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Green Accounting Intervens Corporate Governance and Environmental Performance On Financial Performance

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ABSTRACT

This study aims to analyze the empirical evidence of green accounting as an intervening variable in the influence of corporate governance and environmental performance on financial performance in energy sector companies listed on the Indonesia Stock Exchange during the 2021–2023 period. The research adopts a quantitative and associative approach. The population comprises 83 energy sector companies listed on the Indonesia Stock Exchange between 2021 and 2023. A purposive sampling method was applied, resulting in 53 companies over three years, yielding 159 data points. Data analysis was conducted using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The results indicate that corporate governance and environmental performance have a direct, positive, and significant impact on green accounting. Furthermore, corporate governance, environmental performance, and green accounting positively and significantly influence financial performance. Green accounting acts as an intervening variable that strengthens the relationship between corporate governance, environmental performance, and financial performance. This study offers managerial implications, highlighting the importance of enhancing corporate governance, environmental performance, and the implementation of green accounting to improve financial performance and support sustainability. Future research is encouraged to expand the scope to other industrial sectors, incorporate external factors such as regulations and organizational culture, and adopt a longitudinal approach to examine the long-term impact of green accounting on corporate financial sustainability. These findings advocate for the development of standardized reporting policies and investment in environmentally friendly technologies to strengthen the connection between sustainability and financial performance.

Keywords: Corporate Governance; Environmental Performance; Green Accounting; Financial Performance.

INTRODUCTION

In the era of globalization and digitalization, economic growth and technology are currently developing well for the business world, which makes competition increasingly tight. The main goal for a company is to operate well and make a profit. This is because shareholders want to get maximum profit on their investment in the company concerned (Sutisna, 2020). In addition

to making a profit, the company has the goal of stakeholder welfare and increasing the value and financial performance of the company(Masliyani & Murtanto, 2022).The purpose and responsibility of companies have shifted from a focus on profit to companies that care about the environment and social issues. There has been a global shift towards more environmentally friendly work practices in recent years. Frequent environmental problems such as environmental degradation and waste have made stakeholders, namely the community, more sensitive to environmental problems caused by companies. This has led to demands from the community that companies be held accountable for these environmental problems.(Ifada et al., 2021). Company value is very important because it reflects the company's financial performance which can influence investor perceptions of the company.(Martini G et al., 2019).Financial performance in a company plays a very important role. Increasing the financial performance of a company can increase the company's profits from year to year. Financial performance can be measured using financial ratios (Fitra et al., 2021). Financial performance is a formal effort that has been carried out by a company that can measure the success of a company in generating profits, so that it can see the prospects, growth, and potential for good development of the company by relying on existing resources. Financial performance is described by profit as an indicator of measuring the success of the company in terms of finance. With the existence of these measurement indicators, the company can conduct reviews and evaluations, so that the company can see the prospects of its company in the next period and also as an effort to maintain the sustainability of the company (Saputra, 2020). A company can be said to be successful if it has achieved the standards and goals that have been set.(Sulistiyowati et al., 2022). According to Kurniawan *et., al.*(2023) Measurement of the company's financial performance is based on the company's annual financial report in accordance with applicable accounting principles and has been published. In this study, financial performance is measured using the Return On Asset (ROA) proxy, ROA is one of the indicators of financial performance, the greater the ROA value indicates the better the company's financial performance. ROA was chosen because it is considered a relevant indicator to measure the efficiency of asset use and the company's ability to generate profits. The following illustrates the average percentage graph of financial performance obtained from 40 energy sector companies during the study period listed on the Indonesia Stock Exchange in the 2021-2023 period.

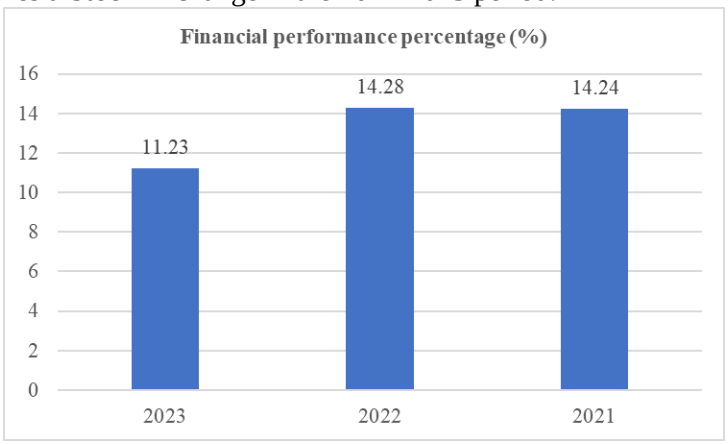


Figure 1. Percentage of Financial Performance in Energy Sector Companies Listed on the IDX 2021-2023

