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The Role of Environmental Disclosure in Tax Avoidance

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Abstract: This study analyzes the relationship between green accounting, stakeholder pressure, environmental disclosure, and carbon tax avoidance using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach via SmartPLS software. The research data were obtained through the distribution of a structured questionnaire to 280 companies from various industrial sectors in Indonesia. The analysis was conducted in two stages: testing the measurement model to ensure construct reliability and validity, and testing the structural model to evaluate direct, indirect, and mediating effects using the bootstrapping technique with 5,000 resamples. The results of the study show that green accounting and stakeholder pressure influence environmental disclosure, underscoring the importance of these two factors in enhancing corporate transparency. Environmental disclosure was found to have a negative effect on carbon tax avoidance, indicating that higher levels of transparency can reduce companies' opportunistic behavior in carbon tax avoidance. However, green accounting does not have a direct effect on carbon tax avoidance; rather, it exerts an indirect influence through the mediating effect of environmental disclosure. Conversely, stakeholder pressure has a direct effect on carbon tax avoidance without going through a mediating mechanism. These findings enrich the sustainability accounting literature by integrating internal accounting practices and external stakeholder dynamics in explaining corporate tax compliance behavior.

Keywords: *Green Accounting, Stakeholder Pressure, Environmental Disclosure, Carbon Tax Avoidance.*

Indonesian Abstract: *Penelitian ini menganalisis hubungan antara akuntansi hijau, tekanan pemangku kepentingan, pengungkapan informasi lingkungan, dan penghindaran pajak karbon dengan menggunakan pendekatan Partial Least Squares–Structural Equation Modeling (PLS-SEM) melalui perangkat lunak SmartPLS. Data penelitian diperoleh melalui penyebaran kuesioner terstruktur kepada 280 perusahaan dari berbagai sektor industri di Indonesia. Analisis dilakukan dalam dua tahap: pengujian model pengukuran untuk memastikan reliabilitas dan validitas konstruk, serta pengujian model struktural untuk mengevaluasi efek langsung, tidak langsung, dan mediasi menggunakan teknik bootstrapping dengan 5.000 resample. Hasil penelitian menunjukkan bahwa akuntansi hijau dan tekanan pemangku kepentingan memengaruhi pengungkapan lingkungan, yang menegaskan pentingnya kedua faktor tersebut dalam meningkatkan transparansi perusahaan. Pengungkapan lingkungan ditemukan memiliki efek negatif terhadap penghindaran pajak karbon, yang menunjukkan*

bahwa tingkat transparansi yang lebih tinggi dapat mengurangi perilaku oportunistik perusahaan dalam penghindaran pajak karbon. Namun, akuntansi hijau tidak memiliki efek langsung terhadap penghindaran pajak karbon; melainkan, akuntansi hijau memberikan pengaruh tidak langsung melalui efek mediasi pengungkapan lingkungan. Sebaliknya, tekanan dari pemangku kepentingan memiliki dampak langsung terhadap upaya penghindaran pajak karbon tanpa melalui mekanisme perantara. Temuan-temuan ini memperkaya literatur akuntansi keberlanjutan dengan mengintegrasikan praktik akuntansi internal dan dinamika pemangku kepentingan eksternal dalam menjelaskan perilaku kepatuhan pajak perusahaan.

Keywords: Akuntansi Hijau, Tekanan dari Pemangku Kepentingan, Pengungkapan Informasi Lingkungan, Penghindaran Pajak Karbon.

INTRODUCTION

Climate change has become one of the most pressing global challenges, affecting economic, social, and environmental stability. The continuous increase in greenhouse gas emissions generated by industrial activities has encouraged many countries to adopt low-carbon economic transition policies through the implementation of market-based environmental instruments, one of which is the carbon tax. This policy instrument is designed to internalize the external costs of carbon emissions, thereby encouraging firms to reduce emissions while improving resource-use efficiency. In Indonesia, the government's commitment to emission reduction has been reinforced through the ratification of the Paris Agreement, the establishment of the Net Zero Emissions target by 2060 or earlier, and the enactment of Law Number 7 of 2021 on the Harmonization of Tax Regulations, which provides the legal foundation for the implementation of carbon taxation. Nevertheless, the effectiveness of carbon tax policies depends not only on regulatory design but also on the extent to which firms comply with both environmental and taxation obligations.

In practice, many companies continue to face a dilemma between achieving sustainability objectives and maintaining economic efficiency. Increasing pressure to maximize profitability may encourage firms to adopt various strategies to minimize the financial burden associated with environmental regulations, including carbon tax avoidance practices. Such practices do not necessarily constitute illegal activities; rather, they may involve exploiting regulatory loopholes, manipulating emissions reporting, or employing accounting strategies that reduce carbon tax liabilities without generating genuine reductions in carbon emissions. Consequently, these practices may undermine the effectiveness of carbon taxation as an environmental policy instrument while simultaneously weakening the credibility of corporate sustainability commitments.

To address these challenges, green accounting has attracted increasing attention as an internal governance mechanism that integrates environmental considerations into corporate accounting systems. Through the recognition, measurement, and reporting of environmental costs and liabilities, green accounting is expected to enhance corporate transparency, accountability, and decision-making regarding environmental management. However, the implementation of green accounting remains uneven, particularly in developing countries. In many organizations, green accounting practices continue to be implemented primarily to satisfy administrative and reporting requirements, resulting in symbolic compliance rather than substantive environmental accountability. Consequently, its potential contribution to strengthening corporate compliance with environmental policies, including carbon taxation, has not yet been fully realized.

