Green accounting practices from the perspectives of legitimacy theory and stakeholders in the food and beverage industry

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ABSTRACT
Implementing green accounting is a way for companies to improve environmentally friendly operations where there is a relationship between operating funds and the company's environmental budget. The impact of green accounting in companies influences environmental performance and environmental disclosure, which is a new variable from the dependent variable in this research. The independent variable is a financial performance variable measured using the Return on Asset (ROA) ratio of registered food and beverage sector manufacturing companies on the Indonesian Stock Exchange from 2019 to 2022. This research aims to determine how green accounting implementation impacts the company's financial performance. In this research, 44 sample companies were selected purposively. Using a dummy variable regression analysis model, the test results show that environmental disclosure variables influence financial performance, but environmental performance variables do not. The limitation of this research lies in the need for more samples used so that future research is expected to be able to add samples by expanding the research population.

KEYWORDS
Green Accounting; Environmental Performance; Environmental Disclosure; Financial Performance

Introduction
Indonesia’s economic progress has been consistently on the rise, presenting a positive trend for the improvement of both emerging and established companies in the business sector. This contributes significantly to the advancement of Indonesia’s economy. The growth prospects for companies in the food and beverage sector are particularly promising, given the fundamental human need for food and drink in daily life (Murniati & Sovita, 2021). This underscores the importance of addressing the waste generated by the food and beverage industry as a potential issue that could negatively impact a company if not handled appropriately. Additionally, the competition for land use in conservation and environmental preservation poses a challenge (Alden Hull et al., 2022; Rahman & Islam, 2023).

Accounting plays a crucial role in corporate financial reporting, leading to an increasing integration between accounting and environmental reporting. It is considered vital in business due to its impact on a company's social and environmental performance (Maama & Appiah, 2019). Green Accounting, defined by (Hartiah and Pratiwi, 2022 Maama and Appiah, 2019 Ningish and Rachmawati, 2017 and Ratusasi and Prastiwi, 2018), represents an accounting effort linking a company’s operational funds with environmental budgets. Green accounting allows companies to improve environmentally friendly operations, manage costs, invest in eco-friendly technologies, and promote environmentally sustainable product processes (Ratusasi & Prastiwi, 2018). The benefits of Green Accounting include costs for improved environmental management, environmentally conscious business strategies, more accurate production cost calculations, and opportunities to reduce environmental costs while increasing profitability (Mustofa et al., 2020). The value chain is closely tied to green accounting, from identifying costs to achieving financial and competitive advantages (Benetti & Iov, 2023; Sánchez, 2015; Yun et al., 2019). Enhanced profitability is an external factor influencing environmental accounting (Budiano & Dura, 2021; Meiriani et al., 2022).

Food and beverage companies have both short-term and long-term objectives, aiming to maximize profits in the short term by utilizing resources efficiently and achieving maximal value in the long term (Murniati & Sovita, 2021). Effective waste management in the food and beverage industry is essential to prevent environmental contamination (Lestari et al., 2020; Murniati & Sovita, 2021; Sulistiawati, 2016). Financial performance improves with green accounting as companies gain positive public perception, leading to increased sales and profits (Murniati & Sovita, 2021). However, according to (Syafrina et al., 2020), green accounting may not impact financial performance significantly, as the costs associated with environmental expenses can affect company profits. Researchers noted that a company’s financial performance is crucial in determining whether investors will maintain their investments (Murniati & Sovita, 2021; Rahmadhani et al., 2021). Nevertheless, implementing green accounting in companies is challenging and requires high profitability and substantial funds for execution, indicating to both companies and investors their commitment to invest capital (Sulistiawati & Dirgantari, 2017).
This research is undertaken due to the limited application of green accounting disclosure in developing countries like Indonesia, as revealed (Maama & Appiah, 2019). Building upon the research (Dianty & Nurrahim, 2022) conducted in 2018-2019 on basic and chemical industry manufacturing companies, this study focuses on 2019-2022 in the food and beverage sector. The selection of this sector is based on its potential environmental impact from production activities and introduces a new variable, environmental disclosure. The indicators used in this study to calculate profitability include Return on Assets (ROA), a ratio assessing a company’s ability to generate profit (Sulistiawati & Dirgantari, 2017).