Source: Data processed by researchers, 2024

From Figure 1.1 above, it can be seen that the financial performance of energy sector companies in 2021-2023 has fluctuated. As shown above, in 2021, the financial performance of the energy sector decreased by 14.24%, in 2022 the financial performance increased to 14.28%,

but in 2023 the average financial performance decreased again to 11.23%. Energy observer Komaidi Notonegoro said that the simultaneous decline in financial performance of the three BUMNs in the mining and energy sectors occurred because commodity prices tended to be lower than in 2022. The companies are PT Timah Tbk (TINS), PT Aneka Tambang Tbk (ANTM) or Antam and PT Bukit Asam Tbk (PTBA). In 2023, PT Timah Tbk (TINS) net profit fell by 56.78%, PT Aneka Tambang Tbk (ANTM) net profit fell by 19.45%, PT Bukit Asam Tbk (PTBA) net profit fell by 50.7% source from (kontan.co.id). Overall, in the mining sector, there is a relative decline in 2023 if the price sector is not as big as in 2022. The company's success in improving its financial performance cannot be separated from the implementation of good corporate governance.

Corporate Governance is a system designed to direct the management of a company professionally based on the principles of transparency, accountability, responsibility, independence, fairness and equality (idx.co.id). Meanwhile, according to Sulistiyowati et al., (2022) corporate governance is a subject that has many aspects, one of the main topics in corporate governance concerns the issue of accountability and mandate responsibility, especially the implementation of guidelines and mechanisms to ensure good behavior and protect the interests of shareholders. Companies implement good governance to build shareholder trust and ensure that stakeholders are treated equally(Masliyani & Murtanto, 2022).

A good corporate governance system will provide effective protection for shareholders to recover their investment fairly, appropriately and efficiently and ensure that management acts to gain benefits for the company.(Sitanggang & Ratmono, 2019). The results of research by Sitanggang & Ratmono (2019) show that there is a positive influence of good corporate governance on financial performance. In line with research conducted by Nursaid et al., (2023) shows that corporate governance has a significant influence on financial performance.

Meanwhile, the results of research byAndriana & Panggabean (2023)that good corporate governance shows no significant influence on financial performance. The National Committee for Corporate Governance Policy (KNKCG) is of the opinion that companies in Indonesia have a responsibility to implement good governance standards as implemented internationally (Yesica et al., 2020). In addition to corporate governance, companies must also pay attention to the company's environmental performance.

Environmental performance is translated as performance relating to the environment, especially relating to environmental impacts.(Angelina & Nursasi, 2021). The parameters used to measure the company's environmental performance, one of which is ISO 14001 certification regarding the company's commitment to implementing an environmental management system. ISO 14001 certification not only shows the company's commitment to the environment, but also reflects the company's efforts to increase production efficiency, reduce waste, and minimize environmental risks.(Fahmi et al., 2021). This is in line with the goal of achieving long-term business sustainability.

In addition, to measure and assess the environmental performance of companies in Indonesia (nationally), a credible and competent institution has been set up at the Ministry of Environment. The ranking is called PROPER. The way PROPER works is with a ranking system with color as a marker. There are five ranks in PROPER, namely gold, green, blue, red and black. PROPER will assess how an organization or company is able to manage water pollution, air, waste management and the implementation of AMDAL (Environmental Impact Analysis).

The results of research conducted byAndriana & Panggabean (2023)shows that environmental performance has a significant influence on financial performance. Meanwhile, research conducted byDwi & Aqamal Haq (2023)contrary to research byAndriana & Panggabean (2023)that environmental performance has a negative and significant effect on

financial performance. Although not required by regulation, companies voluntarily report their environmental performance in annual reports as a form of social responsibility and commitment to the environment. In addition, companies are also protected from public demands for environmental pollution. The company's success in protecting the environment will improve its reputation and positive image in the eyes of the public (society). With good corporate governance and environmental performance management, it is expected to create good financial performance.

As an effort to preserve the environment, the company implements*green accounting*. The concept of green accounting emerged as a result of pressure from society who care about environmental preservation so that companies are urged to prioritize environmental management over profitability. By implementing green accounting, companies can consider and predict future preparations so that the sustainability of the company is guaranteed and environmental balance in the future can be planned. Green accounting can also attract investors to invest because investors consider companies to be responsible to the environment(Masliyani & Murtanto, 2022). Based on the results of research conducted byThe Untamed (2023)shows that the activities of energy and industrial companies have the potential for very high environmental pollution, that there is a significant influence seen from three indicators, namely water, land and air pollution.

