FINANCE | RESEARCH ARTICLE

The Effect of Green Accounting Implementation, Environmental Performance, and Sustainability Growth on Financial Reporting Quality with Profitability as A Moderating Variable

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Abstract: The non-climatic sector is a sector that is directly related to nature, so the activities carried out will have an impact on the sustainability of the surrounding environment. If natural and environmental factors are appropriately considered, it will impact the quality of financial reporting. This study aims to test and analyze the Effect of green accounting, environmental performance, and sustainability growth on financial reporting quality with Profitability as the control variable in companies listed on the Indonesia Stock Exchange for 2021 - 2023. From the research conducted, it was found that green accounting does not affect the quality of financial reporting, environmental performance affects the quality of financial reporting, sustainability growth has no effect on the quality of financial reporting, and Profitability affects the quality of financial reporting.

Keywords: Green Accounting, Environmental Performance; Sustainability Growth, Profitability and Financial Reporting Quality.

JEL Classification Code: M41, Q56, L25

1. INTRODUCTION

At present, global warming is always a hot issue and an essential topic in every discussion and meeting between countries. This is because it will significantly impact the survival of living things in the future. Many countries are trying to prevent and reduce global warming by issuing policies on the business activities of each company. One factor that triggers global warming is the business activities carried out by companies (Maharani & Handayani, 2020). Increasingly fierce industrial competition makes industry players try to improve their performance to maintain survival and achieve company goals, namely obtaining maximum profit (Murniati & Sovita, 2021) and sometimes ignore the environmental impacts caused by these business activities (Rosaline & Wuryani, 2020). Green Accounting began to be heard due to pressure from non-governmental organizations and increasing public awareness of environmental conservation. Green Accounting aims to make companies focus on business operations and maintain and manage the preservation of nature and the environment due to impact arising from the company’s business activities directly or indirectly. Environmental issues are important matters that companies must consider in line with their sustainability goals. Corporate sustainability is also closely related to good corporate governance to achieve the company’s goal of sustainable Profitability. Sustainable growth is the main priority of every company; therefore, the company will try to improve its image or name. Efforts to improve the company’s image and name are not only through business activities but also activities outside the business that positively impact the surrounding environment or social responsibility.

Riadi (2022) emphasizes that companies that have implemented green accounting in business activities impact the possibility of company growth; this will also be the main priority of the company’s strategy to increase profits by keeping the company experiencing sustainable growth. Continuous growth will improve environmental performance, showing the company’s concern for preserving...
nature and the environment. In 2018, the World Research Institute stated that Indonesia contributes to air pollution from greenhouse gas emissions from industrial activities in the transportation, energy, manufacturing, and other sectors. Green accounting is a significant way to overcome environmental pollution from industrial activities. Industrial companies that apply the concept of green accounting are required to incur ecological management costs. This environmental management obligation aligns with the Indonesian Ministry of Environment and Forestry program, namely the Control, Evaluation, and Performance Assessment Program (PROPER). This PROPER program requires companies to comply with regulations with disincentives and incentives for safe and environmentally friendly products, hoping each company can fulfill its social responsibilities.

This study focuses on primary and chemical industry companies aiming to examine the Effect of green accounting, environmental performance, and sustainability growth with Profitability as moderation on the quality of financial reporting in elemental and chemical industry companies listed on the Indonesia Stock Exchange (IDX). Non-cyclical sector companies will produce waste in their business activities, impacting the environment and nature.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Stakeholder Theory

Stakeholder theory posits that in its implementation, company activities seek profit and have obligations to stakeholders. Stakeholders encompass all groups that influence the company, such as shareholders, creditors, suppliers, consumers, and other parties (Ghozali, 2020). Stakeholders significantly impact the company’s survival because they have authority or control over company resources (Handoko, 2021). Stakeholders can control company resources or economic resources such as capital or labor, media access, and the use of products or services produced by the company. The power of stakeholders ultimately makes companies view stakeholders as significant parties, leading companies to engage in activities that can maintain good relations with stakeholders (Ghozali, 2020).