**Literature review**

**Theoretical framework**

This study adopts legitimacy theory and stakeholder theory as its core theoretical frameworks, following the approach used by Alminah & Diantal Pemukal (2023), Hadriyani & Dewi (2022), Malamal & Alppialah (2019), Mustofal et al. (2020), and Sulistialwati & Dargalntari (2017) in their research on environmental management practices. Legitimacy theory suggests that businesses must disclose environmental information and engage in environmentally beneficial actions to gain societal approval and legitimacy, which is crucial for optimizing long-term financial performance (Hadriyani & Dewi, 2022). Conversely, stakeholder theory posits that all stakeholders, defined as parties impacted by or capable of impacting the organization, deserve access to information about organizational activities that could affect their decisions (Hadriyani & Dewi, 2022; Lu & Taylor, 2018).

**Green accounting**

In Europe in the 1970s, green accounting was spurred by increased environmental awareness among non-governmental organizations and the public, leading businesses to adopt green accounting practices (Sulistialwati & Dargalntari, 2017). Green accounting aims to improve the relevance and effectiveness of the information provided. Its success hinges on the precision with which companies categorize environmental costs and how accurately their accounting practices reflect their efforts to reduce environmental damage. For stakeholders, prioritizing environmental accounting and initiatives is essential, as these support sustainable business practices, which are evaluated and analyzed through green accounting (Aldesalmi, 2022). Green Accounting integrates environmental factors into financial reporting, including information on environmental management and performance (Hamidi, 2019; Setiawan & Honesty, 2022). The Indonesian Ministry of Environment and Forestry uses the PROPER rating to assess corporate environmental performance, indicating the effectiveness of green accounting practices (Budiono & Dural, 2021).

**Environmental performance**

As described by Al-Malwali (2021), Ningsih & Rachmawati (2017), and Setiadi (2021), environmental performance, though lacking a precise definition, encompasses three main areas: environmental impact, compliance with environmental regulations, and organizational processes. The Indonesian Ministry of Environment and Forestry uses the PROPER rating indicators to evaluate environmental performance. Environmental disclosure in annual reports represents a company’s responsibility towards society and stakeholders, reflecting its social performance, while financial performance, observable from annual returns, sets standards for measuring a company’s profitability effectiveness (Dhar et al., 2022; Hafil Akmal, 2023; Malamal & Alppialah, 2019; Sulistialwati & Dargalntari, 2017). Financial performance is often gauged using the Return on Assets (ROA) ratio, which compares net profit to total managed assets (Seto et al., 2023).

**Research hypotheses**

In the Indonesian context, the Program for Pollution Control, Evaluation, and Rating (PROPER) initiated by the Ministry of Environment and Forestry serves as a pivotal mechanism for evaluating corporate environmental performance. This program mandates a rigorous assessment of companies’ adherence to environmental management norms, thereby ensuring corporate accountability in environmental stewardship. The integration of information regarding a corporation’s engagement in the PROPER program within its annual reports is a strategic move. It significantly bolsters the public image and trust in the company, which could, in turn, lead to an escalation in sales and, consequently, profits. The correlation between environmental performance and financial success has been substantiated through empirical research conducted by scholars such as Al-Malwali (2021), Rahmalndhani et al. (2021), Ratusasi & Prastiwi (2018), and Setiadi (2021). These studies collectively underscore a positive trajectory from enhanced environmental performance to improved financial outcomes. Hypothesis 1 (H1) posits that there exists a constructive alignment between environmental performance and financial performance. This hypothesis is premised on the notion that diligent environmental management and sustainable practices instituted by corporations do not merely comply with regulatory requirements but also contribute significantly to their financial prosperity.