This study aims to examine the effect of corporate governance and environmental performance on the financial performance of energy sector companies listed on the Indonesia Stock Exchange. Stakeholder theory argues that companies must be accountable to all their stakeholders, including the environment that good environmental performance can have a positive impact on the company's financial performance (Freeman, 1984). Regarding the population and sample of this study, it is different from previous studies, this study uses the object of energy sector companies listed on the Indonesia Stock Exchange in 2021-2023.

The reason researchers chose the energy sector in this study is because the energy sector is a business activity that takes and utilizes natural resources. As emphasized by the Director of Land Damage Control (KLHK), Edy Nugroho Santoso, mining activities which are an integral part of the energy and industrial sectors, have a high risk of environmental damage (detiknews, 2024). Therefore, it is important to examine the prevention efforts that have been and can be carried out by business actors to minimize these negative impacts.

Based on the description and identification of problems in the background, as well as from the results of previous studies that have been mentioned with the existence of a research gap, the researcher feels motivated to conduct research on green accounting intervening corporate governance and environmental performance on financial performance in energy sector companies listed on the Indonesian Stock Exchange in 2021-2023.

METHOD

This study uses an associative quantitative approach, aiming to analyze the causal relationship between corporate governance variables, environmental performance, green accounting as an intervening variable, and corporate financial performance. The quantitative approach was chosen because it provides clarity in measuring numerical data and in-depth statistical analysis to explain the relationship between research variables. This study focuses on energy sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021-2023 period, considering that this sector has a major contribution to economic development as well as being one of the largest contributors to environmental impact.

The study population consisted of 83 energy companies listed on the IDX during the study period. However, not all companies in this population were included as research samples. The purposive sampling technique was used to determine the sample based on certain criteria, such as the availability of complete data related to annual reports, environmental performance, and the implementation of green accounting during the 2021-2023 period. Based on these criteria, a sample of 53 companies was obtained with observation data for three years, resulting in a total of 159 data analyzed. The selection of samples using this technique ensures that the data used is relevant to the research variables, so that the results can describe the phenomenon being studied more accurately.

The data used in this study are secondary data obtained from the company's annual report available on the official website of the Indonesia Stock Exchange and other relevant documents. This data includes information related to corporate governance variables, environmental performance, implementation of green accounting, and financial performance. Corporate governance is measured based on elements such as the existence of an independent board of commissioners, an audit committee, and institutional ownership. Environmental performance is assessed using nationally and internationally recognized indicators, such as PROPER (Company Performance Rating Assessment Program in Environmental Management) and ISO 14001 certification. Green accounting is measured through environmental cost reporting, implementation of environmentally friendly technology, and waste management, while financial performance is represented by the Return on Assets (ROA) indicator as a proxy for the company's efficiency in managing assets to generate profits.

Data analysis in this study was conducted using the Partial Least Square-Structural Equation Modeling (PLS-SEM) method. This method was chosen because it is able to test direct and indirect causal relationships between research variables, including the role of green accounting as an intervening variable. The analysis was conducted in two main stages: testing the measurement model (outer model) and testing the structural model (inner model). Testing the measurement model aims to assess the construct validity and reliability of the variable measurement instrument. Validity is tested by measuring the loading factor value, Average Variance Extracted (AVE), and Composite Reliability (CR), while reliability is tested through the Cronbach's Alpha coefficient. Only indicators that meet the minimum value are retained in the analysis, ensuring that the measurement model used is valid and reliable.

After the measurement model meets the validity and reliability criteria, structural model testing is carried out to test the research hypothesis. The structural model is evaluated using path coefficients, R-squared (R^2), and Q-squared (Q^2) predictive relevance values. Path coefficients are used to determine the significance of the relationship between variables, while the R^2 value indicates how much the independent and intervening variables are able to explain the dependent variable. Q^2 predictive relevance is used to assess the overall predictive ability of the model. To determine the significance of the relationship between variables, the analysis was carried out with the help of SmartPLS software, which produces t-statistic and p-value values based on the bootstrapping process. The hypothesis is accepted if the t-statistic value is greater than 1.96 at a significance level of 5%.

The variables used in this study are divided into three types, namely independent variables, dependent variables, and intervening variables. Independent variables include corporate governance and environmental performance. Corporate governance reflects the effectiveness of an organization's management system based on the principles of transparency, accountability, responsibility, independence, and fairness. Environmental performance, on the other hand, shows the extent to which a company has succeeded in managing its environmental impact through various efforts such as waste reduction, efficient use of resources, and implementation of environmental standards. The dependent variable is financial performance, as measured by

Return on Assets (ROA) as the main indicator. ROA was chosen because it is considered an appropriate measure to assess the efficiency of asset use in generating profits. Green accounting, as an intervening variable, is a form of reporting that includes the costs and environmental impacts of company activities, which serves to bridge the influence of corporate governance and environmental performance on financial performance.