2.2. Legitimacy Theory

Legitimacy theory, developed by Pfeffer and Dowling in 1975, is the foundation for a good relationship between companies and society. A reciprocal relationship occurs when companies use surrounding resources while preserving the environment and positively impacting the surrounding community. Creating a good relationship between the company and the community enhances its image and public trust in its products. In this study, legitimacy theory can be intended as a bridge of information indicating that the company has tried to preserve the environment and positively impact the surrounding community. The company’s existence is accepted and needed by the surrounding community to achieve the goal of sustainable growth.

2.3. Signaling Theory

According to Spence (1973), signaling theory is a theory where the owner of the information (sender) provides a signal in the form of information that reflects the condition of a company beneficial to the recipient (investor). The signal explains management’s efforts to realize the owner’s wishes and is an essential indicator for investors and business people when making investment decisions. Signaling theory describes how a company should signal to users of financial statements. Company managers will provide information through financial statements that they apply conservatism accounting policies, resulting in higher quality earnings.

2.4. Green Accounting

According to Zulhaimi (2015 in Bella Syafirina Qolbiatn Faizah, 2020), Green Accounting is an accounting application that includes costs for environmental conservation. The influence of Green Accounting is the first step in solving environmental problems. Applying green accounting will
encourage the company to minimize its ecological issues. Gustinya (2022) defines Green Accounting as a technique for recognizing, measuring value, recording, summarizing, reporting, and disclosing information on objects, transactions, event values, and the impact of the corporation’s economic, social, and environmental activities on society and the environment, as well as the corporation itself in one accounting information reporting package so that it can be helpful for users in economic and non-economic assessments and decision making. According to Lako (2018), green accounting contributes to overcoming environmental problems within a company.

Green accounting is measured using dummy variables (Rosaline & Wuryani, 2020), namely:

a. A value of 0 is used for companies that do not have an ISO 14000/14001/14064 certificate.
b. A value of 1 is used for companies with an ISO 14000/14001/14064 certificate.

2.5. Environmental Performance

Lako (2018) reveals that environmental performance is the company’s performance in creating a better environment to reduce ecological damage. Environmental performance receives considerable public attention because environmental issues are increasingly becoming a topic of global conversation (Putri et al., 2019). Environmental performance reflects a company’s effort to preserve the environment and address problems arising from its operations. A company can be said to have good environmental performance if the ecological issues arising from its activities are low, and vice versa (Sheryn & Hendrawati, 2020). The Indonesian Government assesses the company’s environmental performance through PROPER (Angelina & Nursasi, 2021).

PROPER is a policy formed by the Government to enhance corporate environmental management. PROPER is interconnected with other government instruments, facilitating the Government’s efforts to improve environmental quality smoothly and effectively. The Ministry of Environment and Forestry (2019) outlines several objectives of PROPER, namely:

a. Increase company compliance in environmental management
b. Enhance stakeholder commitment to environmental conservation efforts
c. Promote sustainable ecological management
d. Raise company awareness of compliance with environmental regulations
e. Improve the application of the 4R principle

Through PROPER, the company’s level of environmental protection is measured by colors, ranging from the best (gold), green, blue, and red to the worst (black), which are periodically reported to the public so that the public can understand the level of environmental management in the company by simply looking at the colors. The complete and correct evaluation criteria can be found in the Regulation of the Minister of Environment No. 5 of 2011 concerning the company’s environmental management evaluation program. In general, PROPER performance ratings are divided into five colors with the following definitions:

a. Gold; Excellent; Score 5
   For businesses and activities that consistently demonstrate environmental excellence in production processes and services, ethical business practices, and community responsibility.
b. Green; Good; Score 4
   For businesses and activities that have conducted environmental management beyond regulatory requirements through implementing an environmental management system, efficient resource utilization through 4R efforts (Reduce, Reuse, Recycle, and Recovery), and carrying out social responsibility efforts (CSR/Comdev) effectively.
c. Blue; Fair; Score 3
   Businesses and activities that have performed required environmental management efforts according to applicable provisions and laws.
d. Red; Bad; Score 2
   Environmental management efforts do not comply with the requirements stipulated in laws
   and regulations and are in the stage of implementing administrative sanctions.

e. Black; Very Bad; Score 1
   This is for businesses or activities that deliberately commit acts or negligence resulting in
   environmental pollution, damage, and violations of applicable laws and regulations or fail to
   implement administrative sanctions. Additionally, in this study, companies not registered in the
   KLHK PROPER program receive a score of 0.