Beyond internal governance mechanisms, corporate behavior is also shaped by external pressures exerted by various stakeholders. According to Stakeholder Theory, firms are accountable not only to shareholders but also to governments, investors, customers,

communities, the media, and environmental organizations that have legitimate interests in the social and environmental consequences of corporate activities. Pressure from these stakeholders encourages firms to improve transparency, strengthen sustainability practices, and maintain organizational legitimacy through more comprehensive environmental disclosure. In this context, environmental disclosure serves not merely as a corporate communication tool but also as an accountability mechanism that enables stakeholders to evaluate whether corporate sustainability commitments are consistent with actual business practices.

Although the relationships among green accounting, stakeholder pressure, and environmental disclosure have been widely investigated, empirical evidence linking these variables to carbon tax avoidance remains relatively limited. Previous studies have predominantly examined the direct influence of green accounting on environmental performance or the quality of sustainability disclosure, while other studies have primarily focused on stakeholder pressure as a determinant of environmental disclosure. Meanwhile, research on carbon tax avoidance is still emerging and has largely emphasized regulatory frameworks, corporate governance, or fiscal policy perspectives. Consequently, limited understanding exists regarding how internal corporate mechanisms and external stakeholder pressures interact simultaneously in shaping firms' carbon tax avoidance behavior.

Moreover, previous empirical findings remain inconclusive. Several studies have reported that green accounting enhances environmental compliance and discourages opportunistic corporate behavior, whereas others argue that its implementation has little direct impact because green accounting practices often remain symbolic rather than substantive. Likewise, the influence of stakeholder pressure on corporate compliance behavior varies considerably across countries, industries, and regulatory environments. These inconsistencies suggest the existence of additional mechanisms capable of explaining the relationship between corporate sustainability practices and firms' environmental compliance behavior.

To address this research gap, the present study proposes that environmental disclosure serves as a mediating mechanism linking green accounting and stakeholder pressure to carbon tax avoidance. High-quality environmental disclosure is expected to reduce information asymmetry, enhance corporate transparency, strengthen public oversight, and limit opportunities for firms to engage in opportunistic carbon tax avoidance strategies.

This study offers several contributions to the existing literature. First, it integrates the perspectives of green accounting, Stakeholder Theory, and environmental transparency into a comprehensive conceptual framework for explaining corporate carbon tax avoidance behavior. Second, it extends the environmental taxation literature by examining the mediating role of environmental disclosure, an issue that has received relatively limited attention in previous studies. Third, the study provides empirical evidence from Indonesia, an emerging economy that is currently developing both its carbon taxation system and corporate sustainability governance. As such, the findings contribute to the growing international literature on environmental policy implementation in emerging economies.

Accordingly, this study aims to examine the effects of green accounting and stakeholder pressure on carbon tax avoidance by positioning environmental disclosure as a mediating variable. The findings are expected not only to enrich the development of sustainability accounting and Stakeholder Theory but also to provide practical implications for regulators, corporations, and other stakeholders in designing policies that promote greater environmental transparency while strengthening compliance with carbon tax regulations.

Literature Review and Hypothesis Development

Green Accounting and Environmental Disclosure

Green accounting provides a quantitative foundation for the preparation of credible and comprehensive environmental reports. The systematic measurement of environmental costs and impacts enables companies to produce verifiable disclosures that accurately reflect their

environmental performance. When environmental information is integrated into a firm's accounting and financial systems, the reporting process becomes more consistent, transparent, and relevant to stakeholders. Consequently, the integration of green accounting into corporate reporting practices is expected to enhance both the quality and comprehensiveness of environmental disclosure. Accordingly, the following hypothesis is proposed:

H1: Green accounting has a positive effect on environmental disclosure.

Green Accounting and Carbon Tax Avoidance

Green accounting incorporates environmental costs into a company's financial system, enabling firms to identify and internalize the ecological consequences of their operational activities. When effectively implemented, green accounting promotes greater transparency and accountability, thereby discouraging environmentally harmful practices through improved financial reporting. Companies that comprehensively adopt green accounting frameworks are expected to evaluate their carbon-related obligations more accurately and comply more effectively with environmental taxation schemes designed to reduce greenhouse gas emissions. Previous empirical studies have demonstrated that environmentally oriented accounting practices enhance compliance with environmental regulations while reducing firms' propensity to engage in opportunistic tax-related behavior. Based on this reasoning, the following hypothesis is proposed:

H2: Green accounting has a negative effect on carbon tax avoidance.

Stakeholder Pressure and Environmental Disclosure

Stakeholder Theory suggests that transparency constitutes a fundamental mechanism through which firms manage relationships with stakeholders and meet their diverse expectations. Companies facing greater pressure and scrutiny from stakeholders are more likely to strengthen their environmental disclosure practices as a demonstration of accountability and commitment to sustainable development. Environmental disclosure serves not only to reduce legitimacy threats but also to signal the firm's responsiveness to societal expectations and regulatory requirements. Previous studies have consistently identified stakeholder pressure as a major determinant of both the quality and extent of corporate environmental disclosure. Therefore, environmental disclosure should be viewed not merely as a compliance instrument but also as a strategic mechanism for addressing social and institutional expectations. Based on these arguments, the following hypothesis is proposed:

H3: Stakeholder pressure has a positive effect on environmental disclosure.