The research procedure begins with the collection of secondary data from the company's annual report. This data is then processed to obtain relevant variables according to the research needs. Once the data is ready, descriptive statistical analysis is carried out to provide an overview of the characteristics of the data, such as distribution, mean, and standard deviation. This step helps in identifying anomalies or errors in the data before further analysis. PLS-SEM analysis is carried out to test the relationship between variables, where the measurement model is evaluated first to ensure the validity and reliability of the data. After that, the structural model is tested to determine the direct and indirect effects between variables and to test the research hypothesis.

The results of the analysis provide insight into how corporate governance and environmental performance affect green accounting, as well as how these three variables collectively impact a company's financial performance. Green accounting is found to have a significant role as an intervening variable that strengthens the relationship between corporate governance and environmental performance with financial performance. Thus, the results of this study provide a significant contribution to the literature on the relationship between governance, environmental, and green accounting factors on financial performance, especially in the context of energy companies in Indonesia.

This study also identifies several practical implications. Companies in the energy sector are advised to improve their environmental governance and performance as part of their strategy to adopt green accounting. In addition, the results support the importance of policies that support standardized environmental reporting and the implementation of environmentally friendly technologies to support corporate sustainability. Overall, this research method is designed to provide comprehensive insights into how companies can achieve a balance between environmental sustainability and financial performance through the implementation of green accounting.

RESULT AND DISCUSSION

Result

Descriptive Statistical Data

This data is the result of processing smartPLS software version 4.0.9.9 which produces and provides some information from the processed data. Table 4.2 below contains some information including information on manifest variables or indicators used in this data or research. In this case there are four manifest variables or indicators used, including SEOJK, ISO 14001, Environmental Performance (EC), Return On Asset (ROA).

Second, it provides information on the number or amount of manifest variables or indicators used. Third, it provides information on indicators or missing values. Fourth, it provides information on the mean value of each manifest variable or indicator used. Fifth, it provides information on the median value. Sixth, it presents information on the lowest scale value (scale min) on each manifest variable processed. Seventh, it presents data on the highest scale (scale max) of each manifest variable data tested. Eighth, it presents data on standard deviation to

determine the distribution of data in a sample to see how far or how close the data value is to its average. Ninth, it presents data on excess kurtosis, which is a measure of whether the data is heavy-tailed or tailed relative to the normal distribution. Tenth, this table presents skewness, meaning the level of asymmetry or distance from symmetry of a distribution, in other words, it is interpreted as the slope of the data distribution.

Table 1
Descriptive Statistical Data (in decimals and percentages)

Indicators	Mean	Median	Scale min	Scale max	Standard deviation	Excess kurtosis	Skewness
SEOJK	21,019	1,000	0.48	1,000	36,599	-0.011	1.375
ISO 14001	0.899	1,000	0.000	1,000	0.301	5.251	-2,680
E.C.	19,304	587,000	-95.204	747,874	89,194	41,992	6.171
ROA	125.73	59,000	-246,000	2,086	257,161	39,045	5.555

Source: Data processed by SmartPLS 4.0.9.9

Based on table 1 above contains some information including information on manifest variables or indicators used in this data or research. In addition, the average value, highest value and lowest value of each variable are explained as follows:

1. Corporate governance

Corporate governance variables with SEOJK indicators show an average value of 21.019. Meanwhile, the highest value data is 1 in 31 companies including company codes ABMM, ADMR, ADRO, APEX, BOSS, BSML, BUMI, BYAN, DOID, ELSA, ENRG, GEMS, HITS, HRUM, INDY, ITMA, ITMG, KKGI, KOPI, MAHA, MCOL, MEDC, PGAS, PTBA, RAJA, RMKE, RUIS, SMMT, SUNI, TCPI, TEBE in 2021-2023. While the lowest data is 0.48 in PT. SMR Utama Tbk. (SMRU) in 2021-2023.

2. Environmental Performance

The environmental performance variable with the environmental management system certification indicator (ISO 14001) shows an average value of 0.899. While the highest value is 1, namely the average company has ISO 14001 certification (Environmental Management System). While the lowest value of 0 is found in 9 (nine) companies, including PT. Apexindo Pratama Duta Tbk. (APEX) in 2022-2023, PT Borneo Olah Sarana Sukses Tbk. (BOSS) and PT. SMR Utama Tbk. (SMRU) in 2021-2023, PT Darma Henwa Tbk. (DEWA) in 2021-2022, PT Garda Tujuh Buana Tbk. (GTBO), PT. GTS Internasional Tbk. (GTSI), PT. Humpuss Intermoda Transportasi Tbk. (HITS), PT. Rig Tenders Indonesia Tbk. (RIGS), PT. Royaltama Mulia Kontraktorindo Tbk. (RMKO) each in 2021 did not have ISO 14001 certification.