2.6. Sustainability Growth

Sustainability is the ability to grow without depleting natural resources for future generations.
Sustainable growth means a continuous increase in revenue and profit and a positive impact on
stakeholders and the surrounding environment, including nature. When a company is established, a
revenue and income structure is created. When these two factors are balanced, the company can make
a profit. Financial sustainability is the ability of an organization to manage its resources responsibly and
generate long-term profits. Sustainability has many benefits, both short-term and long-term. It is critical
to building a promising future. It is essential to know that companies in Indonesia or other business
arenas include sustainability in their business models. Social responsibility states that a company’s
responsibility includes financial, social, and environmental aspects. A company will be recognized as
operating for profit and environmental and social responsibility if it has social and environmental
responsibilities (Wati et al., 2019). Companies will benefit from implementing social responsibility,
such as gaining a good image from the community, supporting the company’s sustainability, facilitating
the capital acquisition, maintaining quality human resources, improving decision-making on critical
issues, and easing risk management (Lestari & Lelyta, 2019).

2.7. Profitability

Profitability is a measure that provides an overview of a company’s overall business activities,
described by efficiency in managing its assets, liabilities, and equity (Hamidi, 2019). Profitability in a
business is shown through factors affecting its profitability, leading management in a company to issue
policies to create and increase profit growth. The indicator used for profitability is ROA (Return on
Assets).

2.8. Quality of Financial Reporting

The quality of financial reporting is the suitability of the financial information produced by the
accounting system. It is more comprehensive than financial statements in meeting the needs of
interested parties, especially external companies, in making economic decisions. To aid in economic
decision-making, the accounting information presented in financial statements must meet specific
requirements (Arum, 2019). Financial reporting provides valuable accounting information to capital
markets for business decision-making (Perotti & Wagenhofer, 2014). High-quality financial reporting
is essential to influence users’ investment decisions and improve market efficiency (Herath & Albarqi,
2017).

Financial reports must contain high-quality information so potential investors and users can utilize
them optimally. Two significant groups of assessment attributes, accounting-based and market-based
attributes, are used to assess the quality of financial statements (Francis et al., 2004). The accounting-
based quality attributes of financial statements are accrual quality, persistence, predictability, and
earnings smoothing. The market-based quality attributes are value relevance, timeliness, and
conservatism.

Persistence: The persistence of the company’s financial statements describes how earnings conditions
can continue continuously (earnings sustainability). Good persistence shows that the
profit in the current period reflects the past period, eventually repeating.
Predictability: A financial statement’s predictability is the ability of current earnings to predict the company’s condition in future periods based on the value of cash flow from operating activities.

Conservatism: Conservatism can be defined as an accountant’s tendency to require a higher level of verification to recognize earnings (good news) than losses (bad news).

In this study, the quality of financial statements is measured based on one of the three attributes proposed by Francis et al. (2004), namely persistence. Earnings persistence is a method based on earnings quality used to evaluate the quality of financial reporting.