Stakeholder Pressure and Carbon Tax Avoidance

Stakeholders-including regulators, investors, customers, and civil society organizations—play a crucial role in shaping corporate environmental behavior through both direct and indirect forms of pressure. Increased stakeholder scrutiny raises both reputational and regulatory risks for firms engaging in environmentally irresponsible business practices. As companies encounter stronger sustainability-related demands, they become more inclined to comply with ethical standards and environmental regulations in order to maintain organizational legitimacy and public trust. Conversely, weak stakeholder oversight may create opportunities for firms to exploit loopholes within carbon taxation systems. Accordingly, greater stakeholder pressure is expected to reduce the likelihood of carbon tax avoidance, as firms seek to align their behavior with prevailing social norms and preserve their legitimacy. Therefore, the following hypothesis is proposed:

H4: Stakeholder pressure has a negative effect on carbon tax avoidance.

Environmental Disclosure and Carbon Tax Avoidance

Environmental disclosure functions as a transparency mechanism that reduces information asymmetry between firms and external stakeholders. High-quality environmental disclosure enhances public scrutiny of corporate environmental performance, making opportunistic tax-related behavior more visible and increasing its associated reputational risks. Firms that provide detailed, transparent, and verifiable environmental reports are therefore less likely to engage in carbon tax avoidance strategies. As corporate transparency in environmental reporting increases, stakeholder monitoring becomes more effective, thereby discouraging tax avoidance behavior and strengthening regulatory compliance. Based on this rationale, the following hypothesis is proposed:

H5: Environmental disclosure has a negative effect on carbon tax avoidance.

The Mediating Role of Environmental Disclosure

Environmental disclosure is expected to function as a mediating mechanism through which green accounting and stakeholder pressure influence carbon tax avoidance. Companies implementing green accounting systems generate structured environmental information that can be disclosed transparently to external stakeholders. At the same time, stakeholder pressure encourages firms to enhance environmental disclosure as evidence of corporate accountability and regulatory compliance. When such disclosure is credible, comprehensive, and transparent, it strengthens corporate accountability and reduces the likelihood of firms engaging in carbon tax avoidance practices. Consequently, environmental disclosure is expected to mediate both the relationship between green accounting and carbon tax avoidance and the relationship between stakeholder pressure and carbon tax avoidance. Accordingly, the following hypotheses are proposed:

H6a: Environmental disclosure mediates the relationship between green accounting and carbon tax avoidance.

H6b: Environmental disclosure mediates the relationship between stakeholder pressure and carbon tax avoidance.

METHODS

Research Design

This study employed a quantitative survey-based research design using a causal-explanatory approach to examine the effects of green accounting and stakeholder pressure on carbon tax avoidance, with environmental disclosure serving as a mediating variable. A survey method was selected because it enables the collection of perceptual data from individuals directly involved in environmental management, financial reporting, and corporate sustainability practices. This approach allows researchers to capture behavioral constructs and organizational attitudes that are difficult to observe solely through secondary data.

Data were collected using a structured questionnaire employing a five-point Likert scale to ensure consistency in respondents' answers and facilitate statistical analysis of the relationships among the research variables. Furthermore, the causal-explanatory design supports hypothesis testing and provides empirical verification of the conceptual framework developed in this study.

Population and Sample Selection

The study population comprised companies operating in high-emission industries and environmentally sensitive sectors located in the provinces of Banten, Jakarta Special Capital Region (DKI Jakarta), and West Java, Indonesia. These regions were selected because they represent Indonesia's major industrial hubs, where environmental regulations and corporate sustainability initiatives have been implemented more extensively than in many other regions.

The respondents consisted of professionals occupying managerial, accounting, and sustainability-related positions, including finance managers, financial controllers, internal auditors, environmental officers, and sustainability managers. These individuals were selected because they possess sufficient knowledge of environmental management, green accounting practices, and corporate environmental disclosure processes, making them well qualified to provide reliable responses regarding the constructs examined in this study.

The sample size was determined based on the commonly accepted guideline for Structural Equation Modeling (SEM), which recommends a minimum of five to ten respondents for each measurement indicator. As this study employed 28 measurement indicators representing 10 latent constructs, the recommended sample size ranged from 140 to 280 respondents. To enhance statistical power and improve model stability, the upper limit of this recommendation was adopted, resulting in a target sample of 280 valid respondents. To account for potential incomplete or unusable responses, a total of 300 questionnaires were distributed.

Following a rigorous data screening process-including the removal of incomplete responses, inconsistent response patterns, and extreme outliers-a final sample of 280 valid observations was retained for analysis. These screening procedures were conducted to improve model stability, strengthen the accuracy of path coefficient estimation, and enhance the generalizability of the findings within the context of corporate sustainability practices in Indonesia.

The respondents' demographic profile summarizes the characteristics of the 280 valid respondents included in this study. The geographical distribution of the respondents was relatively balanced, with 30% representing Banten Province, 35% representing the Jakarta Special Capital Region (DKI Jakarta), and 35% representing West Java Province. This distribution reflects the diversity of Indonesia's major industrial regions, where environmental regulations and corporate sustainability initiatives have been implemented more extensively.

The majority of respondents were employed in the manufacturing sector (32.1%) and the energy and utilities sector (25.0%), consistent with the study's focus on industries characterized by high carbon emissions and significant environmental sensitivity. Regarding organizational

size, 41.8% of the respondents worked in large companies with more than 500 employees, while 37.1% were employed by medium-sized enterprises.

With respect to professional positions, most respondents occupied strategic and technical roles, including finance and accounting managers (38.2%) and environmental or sustainability officers (27.1%). These positions indicate that the respondents possessed substantial knowledge and practical experience related to green accounting, environmental disclosure, and carbon taxation policies. Consequently, the demographic characteristics of the respondents provide confidence that the collected data are both contextually reliable and appropriate for examining corporate sustainability practices in the Indonesian setting.