3. Green Accounting

The green accounting variable with the Environmental Cost (EC) indicator has an average value of 19.304 percent. Meanwhile, the highest value was obtained at 747.874 percent at PT. Bintang Samudera Mandiri Lines Tbk. (BSML) in 2023. The lowest value data was -95.204 percent at PT. Borneo Olah Sarana Sukses Tbk. (BOSS) in 2021.

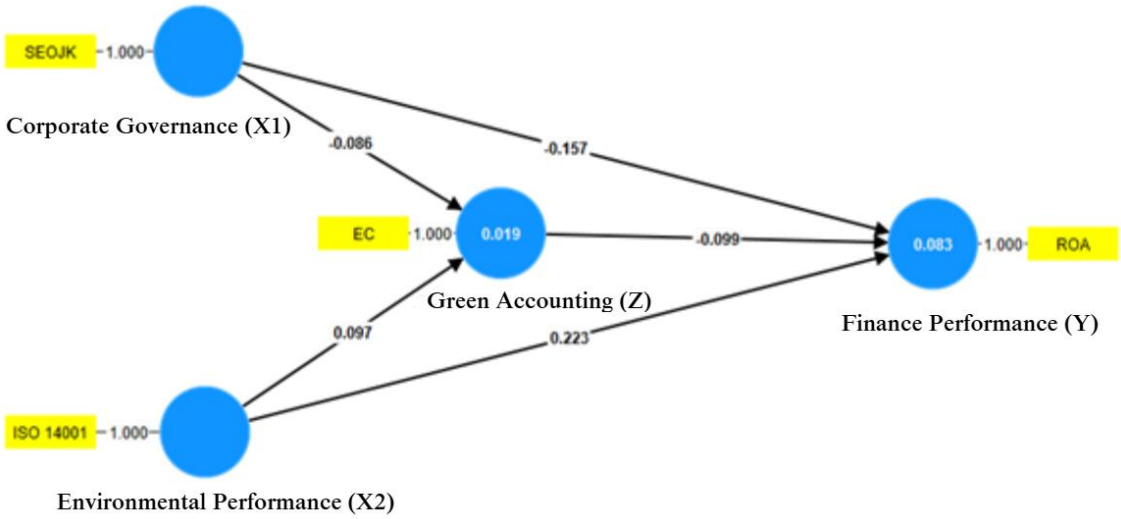
4. Financial performance

The financial performance variable with the Return On Asset (ROA) indicator shows an average value of 0.149 percent. Meanwhile, the highest value of 2.086 percent is the highest value owned by PT. Apexindo Pratama Duta Tbk. (APEX) in 2021. The lowest value is -0.246 percent at PT. Apexindo Pratama Duta Tbk. (APEX) in 2022.

Outer Model

The Outer Model Test or outer test includes several tests to see the validity and reliability of the data and models used, including: convergent validity, discriminant validity, and composite reliability. The smartPLS statistical analysis model above presents the analysis of the model created to be tested through the PLS-SEM Algorithm on smartPLS. The results of the tested model produce the value of each manifest variable or indicator which indicates whether the manifest variable is valid or invalid to be used as a latent or exogenous, endogenous and intervening measuring variable.

That the corporate governance variable has a manifest variable or SEOJK indicator with the measurements carried out, namely, the company has or has not implemented 25 recommendations for the implementation and principles of good corporate governance. The environmental performance variable as the second exogenous variable has an ISO 14001 manifest variable. The endogenous variable in this study is financial performance which has a manifest variable return on assets (ROA). And the intervening variable in this study is green accounting which has a manifest variable environmental cost (EC).



Source: Data processed by SmartPLS 4.0.9.9

Figure 2 Statistical Test Result Model via PLS-SEM Algorithm

The test results on the analysis model in Figure 2 above show the value*outer loading*or factor loading of each manifest variable or indicator. The figure presents valid and invalid values. For invalid manifest variables because they are below 0.7, the manifest variable must be removed from the model.

Convergent Validity

Convergent validity presents some information, including outer loading or loading factor test information. The loading factor value is to see the validity of the manifest variables used.