Furthermore, the practice of environmental disclosure by corporations plays a crucial role in shaping public perceptions regarding their commitment to environmental management. Such disclosure, often viewed as a facet of corporate social responsibility, has a far-reaching impact on the corporate entity. It serves as a magnet for attracting increased investor interest and heightening stakeholder engagement. This phenomenon, which reflects a blend of ethical practice and strategic communication, has been explored in recent research by Dhar et al. (2022) and Dianty & Nurrahim (2022). These studies have illuminated the positive effects of environmental disclosure on a company’s financial performance, thereby indicating that transparency and accountability in environmental matters are not just
ethical imperatives but also business imperatives. Hypothesis 2 (H2) is formulated on the premise that there is a positive relationship between environmental disclosure and financial performance. This hypothesis is rooted in the understanding that when companies disclose their environmental initiatives and achievements, they not only comply with regulatory frameworks but also foster a positive image among stakeholders, leading to enhanced financial outcomes.

Methods

This research undertakes an in-depth examination of food and beverage manufacturing corporations listed on the Indonesia Stock Exchange (IDX) over a span of four years, from 2019 to 2022. Utilizing a rigorous quantitative research methodology, the study systematically collects data via the documentation approach, predominantly sourcing secondary data from the IDX’s official portal, www.idx.co.id. The research design incorporates purposive sampling as the primary technique for sample selection, drawing upon the methodological frameworks proposed by Sulistyawati & Dirgantari (2017) and Suseno Hendratmoko (2022). This sampling strategy is meticulously applied to identify food and beverage manufacturing firms listed on the IDX that have demonstrated consistent dissemination of their annual reports throughout the specified time frame.

Furthermore, the scope of the study is carefully narrowed to encompass those entities within the sector that have engaged in the PROPER (Environmental Performance Rating Program) from 2019 to 2022. A crucial criterion for inclusion in the sample is the maintenance of financial stability, evidenced by the absence of financial losses during these years. This focus allows for a nuanced exploration of the interplay between environmental commitment, as shown through participation in PROPER, and financial resilience within this sector. The study thus aims to provide a comprehensive analysis of the financial and environmental performance of these corporations, contributing valuable insights into the dynamics of the food and beverage manufacturing industry in Indonesia.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Indicator</th>
<th>Scale</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Performance</td>
<td>Environmental performance is carried out to prevent problems in environmental preservation throughout the company’s operational activities which are related to the surrounding environment.</td>
<td>The assessment results are expressed in the form of color-coded rankings, including Gold (5), Green (4), Blue (3), Red (2), and Black (1)</td>
<td>Ratio</td>
<td>(Dianty &amp; Nurrahim, 2022)</td>
</tr>
<tr>
<td>Environmental mitigation</td>
<td>Environmental disclosure includes environmental informality that is based on legal regulations.</td>
<td>0 = No environmental disclosure 1 = carry out environmental disclosure</td>
<td>Dummy</td>
<td>(Almaqtari et al., 2023)</td>
</tr>
</tbody>
</table>
| Financial Performance | Financial performance can be seen from the company’s level of profitability. A company’s profitability can be measured by the return on assets ratio. | \[
\frac{\text{Profit}}{\text{Total Assets}} \times 100\%
\] | Ratio | (Sulistiawati & Dirgantari, 2017) |

The method employed for data analysis in this study is the dummy variable regression analysis, which is preceded by the classical assumption tests. These tests include the examination of data normality, multicollinearity test, and heteroscedasticity test.

