to analyze the relationship between profitability, audit quality, and environmental, social, and governance (ESG) scores within Indonesia's high-risk energy sector. This analysis will provide additional insight into investor risk assessment capabilities, increase transparency in corporate reporting, and guide regulators in developing guidance for audits of ESG-related information. In addition to providing value to investors and regulators, the research suggests that ESG reporting can serve as a strategy to build trust with stakeholders, promote accountability, and create long-term corporate value through profitability and purpose.

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II. LITERATURE REVIEW

A) Agency Theory

Agency Theory forms the core basis for examining how corporate governance relates to ESG disclosure. Jensen and Meckling (1976) have provided a model to illustrate how conflicts of interest can occur when there is an imbalance in information sharing between management (agents) and shareholders (principals). This type of information disparity exists in the energy industry, as it relates to operational challenges, as well as the potential impact of operations on the environment. Therefore, high-quality auditors (the Big Four), can act as an independent monitoring mechanism that will help to limit the opportunity for managers to engage in opportunistic behavior; e.g. "greenwashing", which will allow for more accurate reporting of ESG scores and, therefore, the actual level of sustainability performance (Al-Shaer & Zaman, 2016).

B) Legitimacy Theory

The Legitimacy Theory states that organizations are consistently attempting to establish legitimacy for their business activities by adhering to social expectations (Deegan, 2002). For energy companies listed on the IDX, there is an increasing amount of public pressure regarding the company's carbon emissions and the use of land, which creates a need for these companies to obtain legitimacy through having high ESG scores. In addition, the primary source used in this research suggests that companies are now focusing on both profit and purpose to sustain their social license to operate (Appiah, 2020).

III. RESEARCH METHODOLOGY

A) Hypothesis Development

Hypothesis development in this study draws on the integration of Agency Theory and Resource Theory, viewing ESG reporting as a strategic instrument for reducing information asymmetry and establishing social legitimacy. Indonesia's energy sector faces unique challenges due to the substantial environmental impacts of its operations, requiring rigorous monitoring mechanisms and sufficient financial capacity to maintain its sustainability reputation. Accordingly, it is necessary to examine the factors that may influence assessments of ESG reporting. This study therefore develops and tests the following hypothesis.

a. The Effect of Profitability (ROA) on ESG Scores

The fundamental theoretical base for this association is Slack Resources Theory. This theory indicates that having a higher level of financial performance gives management more options to spend money on things other than money-making activities. Energy companies that have a lot of profits (profitability measured through return on assets - ROA) will have the money needed to purchase low-emission technology and complete corporate social responsibility programs.

On the other hand, the cost of being financially strained may cause businesses to focus on surviving in the near future, which will result in little to no development of their ESG capabilities. Sufficient internal resources enable companies to exercise greater control over industry risks assessed by rating agencies. Therefore, profitability is expected to be a positive predictor of the quality of ESG disclosure and corporate ESG reputation on the Indonesia Stock Exchange (IDX).

H1: Profitability (ROA) has a positive effect on the ESG scores of energy sector companies listed on the IDX.

b. The Effect of Audit Quality (Big Four) on ESG Scores

Audit quality, proxied by the engagement of a Big Four public accounting firm, serves as a crucial external assurance mechanism. Big Four auditors possess the expertise, resources, and global reputation that encourage them to conduct more comprehensive risk assessments, including risks arising from environmental and social issues. As stated by the PCAOB (2010c), auditors must evaluate their clients' non-financial activities because such information reflects management integrity.

The presence of Big Four auditors places pressure on energy companies to enhance governance transparency and environmental compliance, which correspond to the Governance and Environmental components of ESG, respectively. This helps mitigate litigation risk and the risk of future audit failures. Accordingly, the engagement of high-quality auditors is expected to contribute significantly to improved corporate ESG scores through more rigorous verification processes.

H2: Audit quality (Big Four) has a positive effect on the ESG scores of energy sector companies listed on the IDX.