Table 2
Outer Loading Data for Manifest Variables

	Corporate Governance (X1)	Environmental Performance (X2)	*Green Accounting* (Z)	Financial Performance (Y)	Evaluation
SEOJK	1,000				Valid
ISO 14001		1,000			Valid
E.C.			1,000		Valid
ROA				1,000	Valid

Source: Data processed by SmartPLS 4.0.9.9

Table 2 outer loading data of the manifest variable above shows that the corporate governance variable which has the SEOJK manifest variable, shows an outer loading value of 1,000>0.7, meaning that the manifest variable or indicator is valid and able to represent the latent variable. The environmental performance variable with the manifest variable produces a test data that has an outer loading value of 1,000>0.7, meaning that the manifest variable is valid and suitable for use as a measure of environmental performance.

Green accounting variable as an intervening variable with the manifest environmental cost variable. The test results show an outer loading value of 1,000>0.7, meaning that the manifest variable or indicator is valid and feasible to be used as a measure of the green accounting variable. The financial performance variable with the manifest ROA variable as the measurer, produces a test data outer loading value of 1,000>0.7, meaning that the manifest variable is valid and feasible to be used as a measure of the financial performance variable.

Inner Model

Inner model test is used to conduct hypothesis testing on smartPLS 4.0.9.9, including three tests including: R-Square (R^2), predictive relevance (Q^2), F-square (F^2), path coefficients.

1. R-Square Test (R^2)

The structural model is evaluated using R^2 for the construct of intervening variables (Z) and endogenous (Y). The interpretation is the same as the interpretation in regression. Changes in R^2 can be used to assess the influence of exogenous variables on intervening variables and exogenous variables on endogenous variables, whether they have a substantive influence (Jogiyanto, 2016).

Table 3
R-Square (R2) Value Data

Variable	R-square	Adjusted R-square
Green Accounting (Z)	0.019	0.006
Financial Performance (Y)	0.083	0.065

Source: Data processed by SmartPLS 4.0.9.9

Based on table 3 above, it can be seen that this study uses two variables that are influenced by exogenous variables, namely the variables green accounting which is influenced by corporate governance and environmental performance. Then the financial performance variable is influenced by corporate governance, environmental performance and green accounting. Table 4 shows that the value*Adjusted*R-square for the green accounting variable is 0.006, which means the model is able to explain 0.6% for the variables that affect green accounting. For the financial performance variable, it is 0.065, which means the model is able to explain 6.5% for the variables that affect financial performance. Thus, based on the criteria, both show a value of <0.19, it can be said that the model is weak.

2. Q-Square (Q^2)

This test looks at the final predictive relevance value for the constructive model. Q-square measures how well the observed values produced by the model and also its parameter estimates in the Q^2 column.

Table 4 Q-square Value Data Predictive relevance

	Q^2 prediction
E.C.	0.013
ROA	0.066

Source: Data processed by SmartPLS 4.0.9.9

Based on table 4, it presents the Q2 predictive relevance value, if the Q-square is above 0, it indicates that the model has predictive relevance, while the Q2 value <0 indicates that the model has less predictive relevance. Table 4.9 shows that the observation value or predictive relevance value of green accounting (EC) is 0.013> 0 and the predictive relevance of financial performance (ROA) is 0.066> 0. Thus, both indicate that the model has moderate predictive relevance, because it is greater than 0.02. This means that exogenous variables are able to predict endogenous variables.

3. F-square (F^2) test

This test looks at and finds out how strong the relationship is between exogenous variables and endogenous variables.

Table 5 F-square Value Data

Variable	**Green Accounting (Z)**	**Financial Performance (Y)**	**Environmental Performance (X2)**	**Corporate Governance (X1)**
Financial Performance (Y)				
Green Accounting (Z)		0.011		
Environmental Performance (X2)	0.010	0.053		
Corporate Governance (X1)	0.008	0.027		

Source: Data processed by SmartPLS 4.0.9.9

Based on table 5, the data presents the value of the strength of the relationship. By looking at the value above, the value obtained is *green accounting* to financial performance of 0.011, meaning 0.011 < 0.02, thus having a small relationship effect. Environmental performance to green accounting has a relationship strength value of 0.010, meaning 0.010 < 0.02, thus having a small relationship effect. Corporate governance to green accounting has a relationship value of 0.008, meaning 0.008 < 0.02, has a small relationship effect. While environmental performance to financial performance has a relationship value of 0.053 and corporate governance to financial performance shows a relationship value of 0.027. This means that the variables of environmental performance to financial performance and corporate governance to financial performance are each greater than 0.02. Thus, it has a moderate relationship effect.

4. Hypothesis Testing

This test is to test the hypothesis in the study. This hypothesis testing is done with path coefficients of direct influence or partial path. Seeing the level of significance or not with the criteria if the t-statistic <1.96, it means it is not significant and if the t-statistic> 1.96, it means it is significant, or if the P-Values <0.05 then Ho is rejected and Ha is accepted. The following are the results of the path coefficients.