3. RESEARCH METHOD AND MATERIALS

The autocorrelation test is intended to determine whether there is a correlation between confounding errors in period t (analysis period) and errors in period t-1 (previous period) in a linear model. The test is done by looking at the Durbin-Watson number. The hypothesis test includes several methods. First, multiple linear regression analysis is used to identify independent variables that significantly influence the dependent variable, with results presented as coefficients. The equation used in this study is:

$$KPK = \alpha + \beta_1 GA - \beta_2 KL - \beta_3 SG - \beta_4 (GAROA) + \beta_5 (KLROA) + \beta_6 (SG*ROA) + \epsilon$$

Where KPK represents financial reporting quality, GA is green accounting, KL is environmental performance, SG is sustainability growth, ROA is profitability, and the interaction terms represent the moderation effect of profitability. Second, the F test assesses the overall relationship between all independent variables in the research model, using significance values to determine model fit. Third, the t-test evaluates the significance of each independent variable’s effect on the dependent variable individually, with a significance level of $\alpha = 0.05$. Finally, the coefficient of determination ($R^2$) measures how well the independent variables explain the dependent variable, with values ranging from 0 to 1, where a higher $R^2$ indicates a stronger explanatory power.

4. RESULTS AND DISCUSSION

4.1. Sample Determination

This study measures Green Accounting, Environmental Performance, and Sustainability Growth on financial reporting quality with Profitability as moderation covering 2021, 2022, and 2023. The population uses companies from the cyclical sector, which can provide more relevant data for measuring the quality of financial reporting. The sample was determined through purpose sampling, which obtained 126 companies from the Non-Cyclical sector available. Only 31 representative companies were obtained, with a total sample of 81 after going through an outlier process of 12 samples.

4.2. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Accounting</td>
<td>0.407</td>
<td>0.493</td>
</tr>
<tr>
<td>Environmental Performance</td>
<td>3.086</td>
<td>0.424</td>
</tr>
<tr>
<td>Sustainability Growth</td>
<td>0.072</td>
<td>0.0095</td>
</tr>
<tr>
<td>Profitability (ROA)</td>
<td>0.087</td>
<td>0.065</td>
</tr>
</tbody>
</table>

Green Accounting is measured using a dummy: the presence or absence of ISO 14000/14001/14064 awards in the company’s annual report. It is a value of “1” for companies with ISO 14000/14001/14064 and “0” for companies that do not have ISO 14000/14001. The standard
deviation value is greater than the average value, namely 0.493 > 0.407. This shows that green accounting data has diverse variations.

Environmental Performance is measured by PROPER issued by the Ministry of Environment (KLH) by showing the lowest value of 2 (red) and the highest value of 5 (gold). The standard deviation value is smaller than the average value, namely 0.424 < 3.086. This shows that environmental performance data has less variation between companies.

SGR measures Sustainability Growth (Ross et al. I, 2012, pp 104-106); the test result is that the standard deviation value is greater than the average value, namely 0.0095 > 0.072. This shows that the Sustainability Growth data has a relatively good value with diverse variations.

Profitability is measured by return on assets (ROA), with the results of the standard deviation value showing smaller than the average value, namely 0.065 < 0.087. This shows less variation between one company and another.

4.3. Model selection test

a. Hausman Test
The results of the Hausman test resulted in a Prob value of 0.0096 < 0.05 so that the selected model was FEM.

Table 2. Model Selection Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Prob Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hausman Test</td>
<td>0.0096</td>
</tr>
<tr>
<td>Lagrange Multiplier</td>
<td>0.2736</td>
</tr>
</tbody>
</table>

b. Lagrange Multiplier Test
The Lagrange Multiplier test results produce a Prob value of 0.2736 > 0.05, so the selected model is CEM.

Table 3. Lagrange Multiplier Test

<table>
<thead>
<tr>
<th>Test Hypothesis</th>
<th>Cross-section</th>
<th>Time</th>
<th>Accumulate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Pagan</td>
<td>1.198646 (0.2736)</td>
<td>2.665239 (0.1026)</td>
<td>3.863885 (0.0493)</td>
</tr>
<tr>
<td>Honda</td>
<td>1.094827 (0.1368)</td>
<td>1.632556 (0.0513)</td>
<td>1.928551 (0.0269)</td>
</tr>
<tr>
<td>King-Wu</td>
<td>1.094827 (0.1368)</td>
<td>1.632556 (0.0513)</td>
<td>1.854422 (0.0318)</td>
</tr>
<tr>
<td>Standardized Honda</td>
<td>1.742303 (0.0407)</td>
<td>2.277423 (0.0114)</td>
<td>-1.930706 (0.9732)</td>
</tr>
<tr>
<td>Standardized King-Wu</td>
<td>1.742303 (0.0407)</td>
<td>2.277423 (0.0114)</td>
<td>-0.077473 (0.5309)</td>
</tr>
<tr>
<td>Gourieroux, et al.</td>
<td>--</td>
<td>--</td>
<td>3.863885 (0.0609)</td>
</tr>
</tbody>
</table>