B) Research Methodology

a. Sample Selection Procedure

This study adopts a quantitative approach and uses purposive sampling to select energy sector companies listed on the IDX. Following a rigorous selection procedure, the sample includes only companies with available ESG scores for 2025. Financial and audit data are collected from financial statements published on the IDX website. To ensure the completeness of observations and maintain the validity of the statistical results, companies with missing or inconsistent data are excluded from the final sample.

b. Operational Definitions of Variables

1. ESG Score (Dependent Variable)

In this research project, the ESG Score is considered a numerical measure that represents the degree of unmanaged financial risk related to environmental, social, and governance issues for those firms trading on the Indonesia Stock Exchange (IDX). The IDX provides the ESG Score to investors via its rating platform, which has been created in partnership with an independent organization to evaluate firm-level performance in relation to non-financial risks. As classified by the IDX, the ESG Scores have been categorized into five different risk levels depending on their respective ranges:

- Negligible Risk (Score 0–10): Risk considered negligible.
- Low Risk (Score 10–20): Low risk impact.
- Medium Risk (Score 20–30): Moderate business risk.
- High Risk (Score 30–40): High risk impact on the company.
- Severe Risk (Score >40): Severe risk with poor management of controversies.

This score is used as a proxy for assessing corporate transparency and accountability in meeting the sustainability standards mandated by the Financial Services Authority (OJK) through Regulation No. 51/POJK.03/2017. A higher score indicates a greater level of corporate ESG risk, which may theoretically influence investors' assessments of firm value in the capital market.

2. Independent Variables

Both independent variables in this study are obtained from financial statements published on the IDX website. The first independent variable, ROA (profitability), is an indicator of how efficiently a business is operating and is calculated by dividing operating income (earnings before interest and taxes) by the amount of total assets. The second independent variable, BIG4 (audit quality), is a dummy variable that is given a value of 1 when the company is audited by one of the "Big Four" public accounting firms (EY, PwC, KPMG, or Deloitte), and 0 when the company is audited by another public accounting firm.

c. Regression Model and Analytical Techniques

Data analysis is conducted using multiple linear regression with statistical software to test the explanatory power of each Independent variable. The regression model is specified as follows:

$$"ESG_Score"=\alpha+\beta_1\ "ROA"+\beta_2\ "BIG4"$$

IV. RESULTS AND DISCUSSION

A) Sample Selection

The sample selection process began by examining ESG scores published on the IDX website. As discussed in the introduction, this study focuses on energy companies in Indonesia. The descriptive statistical results indicate that the sustainability risk profile of the sampled companies in the IDXENERGY index is relatively critical, with an average ESG score of 40.60. This figure firmly places the majority of Indonesian energy companies in the severe risk category, indicating that numerous environmental issues and governance controversies remain inadequately managed. These high-risk scores reinforce the importance of selecting the energy sector as the sole focus of this study. Given the industry's substantial exposure to environmental risks, non-financial disclosures are a vital determinant of investor confidence in the capital market. The tendency for companies with poor ESG reputations to exhibit greater idiosyncratic risk volatility further highlights the need for high-quality audit oversight to mitigate information asymmetry in a sector particularly vulnerable to pollution and governance failures.

B) Hypothesis Testing Results

This study uses SPSS to conduct linear regression analysis to determine the extent to which profitability (ROA) and audit quality influence the ESG scores of energy sector companies listed on the Indonesia Stock Exchange (IDX). The interpretation of the SPSS results is presented below.

Table 1: Hasil Regresi Statistik

Regression Statistic	
Multiple R	0,49763741
R Square	0,24764299
Adjusted R Square	0,14016342
Standard Error	10,5001217
Observations	17

Sources: *SPSS 26*

Table 2: Tabel ANOVA

	df	SS	MS	F	Significance F
Regression	2	508,0644072	254,032204	2,30409358	0,13644819
Residual	14	1543,535769	110,252555		
Total	16	2051,600176			

Sources: *SPSS 26*

Table 3: Regression Analysis Results Showing Coefficients, Standard Errors, t-Statistics, and P-Values for Intercept, Skor KAP, and Skor ROA

	Coefficients	Standard Error	t Stat	P-value
Intercept	35,3856229	5,324858835	6,64536356	1,1044E-05
Skor KAP	-3,4409507	5,174517953	-0,66498	0,51686861
Skor ROA	89,4367549	43,82934549	2,04056789	0,06061988

Sources: *SPSS 26*

Table 4: Regression Analysis Results Showing the 95% Confidence Intervals (Lower and Upper Bounds) for the Intercept, Score KAP, and Score ROA Variables

	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	23,9649365	46,8063092	23,9649365	46,8063092
Score KAP	-14,539188	7,65728653	-14,539188	7,65728653
Score ROA	-4,5678419	183,4413516	-4,5678419	183,441352