Table 6
Path Coefficients Value Data

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
CG (X1) -> GA (Z)	-0.086	-0.086	0.027	3.231	0.001
KL (X2) -> GA (Z)	0.097	0.103	0.033	2.935	0.002
CG (X1) -> KK (Y)	-0.157	-0.167	0.043	3,650	0.000
KL (X2) -> KK (Y)	0.223	0.243	0.066	3.356	0.000
GA (Z) -> KK (Y)	-0.099	-0.110	0.026	3,892	0.000

Source: Data processed by SmartPLS 4.0.9.9

Based on Table 6, the following direct relationships between variables are evident: First, the influence of corporate governance (CG) on green accounting (GA) shows a significant result with a t-statistic of 3.231 and a P-value of 0.001. This indicates that the relationship is statistically significant, as the t-statistic is greater than 1.96 and the P-value is less than 0.05, thus supporting the acceptance of the alternative hypothesis (Ha). Second, the effect of environmental performance (KL) on green accounting (GA) also shows a significant result, with a t-statistic of 2.935 and a P-value of 0.002, confirming the significant influence between the two variables. Third, corporate governance (CG) has a significant effect on financial performance (KK), with a t-statistic of 3.650 and a P-value of 0.000, which again supports the acceptance of the alternative hypothesis (Ha). Fourth, the relationship between environmental performance (KL) and financial performance (KK) is also significant, with a t-statistic of 3.356 and a P-value of 0.000, further supporting the significance of the relationship. Lastly, the effect of green accounting (GA) on financial performance (KK) is significant, with a t-statistic of 3.892 and a P-value of 0.000, confirming that this relationship is also statistically significant, thus validating the acceptance of the alternative hypothesis (Ha) for all the variables tested.

Table 7

ANOVA (F Test)

	Sum of squares	df	Mean of square	F	P value
Total	10514941.371	158	0.000	0.000	0.000
Error	9742249.455	156	62450.317	0.000	0.000
Regression	772691.916	2	386345.958	6.186	0.000

Source: Data processed by SmartPLS 4.0.9.9

Based on table 7, it can be explained the relationship simultaneously between corporate governance variables and environmental performance on financial performance. The results of simultaneous testing show the calculated F value of 6.186 and the P-value of 0.000. The P-value is smaller than 0.05, then it can be said that the independent variables of corporate governance and environmental performance simultaneously affect the dependent variable of financial performance.

Table 8
Indirect Effect Value Data

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
CG (X1) -> GA (Z) -> KK (Y)	0.009	0.010	0.004	1.983	0.024
KL (X2) -> GA (Z) -> KK (Y)	-0.010	-0.012	0.005	1,858	0.032

Source: Data processed by SmartPLS 4.0.9.9

Based on Table 8, the following indirect relationships between variables are observed: First, the effect of corporate governance (CG) on financial performance (KK) through green accounting (GA) shows significant results, with a t-statistic of 1.983 and a P-value of 0.024. Since the t-statistic is greater than 1.96 and the P-value is less than 0.05, this indicates a significant effect, and thus the alternative hypothesis (Ha) is accepted. Second, the effect of environmental performance (KL) on financial performance (KK) through green accounting (GA) shows a t-statistic of 1.858 and a P-value of 0.032. While the t-statistic is slightly below 1.96, the P-value remains below 0.05, which suggests that the relationship between environmental performance through green accounting on financial performance still holds significance, thus leading to the acceptance of the alternative hypothesis (Ha).

Discussion

This study shows that corporate governance (CG) significantly affects green accounting (GA), with a t-statistic of 3.231 and a P-value of 0.001. This indicates that the implementation of good corporate governance plays a crucial role in the adoption of green accounting. These findings align with previous research by Wahyudin & Solikhah (2017), who found that companies with strong governance are more likely to implement sustainable practices, including green accounting. Corporate governance serves as a policy guide for companies, which can enhance transparency and accountability in managing natural resources and environmental impacts (Miotto et al., 2021). The Legitimacy Theory supports this finding, as it posits that companies seek legitimacy from society through the disclosure of information regarding their environmental performance (Barco & Briozzo, 2020).

The study also demonstrates that environmental performance (KL) significantly influences green accounting (GA), with a t-statistic of 2.935 and a P-value of 0.002. This result is supported by the research of Ahn et al. (2020), who found that companies with strong environmental performance are more likely to adopt green accounting as part of their commitment to sustainability. This is also supported by the Triple Bottom Line Theory Qi & Yang (2023), which emphasizes the importance of companies considering three aspects—social, environmental, and economic—in every decision and financial report they make.