4.4. Results of Classical Test Assumptions

a. Multicollinearity Test
The test uses the variance inflation factor (VIF) to determine the possibility of multiple correlations between different variables. If the VIF value of the independent variables is <10, it can be concluded that there is no multicollinearity and passes the multicollinearity test.

Table 4. Multicollinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Accounting</td>
<td>4.306</td>
</tr>
<tr>
<td>Environmental Performance</td>
<td>2.325</td>
</tr>
<tr>
<td>Sustainability Growth</td>
<td>8.559</td>
</tr>
</tbody>
</table>

1. The independent variable Green Accounting has VIF 4.306 < 10; it can be concluded that there is no multicollinearity.
2. The independent variable, Environmental Performance, has a VIF of 2.325 < 10, so it can be concluded that there is no multicollinearity.
3. The independent variable, Sustainability Growth, has a VIF of 8.559 < 10, so it can be concluded that there is no multicollinearity.
b. Normality Test

The normality test tests whether the data in a regression model is usually distributed. Standard data requirements are if the Zskewness and Zkurtosis values are ± 1.96 for α = 0.05. (Ghozali, 2018).

<table>
<thead>
<tr>
<th>Test</th>
<th>Prob Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normality</td>
<td>0.4085</td>
</tr>
</tbody>
</table>

From Table 5, it can be seen that the Normality test results have a probability of 0.4085 > 0.05, so it can be concluded that the data is usually distributed.

c. Heteroscedasticity Test

The heteroscedasticity test is carried out to test whether there is an inequality of variance between the residuals of one observation and another observation in the regression model using the Gleser Test, namely regression of the absolute value. If the results on the probability value are > 0.05, then there is no heteroscedasticity, and vice versa.

<table>
<thead>
<tr>
<th>Test</th>
<th>Prob Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>0.5181</td>
</tr>
</tbody>
</table>

From Table 6, it is known that Obs * R-Squared has a prob value. Chi-Square value of 0.5181 > 0.05, so it can be concluded that there is no heteroscedasticity or that it passes the heteroscedasticity test.

d. Autocorrelation Test

The autocorrelation test is intended to determine whether, in a linear model, there is a correlation between confounding errors in period t (analysis period) and errors in period t-1 (previous period). The test uses the Breusch-Godfrey method with the criteria for passing the test if the Prob. Chi-Square > 0.05.

<table>
<thead>
<tr>
<th>Test</th>
<th>Prob Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>0.2719</td>
</tr>
</tbody>
</table>

From Table 7 above, it is known that the results of the autocorrelation test with the Breusch-Godfrey method have a probability chi-square value of 0.2719 > 0.05, so it can be concluded that there is no autocorrelation or passes the autocorrelation test.

4.5. Hypothesis Test

a. Regression equation

- The constant value is -0.12, meaning that without the Green Accounting (x1), Environmental Performance (x2), Sustainability Growth (x3), and Profitability (z) variables, the ROA (y) variable will decrease by 12%.
- The beta coefficient value of the Green Accounting variable (x1) is -0.0361; if the value of other variables is constant and variable x1 has decreased by 3.6%, the financial reporting quality variable (Y) will increase by 3.6%. Vice versa, if the value of other variables is constant and variable x1 has increased by 3.6%, then variable Y will decrease by 3.6%.
- The beta coefficient value of the Environmental Performance variable (x2) is 0.0396; if the value of other variables is constant and variable x1 increases by 3.9%, the financial reporting quality variable (Y) will increase by 3.9%. Vice versa, if the value of other variables is constant and variable x1 decreases by 3.9%, then variable Y will decrease by 3.9%.
- The beta coefficient value of the Sustainability Growth variable (x3) is -0.1741; if the value of other variables is constant and variable x1 has decreased by 17%, the financial reporting quality...
variable (Y) will increase by 17%. Vice versa, if the value of other variables is constant and variable x1 has increased by 17%, then variable Y will decrease by 17%.