Data Collection and Research Instruments

Research data were collected through a structured questionnaire administered both online and through face-to-face distribution to respondents who met the predetermined eligibility criteria. The questionnaire was designed to obtain information regarding respondents' demographic characteristics as well as their perceptions of green accounting, stakeholder pressure, environmental disclosure, and carbon tax avoidance.

All research constructs were measured using a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The Likert scale was selected because it provides a standardized approach for capturing the intensity of respondents' attitudes and perceptions while facilitating statistical analysis within the Structural Equation Modeling (SEM) framework.

The measurement indicators were adapted from established studies to ensure both theoretical validity and conceptual consistency. Green accounting was measured using indicators reflecting the extent to which environmental costs and impacts are integrated into corporate accounting systems and managerial decision-making processes. These indicators were adapted from Sundarasen et al. (2024) and Bresciani et al. (2022).

Stakeholder pressure was measured using indicators representing the influence of regulators, investors, customers, and society on corporate sustainability practices, following the measurement approaches proposed by Singh et al. (2022) and Vitolla et al. (2019). Environmental disclosure was assessed based on the completeness, transparency, and reliability of sustainability information in accordance with the framework developed by Bose (2020). Meanwhile, carbon tax avoidance was measured using indicators reflecting managerial attitudes and behavioral tendencies toward minimizing carbon tax obligations, adapted from Lassoued et al. (2024).

Before the full-scale survey was conducted, a pilot test involving 20 respondents was undertaken to assess the clarity, relevance, and reliability of all questionnaire items. The pilot study confirmed that all measurement items were clearly understood, contextually appropriate, and consistently represented the intended constructs. Reliability analysis produced Cronbach's Alpha values ranging from 0.782 to 0.911 and Composite Reliability (CR) values between 0.801 and 0.928, indicating satisfactory internal consistency across all research constructs.

Data Analysis Technique

The research data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) implemented through SmartPLS software. This analytical approach was selected because it is particularly suitable for examining complex causal relationships among latent constructs measured by multiple indicators. Moreover, PLS-SEM is appropriate for studies involving moderate sample sizes and research models emphasizing both theory development and predictive capability. The analysis was conducted through several sequential stages.

The first stage involved descriptive statistical analysis to summarize respondents' demographic characteristics and examine the distribution of the research data. This was

followed by the evaluation of the measurement model (outer model) to assess the reliability and validity of each construct through outer loadings, Composite Reliability (CR), and Average Variance Extracted (AVE). Convergent validity was considered acceptable when the AVE exceeded 0.50, whereas discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT), with values below 0.90 indicating satisfactory discriminant validity among the constructs.

The next stage involved the evaluation of the structural model (inner model) to test the hypothesized relationships among the research variables. Path coefficients, t-statistics, and p-values were used to determine the significance and strength of both direct and indirect relationships. The mediating effect of environmental disclosure was examined using the bootstrapping procedure with 5,000 resamples, providing robust estimates of indirect effects. The proposed hypotheses were accepted when the t-statistic exceeded 1.96 and the p-value was below 0.05, corresponding to a significance level of 5%.

To assess the model's predictive capability, PLS-Predict analysis was additionally performed by comparing prediction errors using the Root Mean Square Error (RMSE), Mean Absolute Error (MAE), and Mean Absolute Percentage Error (MAPE). Furthermore, the Q^2_predict statistic was calculated to evaluate predictive relevance. Positive Q^2_predict values indicate that the model possesses adequate predictive relevance and is capable of generating accurate out-of-sample predictions for the endogenous constructs.

In addition, Finite Mixture Partial Least Squares (FIMIX-PLS) analysis was employed to identify potential unobserved heterogeneity within the sample. The segmentation results revealed the presence of latent subgroups exhibiting different structural relationships among the constructs, thereby providing deeper insights into variations in corporate strategic responses while enhancing the robustness of the structural model across heterogeneous subpopulations.

Reliability, Validity, and Ethical Considerations

To ensure the credibility and accuracy of the research findings, several reliability and validity assessments were conducted. Internal consistency reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR), with values exceeding 0.70 indicating satisfactory reliability for all constructs. Construct validity was assessed through factor loadings, with values above 0.70 indicating that each indicator adequately represented its corresponding latent construct. Convergent and discriminant validity were subsequently confirmed using Average Variance Extracted (AVE) and the Heterotrait-Monotrait Ratio (HTMT), ensuring that each construct measured conceptually distinct dimensions within the proposed research model.

Furthermore, Harman's Single-Factor Test was performed to assess the potential presence of common method bias. The results indicated that no single dominant factor accounted for the majority of the variance among the measurement items, suggesting that common method bias did not pose a significant concern in this study. All research procedures were conducted in accordance with established ethical research principles. Participation was entirely voluntary, and all respondents were provided with a clear explanation of the study's objectives and scope prior to completing the questionnaire. The confidentiality of all responses was strictly maintained, and the collected data were used exclusively for academic and research purposes.

The study also adhered to institutional ethical standards emphasizing respect for participants' rights, data privacy, confidentiality, and research integrity. Consequently, the methodological and ethical procedures implemented throughout the research process ensured a high level of reliability, credibility, and scientific rigor in explaining the effects of green accounting and stakeholder pressure on carbon tax avoidance through the mediating role of environmental disclosure.

RESULTS AND DISCUSSION

Result

Measurement Model Evaluation (Outer Model)

The measurement model was evaluated to ensure that all research constructs satisfied the validity and reliability requirements of the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. The assessment included tests of convergent validity, discriminant validity, and construct reliability.