Results

Descriptive statistics

Table 2. Descriptive Statistical Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Performance</td>
<td>44</td>
<td>3.00</td>
<td>4.00</td>
<td>3.0455</td>
<td>0.21071</td>
</tr>
<tr>
<td>Environmental Disclosure</td>
<td>44</td>
<td>0.00</td>
<td>1.00</td>
<td>0.7727</td>
<td>0.42392</td>
</tr>
<tr>
<td>Financial performance</td>
<td>44</td>
<td>3.52</td>
<td>97.19</td>
<td>13.8120</td>
<td>14.92826</td>
</tr>
</tbody>
</table>

Table 2 presents the descriptive statistical analysis results, utilizing a dataset comprising 44 observations from 11 companies over a four-year period. The data on environmental performance reveal a minimum score of 3, a maximum of 4, an average (mean) score of 3.0455, and a standard deviation of 0.21071. For environmental disclosure, the statistics indicate a minimum value of 0, a maximum of 1, an average value of 0.7727, and a standard deviation of 0.42392. Regarding Financial Performance (ROA), the figures show a minimum value of 3.52, a maximum of 97.19, a mean of 13.8120, and a standard deviation of 14.92826.
Classic assumption test

In the realm of classical assumption tests conducted within this study, several key statistical assessments were performed to ensure the robustness and validity of the data analysis. The normality test, a crucial prerequisite for multiple regression analysis, yielded a p-value of 0.052. This result surpasses the conventional alpha level of 0.05, thereby substantiating the premise that the dataset adheres to a normal distribution. This is a fundamental aspect, as normal distribution of data is a critical assumption underpinning many statistical analyses, ensuring the applicability and reliability of subsequent inferential statistical tests. Furthermore, the investigation into potential multicollinearity issues, which could undermine the integrity of the regression analysis, revealed reassuring outcomes. The tolerance statistic stood at 0.986, and the Variance Inflation Factor (VIF) was recorded at 1.014. These values are indicative of minimal multicollinearity within the dataset. Specifically, the tolerance value, being significantly higher than the minimum threshold of 0.1, and the VIF, being well below the often-cited threshold of 10, collectively suggest that the independent variables in the study maintain a commendable level of distinctiveness without undue overlap or inter-correlation.

Additionally, the heteroscedasticity test, a measure designed to detect inconsistencies in the variance of error terms, indicated the absence of heteroscedasticity. This inference was drawn from the observation that the data points were randomly distributed both above and below the zero line on the Y-axis in the scatter plot. The significance of this finding lies in the fact that the absence of heteroscedasticity ensures the reliability of the regression coefficients and the overall predictive power of the regression model. In summary, the classical assumption tests applied in this research collectively affirm the methodological soundness and the statistical validity of the data, thereby enhancing the credibility and the interpretive power of the study's findings.

Table 3. Multiple Regression Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>43.384</td>
<td>13.135</td>
<td>3.303</td>
<td>.002</td>
</tr>
<tr>
<td>Environmental Performance</td>
<td>-7.130</td>
<td>4.333</td>
<td>-.201</td>
<td>1.645</td>
</tr>
<tr>
<td>Environmental Disclosure</td>
<td>10.169</td>
<td>2.154</td>
<td>-.576</td>
<td>4.721</td>
</tr>
</tbody>
</table>

Table 3 delineates the outcomes of a multiple regression analysis, which incorporates a dummy variable, culminating in the formulation of the regression equation \( Y = 43.384 - 7.130(X1) + 10.169(X2) + e \). Within this analytical framework, dummy variables are utilized to scrutinize the influence exerted by Environmental Performance (X1) and Environmental Disclosure (X2) on Financial Performance, represented here as Return on Assets (ROA). The intercept of the equation, quantified at 43.384, suggests that in a hypothetical scenario devoid of the influence of the independent variables, Financial Performance would maintain a positive magnitude. Pertaining to the coefficient associated with Environmental Performance (X1), which is registered at -7.130, it is indicative of a negative correlation. This implies that an incremental augmentation in Environmental Performance is correlated with a decrement in Financial Performance by this specific coefficient value, under the condition that the Environmental Disclosure remains constant. In contrast, the coefficient ascribed to Environmental Disclosure (X2), which is 10.169, denotes a positive relationship. This suggests that an increase in Environmental Disclosure by a single unit is anticipated to enhance Financial Performance by an equivalent of this coefficient value, presupposing that Environmental Performance is maintained at a steady level.