Sources: *SPSS 26*

a. Interpretation of the Correlation and Determination Coefficients

The linear regression analysis examining the effects of profitability (ROA) and audit quality on ESG scores yielded a Multiple R value of 0.4976. This indicates a moderately strong correlation between the independent variables and corporate ESG reputation scores. In addition, with an R-squared of 0.2476, we have a general measure of how well our independent variables (Profitability and Audit Quality) are able to explain the variation in the ESG Score. After adjusting for the total number of independent variables used in the study and the total number of observations, the Adjusted R Square is 0.1401. Therefore, our model can account for about 14.01% of the total variation in the dependent variable.

b. The Effects of Profitability and Audit Quality on ESG Scores

The statistical results indicate that profitability (ROA) and audit quality affect ESG scores among the sampled companies. The standard error of 10.50 reflects the variability of the data around the estimated regression line. The finding that profitability (ROA) influences ESG scores is consistent with the theory that companies with stable financial performance have a greater capacity to manage industry risks and sustainability issues.

C) Discussion

These findings reinforce the argument in the literature that auditors evaluate not only financial statements but also their clients' reputation risks. In Indonesia's energy sector, Big Four auditors appear to place pressure on clients to improve governance standards and environmental compliance to avoid litigation risk and future audit failures. Furthermore, the engagement of Big Four public accounting firms, used as a proxy for audit quality, creates stronger assurance-related pressure, encouraging companies to improve their ESG disclosures and practices to maintain perceptions of management integrity among investors. Based on 17 observations, these results provide preliminary indications that financial factors and high-quality external oversight are important determinants of corporate ESG reputation in the capital market.

Profitability may also influence ESG reputation through a company's capacity to establish more effective sustainability management and reporting systems. Companies with sufficient financial resources have greater scope to develop emissions monitoring technologies, improve occupational safety, and strengthen environmental and social data collection. These investments can help companies identify and address sustainability risks more systematically. However, because the ESG score in this study measures unmanaged risk, improvements in sustainability performance should be reflected in lower ESG risk scores. Therefore, the interpretation of profitability's effect should be aligned with the direction of the estimated regression coefficient.

Another explanation concerns the characteristics of companies that engage Big Four auditors. The variation among the different types of firms (such as size, complexity of operations, institutional ownership and/or access to global financial markets) creates a need for enhanced transparency and environmental, social and governance (ESG) risk management. Therefore, it is possible that the relationship between audit quality and ESG scores is at least partially influenced by firm specific factors which have not been included in the empirical model. Because this study only consists of 17 cases, caution should be used when

interpreting the results as statistical relationships existing within the sample. Additional research could include the use of control variables to determine if the findings remain constant.

V. CONCLUSION

A) Implications and Recommendations

The integration of ESG management into company strategies and budgets should occur via measurable initiatives (e.g., reducing emissions, improving workplace safety, and strengthening governance) that will ultimately lead to improved profits. Improved profit margins can support funding for such initiatives as well as enhancements to record keeping systems and internal controls related to sustainability data. The ESG score used in this research represents the degree of unmanaged risk, therefore, successful ESG management should be evaluated by a reduction in risk scores rather than an increase. The results of this study could help the government and Financial Services Authority (OJK) develop better reporting standards for companies and ultimately provide external assurance for companies operating in industries where there is a significant risk to the environment. Any effort made to improve these areas must include a clear definition of the scope of assurance; an assessment of the qualifications and objectivity of those providing the assurance; and the identification of indicators which allow users to compare the performance of different companies. An organization's decision to hire one of the "big four" accounting firms to conduct an audit of their financial statements does not necessarily mean that they have obtained external assurance on their sustainability reports.

Profitability and the auditor of a company are two other factors that can help investors evaluate a company in addition to its ESG risk scores, past history of environmental/social issues, and progress toward meeting sustainability goals. In addition, investors need to check whether there is an assurance statement provided with a company's sustainability report, and what is covered by the statement, to determine how credible the reported data may be. To assist with further studies, it would be beneficial to expand the number of individuals involved in the study (the sample size) and increase the length of time that individuals are monitored (the observation period), in addition to including other possible control variables, including but not limited to, company size, leverage, energy sub-sector and ownership structure. Audit quality measurement could also be refined by distinguishing financial statement auditors from sustainability assurance providers. Given that this study includes only 17 observations, its conclusions should acknowledge limitations to generalization, while claims of significant effects must be supported by the statistical test results for each variable.

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