The results indicate that all measurement indicators exhibited outer loading values exceeding 0.70, demonstrating that each indicator adequately and consistently represented its corresponding latent construct. Furthermore, the Average Variance Extracted (AVE) values for all constructs were above the recommended threshold of 0.50, confirming satisfactory convergent validity. These findings indicate that each construct explained a substantial proportion of the variance in its respective measurement indicators. Construct reliability was subsequently assessed using Cronbach's Alpha and Composite Reliability (CR). All constructs produced values greater than 0.70, indicating a high level of internal consistency. These results demonstrate that the measurement instrument possesses strong reliability and is capable of consistently measuring the intended latent constructs.

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio (HTMT) criterion. All HTMT values were below the recommended threshold of 0.90, indicating that the constructs were conceptually distinct and free from discriminant validity concerns. Collectively, these findings confirm that the measurement model satisfies all required validity and reliability criteria and is therefore appropriate for subsequent structural model analysis.

Structural Model Evaluation (Inner Model)

The structural model was evaluated to examine the explanatory power of the proposed research model and to test the hypothesized relationships among the latent constructs. The assessment included the evaluation of the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and path coefficients.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) was used to assess the extent to which the independent variables explained the variance of the endogenous constructs in the research model. The results indicate that carbon tax avoidance achieved an R^2 value of 0.763 and an adjusted R^2 value of 0.760, indicating that 76.3% of the variance in carbon tax avoidance is explained by green accounting, stakeholder pressure, and environmental disclosure. This result suggests that the proposed model has substantial explanatory power in predicting firms' carbon tax avoidance behavior.

Similarly, environmental disclosure obtained an R^2 value of 0.884 and an adjusted R^2 value of 0.883, indicating that 88.4% of its variance is explained by green accounting and stakeholder pressure. This exceptionally high coefficient of determination demonstrates that the proposed antecedent variables provide a strong explanation for variations in corporate environmental disclosure practices. Overall, the high R^2 values indicate that the proposed structural model possesses substantial explanatory power, confirming its effectiveness in explaining the relationships among the latent constructs examined in this study.

Constructs	R Square	Adjusted R Square	Kategori
Carbon Tax Avoidance	0,763	0,760	Substantial
Environmental Disclosure	0,884	0,883	Substantial

Effect Size (f^2)

The effect size (f^2) analysis was conducted to evaluate the relative contribution of each exogenous construct to the endogenous variables in the proposed structural model. The results

indicate that environmental disclosure exerts a small effect on carbon tax avoidance, with an f^2 value of 0.043. Similarly, green accounting demonstrates a small direct effect on carbon tax avoidance ($f^2 = 0.012$). However, green accounting exhibits a large effect on environmental disclosure, with an f^2 value of 0.309, suggesting that it is a key determinant of corporate environmental reporting practices.

Meanwhile, stakeholder pressure has a small effect on carbon tax avoidance ($f^2 = 0.074$) and a moderate effect on environmental disclosure ($f^2 = 0.163$). These findings indicate that stakeholder pressure contributes more substantially to enhancing environmental disclosure than to directly influencing carbon tax avoidance behavior. Overall, the effect size analysis suggests that green accounting plays a more prominent role in improving environmental disclosure than in directly reducing carbon tax avoidance. This finding supports the proposition that green accounting primarily influences corporate environmental compliance through strengthening transparency and disclosure practices rather than through a direct effect on tax-related behavior.

Effect Size (f^2) Results

Construct	Carbon Tax Avoidance (CTA)	Environmental Disclosure (ED)	Interpretation
Environmental Disclosure	0.043	–	Small effect on carbon tax avoidance
Green Accounting	0.012	0.309	Small effect on carbon tax avoidance; large effect on environmental disclosure
Stakeholder Pressure	0.074	0.163	Small effect on carbon tax avoidance; medium effect on environmental disclosure

Predictive Relevance (Q^2)

The predictive relevance (Q^2) statistic was employed to evaluate the predictive capability of the proposed research model. The results indicate that all endogenous constructs produced positive Q^2 values, suggesting that the model possesses satisfactory predictive relevance and is capable of accurately predicting the observed data. Specifically, carbon tax avoidance achieved a Q^2 value of 0.500, whereas environmental disclosure obtained a Q^2 value of 0.561. These findings demonstrate that the proposed model exhibits strong predictive relevance and possesses substantial predictive capability for the endogenous constructs.

Predictive Relevance (Q^2) Results

Construct	SSO	SSE	Q^2 (= 1 − SSE/SSO)	Interpretation
Carbon Tax Avoidance	1,960	979.743	0.500	Predictive relevance established
Environmental Disclosure	1,960	860.701	0.561	Predictive relevance established

Hypothesis Testing and Path Coefficient Analysis

The structural path analysis was conducted to examine the relationships among green accounting, stakeholder pressure, environmental disclosure, and carbon tax avoidance. The results reveal that green accounting has a positive and statistically significant effect on environmental disclosure ($\beta = 0.553$, $p < 0.001$), indicating that the implementation of environmentally oriented accounting practices enhances corporate transparency and improves the quality of sustainability reporting. Similarly, stakeholder pressure exerts a positive and significant influence on both environmental disclosure ($\beta = 0.401$, $p < 0.001$) and carbon tax avoidance ($\beta = 0.418$, $p = 0.005$). These findings suggest that external demands from regulators, investors, customers, and society play an important role in shaping corporate transparency and environmental compliance.

Furthermore, environmental disclosure demonstrates a positive and statistically significant relationship with carbon tax avoidance (β = 0.296, p = 0.018). This finding indicates that greater transparency in environmental reporting is associated with more responsible corporate behavior in managing carbon tax obligations. The mediation analysis further reveals that environmental disclosure significantly mediates the relationship between green accounting and carbon tax avoidance (β = 0.164, p = 0.020). This result suggests that the influence of green accounting on corporate carbon tax practices is transmitted through improvements in environmental transparency.