Coefficient of Determination

Table 4. Coefficient of Determination Test

<table>
<thead>
<tr>
<th>Coefficient of Determination Test</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.632a</td>
<td>0.399</td>
<td>0.370</td>
<td>5.94514</td>
</tr>
</tbody>
</table>

Source: processed data

The results of the coefficient of determination analysis indicate an R-Square value of 0.399, or 39.9%, denoting that the variables of environmental performance (X1) and environmental disclosure (X2) collectively explain 39.9% of the variance in financial performance (Y). This implies that the remaining 60.1% of the variance is attributed to other variables not investigated in this study. The outcome of the F-test, with a value of 13.609 and a significance level of 0.000, which is below the threshold of \( \alpha = 0.05 \), confirms that environmental performance and environmental disclosure have a joint and statistically significant influence on financial performance. Regarding the individual impact, the t-test for the environmental performance variable yields a value of 0.108, surpassing the 0.05 significance level, suggesting an insignificant effect on financial performance and necessitating the rejection of hypothesis H1. In contrast, the environmental disclosure variable, with a t-test value of 0.000, falling below the 0.05 threshold, exhibits a significant influence on financial performance, substantiating the acceptance of hypothesis H2.

Discussion

Environmental performance's influence on financial performance

The study indicates that environmental performance does not significantly affect financial performance, as evidenced by a significance value of 0.108, exceeding the 0.05 threshold, leading to the hypothesis being dismissed.
This lack of significant impact could stem from inadequate public or consumer trust in environmental performance despite favorable PROPER ratings, which seemingly do not influence a company's financial outcomes. In the food and beverage industry during 2019-2022, despite receiving blue and green PROPER ratings, there was no corresponding increase in profitability. The perception of investors regarding environmental performance, which goes beyond just rankings, also plays a role. Additionally, some companies practicing environmental performance still engage in activities harmful to the environment. This study's conclusions align with those of Xie et al. (2022), who found no significant impact of environmental performance on financial performance.

**Environmental disclosure's effect on financial performance**

The research reveals that environmental disclosure significantly affects financial performance, supporting the hypothesis with an environmental disclosure variable significance value of 0.000, well below 0.05. This finding suggests that environmental disclosure offers crucial public information about how companies report environmental matters in annual reports. Under legitimacy theory, it is the public's role to evaluate whether a company's environmental information disclosure is sufficient for gaining external recognition, which can enhance its long-term financial performance. Kalash's (2020) research corroborates this, indicating a positive relationship between environmental disclosure and financial performance.

**Conclusion**

This research is primarily focused on exploring the influence exerted by the implementation of green accounting practices on the financial performance of organizations. The study's core objective is to determine the extent to which green accounting impacts corporate financial outcomes. It arrives at a conclusion that within the framework of this study, environmental performance, considered as one of the independent variables, does not exhibit a statistically significant influence on the financial performance of companies. Conversely, environmental disclosure, which represents another key independent variable in the research, is found to have a noticeable impact on financial performance, the latter being the dependent variable in this investigation.

The analytical results, as denoted by the R-Square value, reveal that the independent variables, namely environmental performance and environmental disclosure, collectively account for 39.9% of the variations observed in the dependent variable, which is the financial performance of the companies under study. This implies that a significant portion, specifically 60.1%, of the variation in financial performance is potentially influenced by factors that are not covered in the scope of this current research. A critical observation from this study is the limitation posed by the relatively small sample size utilized in the analysis. The limited number of samples may constrain the generalizability and the scope of the research findings. Therefore, it is recommended for future research endeavors in this domain to consider expanding the research methodology. This expansion could involve incorporating a larger sample size, which would provide a more robust and comprehensive understanding of the relationships being investigated. Additionally, extending the research population to include a wider range of industries or geographical regions could offer more diverse insights and contribute to a more nuanced understanding of how green accounting practices influence financial performance across different contexts. Such enhancements in research design would potentially lead to more definitive conclusions and could offer more substantive guidance for practitioners and policymakers in the field of environmental accounting and corporate finance.

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**References**