Corporate governance (CG) has also been shown to significantly affect financial performance (KK), with a t-statistic of 3.650 and a P-value of 0.000. This finding is consistent with research by Do et al. (2021), which found that companies with good governance structures tend to have better financial performance. Good governance ensures efficient decision-making and high accountability, which in turn improves a company's financial performance. The Stewardship Theory Flórez-Parra et al. (2014) supports this outcome, stating that managers who act as stewards focus on the long-term goals of the company, positively impacting financial performance.

This study also finds that environmental performance (KL) significantly influences financial performance (KK), with a t-statistic of 3.356 and a P-value of 0.000. This result supports research by Schäfer et al. (2022), which found that good environmental performance can enhance a company's financial performance through improved reputation and reduced operational costs related to environmental preservation. The Stakeholder Theory (Jensen, 2002) provides a relevant theoretical framework, explaining that companies that consider the interests of stakeholders, including the environment, will gain long-term benefits in the form of better financial performance.

Finally, this study shows that green accounting (GA) significantly influences financial performance (KK), with a t-statistic of 3.892 and a P-value of 0.000. These findings are consistent with research by Angelina & Nursasi (2021), which indicates that implementing green accounting can help companies manage natural resources more efficiently, thereby improving financial performance. This is also supported by the Resource-Based View Theory (Barney, 1991), which posits that companies that can efficiently utilize natural resources gain a competitive advantage, positively impacting financial performance.

In addition to the direct effects, this study also analyzes the indirect effects between corporate governance, environmental performance, and financial performance through green accounting. The results show that corporate governance significantly affects financial performance through green accounting, with a t-statistic of 1.983 and a P-value of 0.024. This strengthens previous research findings that corporate governance's influence on financial performance can be mediated by sustainability practices such as green accounting (Hanif et al., 2023). However, the effect of environmental performance on financial performance through green accounting shows slightly weaker results, with a t-statistic of 1.858 and a P-value of 0.032, though still significant.

CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that corporate governance has a significant influence on green accounting. This shows that the implementation of good governance supports the implementation of green accounting more effectively, which in turn strengthens the company's sustainability management. In addition, environmental performance was also found to have a significant influence on green accounting. Companies with good environmental performance tend to adopt green accounting practices as part of their sustainability strategy. Furthermore, corporate governance also has a significant

effect on financial performance, indicating that transparent and accountable management can increase stakeholder trust and ultimately improve the company's financial results. Likewise, environmental performance has a significant positive impact on financial performance, indicating that attention to environmental issues can support the company's economic growth. Green accounting itself was found to have a significant influence on financial performance, indicating that the implementation of green accounting can be an important factor in improving the efficiency and transparency of the company's finances. As an intervening variable, green accounting strengthens the relationship between corporate governance and financial performance, indicating its role as an effective link in improving financial results. However, the effect of green accounting in linking environmental performance to financial performance is not statistically significant, although it still has important potential in building a company's sustainability strategy.

This study has several limitations that need to be considered. First, the research data only comes from energy sector companies during the period 2021-2023, so the results have limitations in terms of generalization to other industrial sectors. In addition, the measurement of environmental performance and green accounting variables is only based on secondary data, which may not reflect the overall operational conditions of the company. This study also has not considered external factors, such as organizational culture, government regulations, or market conditions, which can affect the relationship between variables. The analysis of indirect relationships through green accounting shows less significant results for environmental performance, which is most likely influenced by the measurement method or number of samples used in this study.

This study has several managerial implications that can be applied by companies. First, companies are advised to strengthen their environmental governance and performance through investment in environmentally friendly technologies and policies that support sustainability. These efforts can support more effective implementation of green accounting and contribute to improved financial performance. In addition, company management needs to improve transparency in environmental management and financial reporting, including by implementing green accounting. This step can attract support from stakeholders, strengthen the company's reputation, and increase public trust. The integration of green accounting into the company's strategy should include standardized reporting policies, environmental cost monitoring, and periodic environmental impact evaluations to strengthen the relationship between environmental performance and financial performance.

For further research, several development directions are suggested. First, research can expand the scope of industrial sectors, such as manufacturing and agribusiness sectors, to increase the generalizability of research results. The use of data from various sectors will provide a more comprehensive picture of the relationship between research variables. In addition, future research can integrate other factors, such as organizational culture, market conditions, or government regulations, through interviews or surveys of company management. This approach will help understand the external factors that influence the relationship between corporate governance, environmental performance, green accounting, and financial performance. In addition, the use of more specific environmental performance measurement methods, such as the PROPER assessment or direct evaluation of the company's operational impact, can increase the accuracy of research results. Research is also advised to use a longitudinal approach to understand changes in the relationship between variables over time. This approach is expected to provide in-depth insight into the long-term impact of green accounting implementation on the company's financial sustainability.

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