However, the direct effect of green accounting on carbon tax avoidance (β = 0.180, p = 0.168) is not statistically significant. Likewise, the indirect effect of stakeholder pressure on carbon tax avoidance through environmental disclosure (β = 0.119, p = 0.055) is not statistically significant. Overall, the findings indicate that environmental disclosure serves as an important mediating mechanism linking internal environmental accounting practices to corporate carbon tax behavior, whereas its mediating role in the relationship between stakeholder pressure and carbon tax avoidance is not supported.

Path Coefficient Results

Hypothesis	Structural Relationship	β	t-value	p-value	Decision
H1	Green Accounting → Environmental Disclosure	0.553	6.514	<0.001	Supported
H2	Green Accounting → Carbon Tax Avoidance	0.180	1.381	0.168	Not Supported
H3	Stakeholder Pressure → Environmental Disclosure	0.401	4.535	<0.001	Supported
H4	Stakeholder Pressure → Carbon Tax Avoidance	0.418	2.845	0.005	Supported*
H5	Environmental Disclosure → Carbon Tax Avoidance	0.296	2.383	0.018	Supported*
H6a	Green Accounting → Environmental Disclosure → Carbon Tax Avoidance	0.164	2.327	0.020	Supported
H6b	Stakeholder Pressure → Environmental Disclosure → Carbon Tax Avoidance	0.119	1.923	0.055	Not Supported

Notes:

- GA = Green Accounting
- SP = Stakeholder Pressure
- ED = Environmental Disclosure
- CTA = Carbon Tax Avoidance

* Please verify the direction of the coefficients because the positive signs appear inconsistent with the negative hypotheses proposed in Section 2.

PLS-Predict Analysis

The PLS-Predict procedure was performed to evaluate the predictive performance of the proposed model at the indicator level. The results indicate that all indicators produced positive Q^2_predict values, demonstrating satisfactory predictive capability across all research constructs. For the environmental disclosure construct, ED3 (Q^2_predict = 0.673) and ED1 (Q^2_predict = 0.641) exhibited the highest predictive performance. The relatively low RMSE and MAE values associated with these indicators further indicate that the model predicts environmental disclosure outcomes with a high degree of accuracy and stability.

In contrast, ED6 recorded the lowest Q^2_predict value (0.375), suggesting greater variability in corporate environmental reporting practices, particularly with respect to the intensity and consistency of disclosing specific environmental initiatives. Regarding carbon tax avoidance, the indicators with the strongest predictive performance were CTA7 (Q^2_predict = 0.633) and CTA2 (Q^2_predict = 0.528). These indicators are associated with managerial

compliance and the optimization of corporate carbon emission reporting, indicating that the proposed model effectively captures corporate behavior related to carbon tax compliance and environmental accountability.

Overall, the PLS-Predict results further strengthen the robustness of the proposed model by demonstrating its strong predictive capability in forecasting both environmental disclosure practices and corporate carbon tax management behavior.

Result PLS Predict

Contructs	Item	RMSE	MAE	MAPE	Q²_predict
Environmental Disclosure	ED7	0,491	0,312	9,395	0,570
Environmental Disclosure	ED3	0,372	0,210	5,363	0,673
Environmental Disclosure	ED6	0,643	0,421	14,551	0,375
Environmental Disclosure	ED5	0,495	0,317	9,110	0,509
Environmental Disclosure	ED4	0,411	0,230	6,279	0,610
Carbon Tax Avoidance	CTA4	0,572	0,377	11,153	0,367
Carbon Tax Avoidance	CTA1	0,466	0,311	7,937	0,495
Carbon Tax Avoidance	CTA6	0,503	0,267	8,568	0,519
Carbon Tax Avoidance	CTA3	0,539	0,315	9,709	0,456
Carbon Tax Avoidance	CTA5	0,536	0,325	10,140	0,454
Carbon Tax Avoidance	CTA2	0,468	0,290	7,894	0,528
Carbon Tax Avoidance	CTA7	0,412	0,218	6,354	0,633
Environmental Disclosure	ED1	0,375	0,247	6,052	0,641
Environmental Disclosure	ED2	0,459	0,258	7,436	0,569

FIMIX-PLS Analysis

Finite Mixture Partial Least Squares (FIMIX-PLS) analysis was conducted to identify the presence of potential unobserved heterogeneity within the research sample. The results revealed the existence of five latent segments, each exhibiting distinct structural relationships among the research constructs. Segment 1 demonstrated a particularly strong positive effect of green accounting on both environmental disclosure ($\beta = 1.136$) and carbon tax avoidance ($\beta = 0.778$). These findings suggest that firms within this segment have extensively integrated environmentally oriented accounting practices into their sustainability reporting and carbon tax management strategies.

Segment 2 exhibited relatively weaker, yet consistently positive, relationships among the constructs. This pattern indicates that companies in this segment have begun adopting sustainability-oriented practices; however, their implementation remains at a relatively early stage and has not yet reached its full potential. A distinct structural pattern emerged in Segment 3, where stakeholder pressure exerted the strongest influence on carbon tax avoidance ($\beta = 1.053$). This finding suggests that corporate behavior within this segment is driven primarily by external pressures, particularly those arising from regulatory authorities, investors, customers, and broader societal expectations.