- The beta coefficient value of the Profitability moderation variable (z) is 1.2775; if the value of other variables is constant and variable x1 has increased by 127%, the financial reporting quality variable (Y) will increase by 127%. Vice versa, if the value of other variables is constant and variable x1 decreases by 127%, then variable Y will decrease by 127%.

**b. F-test**

Table 8 shows that the F test results have an F-Statistic value of 3.960148 with a Prob (F-Statistic) value of 0.001020 <0.05, so it can be concluded that the independent variable has a significant effect simultaneously (simultaneously) on the dependent variable.

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-Statistic</td>
<td>3.960148</td>
</tr>
<tr>
<td>Prob (F-Stat)</td>
<td>0.00102</td>
</tr>
</tbody>
</table>

**c. Determination Test**

Table 9 shows the Adjusted R Square value of 0.206, so it can be concluded that the independent variables of green accounting, environmental performance, and sustainability growth influence the dependent variable of financial reporting quality simultaneously (simultaneously) by 20.6 or 20.67%. In comparison, other variables influence the remaining 79.4 or 79.4%.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R Square</td>
<td>0.206</td>
</tr>
</tbody>
</table>

d. Test t (partial)

The t-value of variable x1 (green accounting) is -0.0361, and the sig value is 0.0239 <0.05 means that the green accounting variable partially affects Y (financial reporting quality).

- The t value of the x2 variable count (Environmental Performance) is 0.0396, and the sig value is 0.0059 <0.05 means that the Environmental Performance variable partially affects Y (financial reporting quality).
- The t value of variable x3 (Sustainability Growth) is -0.1741, and the sig value is 0.0938 > 0.05, which means the Sustainability Growth variable has no partial effect on Y (financial reporting quality).
- The t value of variable x4 (Green et al.) is 0.2435, and the sig value is 0.0895 > 0.05 means that the Green Accounting and Profitability variables have no partial effect on Y (financial reporting quality).
- The t value of variable x5 (Environmental Performance and Profitability) is -0.3956, and the sig value is 0.0557 > 0.05 means that the Environmental Performance and Profitability variables have no partial effect on Y (financial reporting quality).
- The t value of variable x6 (Sustainability Growth and Profitability) is 0.1275, and the sig value is 0.4285 > 0.05 means that the Sustainability Growth and Profitability variables have no partial effect on Y (financial reporting quality).

**5. CONCLUSION**

Based on the research conducted on the Effect of Green Accounting, Environmental Performance, and Sustainability Growth on the Quality of Financial Statements with Profitability as the control variable for the 2021-2023 period, it is concluded that green accounting, involving the disclosure of
environmental costs in financial statements, does not significantly affect financial reporting quality. However, it is crucial to note that green accounting can bring long-term benefits, such as enhancing a company’s reputation and attracting environmentally conscious investors. Corporate environmental performance positively impacts the quality of financial reporting, leading to higher transparency, accountability, and a better company reputation. Although sustainability growth is essential for long-term strategy, it does not significantly influence financial reporting quality in the short term. Profitability also positively affects financial reporting quality, as more profitable companies have better resources to ensure accuracy and reliability. The study’s limitations include the focus on Non-Cyclicals sector companies, a small sample size, and a low adjusted R² value (20%), indicating that the model cannot fully explain financial reporting quality. Future research should consider a larger number of sectors, extend the sample selection period, and incorporate additional variables to provide a more comprehensive analysis of financial reporting quality.

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