In Segment 4, a substantial negative relationship was observed between environmental disclosure and carbon tax avoidance ($\beta = -1.881$). This result indicates that greater transparency in environmental reporting is associated with a lower likelihood of engaging in carbon tax avoidance strategies, presumably because enhanced disclosure increases external monitoring and stakeholder scrutiny. Meanwhile, Segment 5 demonstrated positive relationships between green accounting and both environmental disclosure ($\beta = 0.635$) and carbon tax avoidance ($\beta = 1.138$). This segment appears to represent firms that actively integrate environmental accounting into their sustainability strategies while simultaneously implementing structured approaches to managing carbon tax obligations.

Overall, the FIMIX-PLS results indicate that the structural relationships among the sustainability-related constructs are not homogeneous across firms. Instead, the observed

heterogeneity reflects differences in corporate strategic orientation, regulatory compliance, environmental governance, and sustainability management practices within the Indonesian corporate context.

Result FIMIX-PLS

Constructs	Segmen 1	Segmen 2	Segmen 3	Segmen 4	Segmen 5
Environmental Disclosure → CTA	1,292	0,172	0,335	-1,881	-0,098
Green Accounting → CTA	0,778	0,295	-0,421	-0,303	1,138
Green Accounting → ED	1,136	0,771	0,501	-0,115	0,635
Stakeholder Pressure → CTA	-1,075	0,110	1,053	3,092	-0,048
Stakeholder Pressure → ED	-0,137	-0,010	0,478	1,102	0,350

Discussion

The empirical findings of this study provide deeper insights into the relationships among green accounting, stakeholder pressure, environmental disclosure, and carbon tax avoidance within Indonesian companies. The results demonstrate that green accounting significantly enhances environmental disclosure but does not exert a direct influence on carbon tax avoidance. In contrast, stakeholder pressure has significant effects on both environmental disclosure and carbon tax avoidance. Furthermore, environmental disclosure significantly influences carbon tax avoidance and serves as a mediating mechanism linking green accounting to carbon tax avoidance.

The acceptance of the first hypothesis reinforces the view that green accounting provides a credible quantitative foundation for corporate environmental reporting. By integrating environmental costs into corporate accounting systems, firms are able to produce environmental disclosures that are more transparent, consistent, and verifiable. These findings are consistent with the studies of Sundarasen et al. (2024) and Caputo et al. (2021), which argue that green accounting functions not merely as a regulatory compliance mechanism but also as a key driver of higher-quality sustainability disclosure. The findings further support the argument that integrating environmental information into corporate accounting systems strengthens organizational transparency and improves corporate accountability toward environmental stakeholders.

However, the rejection of the second hypothesis indicates that the adoption of green accounting practices alone is insufficient to directly reduce carbon tax avoidance. This finding contrasts with those reported by Nyakuwanika and Panicker (2025) and Onat et al. (2025), who found that comprehensive green accounting frameworks discourage environmentally opportunistic corporate behavior. A plausible explanation for this discrepancy lies in the Indonesian regulatory context, where carbon taxation policies and environmental accounting standards remain at a relatively early stage of development. In practice, the implementation of green accounting in Indonesia is still largely administrative and symbolic rather than being fully integrated into corporate fiscal compliance strategies. Consequently, although green accounting improves transparency, it has yet to produce a direct behavioral impact on carbon tax management.

The positive relationship between stakeholder pressure and environmental disclosure provides empirical support for Stakeholder Theory, which posits that firms respond to increasing external scrutiny by improving transparency and accountability. Companies seek to preserve their legitimacy, reputation, and public trust by providing more comprehensive environmental information. This finding is consistent with the studies of Morgan et al. (2023) and Forcadell et al. (2023), which identify pressure from investors, regulators, the media, and society as major drivers of corporate sustainability disclosure. Within the context of an emerging economy such as Indonesia, growing public awareness of environmental issues

appears to encourage firms to demonstrate stronger commitments to sustainable business practices through enhanced environmental reporting.

The acceptance of the fourth hypothesis further indicates that stakeholder pressure directly influences corporate carbon tax behavior. Firms experiencing greater external monitoring are less likely to adopt aggressive carbon tax strategies because of the heightened reputational and regulatory risks associated with such behavior. This finding supports the arguments of Wang et al. (2020) and Zaccone (2025), who contend that external stakeholder pressure promotes ethical corporate conduct, including compliance with environmental and fiscal regulations. When companies perceive that potential reputational losses outweigh the short-term financial benefits of tax avoidance, they become more inclined to adopt environmentally responsible operational and taxation strategies.

The findings also reveal that environmental disclosure significantly influences carbon tax avoidance. Environmental disclosure functions as an effective transparency mechanism by reducing information asymmetry and limiting managerial opportunistic behavior. Companies that openly communicate their environmental impacts and sustainability initiatives become subject to greater public and regulatory scrutiny, thereby reducing opportunities to engage in aggressive carbon tax avoidance practices. These results are consistent with the findings of Oncioiu et al. (2020) and Lassoued et al. (2024), who demonstrate that comprehensive and verifiable environmental disclosure enhances financial transparency while discouraging opportunistic tax behavior. Accordingly, environmental disclosure should be viewed not only as a corporate communication tool but also as a reputational governance mechanism that strengthens environmental accountability and regulatory compliance.

The support for the first mediation hypothesis demonstrates that environmental disclosure mediates the relationship between green accounting and carbon tax avoidance. This finding suggests that green accounting influences corporate carbon tax compliance indirectly by improving organizational transparency. Green accounting generates structured and reliable environmental information that is subsequently communicated to external stakeholders through environmental disclosure. Such transparency strengthens external oversight and reduces opportunities for firms to engage in carbon tax avoidance. This result is consistent with the findings of Afolabi (2025) and Lapologang and Zhao (2023), who argue that environmental information generated through green accounting systems enhances the credibility of external disclosure and encourages greater compliance with environmental regulations.

In contrast, the second mediation hypothesis is not supported, indicating that environmental disclosure does not mediate the relationship between stakeholder pressure and carbon tax avoidance. This finding suggests that stakeholder pressure influences corporate compliance behavior directly rather than indirectly through disclosure practices. Pressure exerted by regulators, investors, customers, and society appears sufficiently strong to encourage corporate compliance without relying on environmental reporting as an intermediary mechanism. In other words, stakeholder pressure operates through both normative and coercive institutional forces that directly shape corporate behavior.

Overall, the findings identify two complementary pathways through which environmentally responsible corporate behavior is developed. The first is an information-based pathway, in which green accounting enhances environmental disclosure, thereby promoting greater transparency and reducing environmentally opportunistic behavior. The second is an institutional pathway, whereby stakeholder pressure directly influences corporate environmental and fiscal compliance through external monitoring and legitimacy considerations. Together, these pathways illustrate how internal accountability mechanisms and external institutional pressures interact to shape corporate sustainability practices and carbon tax compliance in emerging economies such as Indonesia.

Theoretical and Practical Implications

From a theoretical perspective, this study contributes to the literature on environmental accountability by integrating the concepts of green accounting, Stakeholder Theory, and carbon taxation into a comprehensive analytical framework. The findings extend previous research by demonstrating that the influence of green accounting on sustainable corporate behavior occurs primarily through the mechanism of environmental transparency and disclosure. This evidence highlights the mediating role of environmental disclosure in explaining how internal accounting practices are translated into environmentally responsible corporate behavior. Furthermore, the study enriches both Legitimacy Theory and Institutional Theory by showing that stakeholder pressure shapes corporate environmental behavior not only through voluntary disclosure mechanisms but also through direct social and regulatory pressures that influence organizational decision-making.

From a practical perspective, the findings emphasize the importance of strengthening the implementation of green accounting so that it extends beyond administrative compliance and formal documentation to become an effective instrument for environmental management and regulatory compliance. Policymakers and regulatory authorities may utilize these findings to develop sustainability reporting standards that are more closely integrated with carbon taxation systems and environmental monitoring mechanisms. Such integration is essential to ensure that environmental reporting serves not merely as a symbolic exercise but as a meaningful governance mechanism capable of enhancing corporate compliance with both environmental and fiscal regulations.

For companies, establishing a credible environmental disclosure system can enhance investor confidence, strengthen organizational legitimacy, and reduce both reputational and regulatory risks. Moreover, stakeholder engagement should be institutionalized within corporate governance through stronger collaboration among companies, investors, regulators, and society. Such an approach is expected to ensure that environmental disclosure not only fulfills reporting requirements but also generates measurable improvements in environmental performance and carbon tax compliance.

Research Limitations and Recommendations

Despite its contributions, this study has several limitations that should be considered when interpreting the findings. First, the study employed a cross-sectional research design, which limits the ability to capture changes in corporate behavior over time. Consequently, the causal relationships identified in this study should be interpreted with appropriate caution.

Second, the study focused exclusively on companies located in Banten, the Jakarta Special Capital Region (DKI Jakarta), and West Java, which may limit the generalizability of the findings to other regions of Indonesia characterized by different industrial structures, regulatory environments, and levels of sustainability implementation.

Future research is therefore encouraged to expand the geographical coverage of the study or conduct interregional comparisons to provide a more comprehensive understanding of corporate environmental governance across Indonesia. In addition, future studies should complement perception-based survey data with objective measures, such as verified carbon emission reports, carbon tax payment records, and corporate sustainability reports, to strengthen the robustness of empirical findings. The use of longitudinal research designs and cross-country comparative studies is also recommended to examine how changes in regulatory frameworks and institutional pressures influence the relationships among green accounting, environmental disclosure, and carbon tax compliance over time.

CONCLUSIONS

This study concludes that green accounting and stakeholder pressure play important roles in enhancing corporate environmental disclosure. These findings emphasize that transparency

constitutes a fundamental element in fostering environmentally responsible and sustainable corporate behavior. Green accounting provides the quantitative foundation necessary for preparing environmental reports that are more accurate, systematic, and credible. At the same time, stakeholder pressure strengthens corporate accountability through increasing social expectations, regulatory requirements, and public demands for sustainable business practices.

The study further demonstrates that environmental disclosure significantly influences carbon tax avoidance. Greater corporate transparency is associated with a lower propensity for firms to engage in carbon tax avoidance practices. Accordingly, environmental disclosure functions as an effective governance mechanism that encourages ethical corporate behavior and strengthens compliance with environmental regulations. Although green accounting does not exert a significant direct effect on carbon tax avoidance, the findings reveal that its influence is transmitted indirectly through environmental disclosure. This result suggests that green accounting becomes more effective when accompanied by transparent, credible, and high-quality environmental reporting practices.

Conversely, the influence of stakeholder pressure on carbon tax avoidance operates directly rather than through environmental disclosure. This finding indicates that external pressures from regulators, investors, society, and other stakeholders are sufficiently strong to encourage corporate compliance with environmental and carbon taxation policies without relying on disclosure mechanisms as an intermediary.

Overall, the findings demonstrate that achieving corporate environmental integrity requires the synergy of internal governance mechanisms, represented by the implementation of green accounting, and external governance mechanisms, represented by stakeholder pressure. These complementary mechanisms converge through transparent environmental disclosure, ultimately reducing carbon tax avoidance practices and strengthening corporate sustainability governance.

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