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Governance Characteristics and Tax Avoidance: Evidence from Indonesia

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General Background: Tax avoidance is a crucial issue in corporate governance and public finance as it directly affects government revenue and corporate legitimacy. **Specific Background:** In the energy and raw materials sector, tax avoidance is a growing concern due to the size of companies' asset bases, the complexity of their operations, and their high social and environmental exposure, which makes internal governance factors highly relevant in explaining tax avoidance behaviour. **Knowledge Gap:** Previous research on tax avoidance in Indonesia has yielded mixed results, as most studies have analysed corporate characteristics in isolation and have not focused sufficiently on sector-specific conditions, particularly in the energy and raw materials sectors. **Objective:** This study examines the influence of corporate social responsibility (CSR), gender diversity and firm size on tax avoidance, both partially and simultaneously. **Method:** This study employs panel data regression analysis using secondary data sourced from the annual and sustainability reports of energy and raw materials companies listed on the Indonesia Stock Exchange for the years 2022–2024. **Results:** An R^2 value of 0.944 indicates that the research model is able to explain tax avoidance to a significant extent. **Novelty:** This study was conducted following the enactment of the HPP Act in Indonesia; given this issue, it is believed that more accurate information is required regarding the latest measures relating to tax avoidance. **Implications:** The findings can serve as input for various stakeholders, such as the government, companies and investors, in promoting more transparent tax practices and strengthening corporate governance.

Keywords: Corporate Social Responsibility, Gender Diversity, Firm Size, Tax Avoidance, Energy Sector, Basic Materials Sector.

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INTRODUCTION

Taxation is the primary instrument used by the state to finance development, as well as a regulatory tool to maintain economic stability and promote equitable prosperity. Tax revenue has consistently been the primary source of state revenue, accounting for more than 70 per cent of total government revenue, and plays a crucial role in maintaining long-term fiscal stability. Despite its importance, tax revenue realisation in recent years has shown an upward yet unstable trend. In 2024, for example, government tax revenue failed to meet the set target (Kementerian Keuangan Republik Indonesia, 2024). Under such circumstances, tax avoidance becomes an analytically important issue, as it directly affects fiscal sustainability and reflects the extent of managerial discretion in responding to regulatory and governance pressures. Indonesia's low tax-to-GDP ratio compared with other countries reinforces the assumption that there remains untapped revenue potential. In this context, tax planning becomes a crucial issue, as it relates to companies' contributions to state revenue (OECD, 2024; Rahman & Leqi, 2024).

There remain significant concerns regarding tax avoidance in Indonesia, which is a hot topic of discussion, particularly in sectors with substantial assets and complex operational activities. The energy and raw materials sectors are prime examples, as some companies are seeing an increase in revenue—which could be described as significant—without making adequate tax payments. There are even companies that have seen a reduction in their tax burden despite an increase in turnover. At PT Wintermar Offshore Marine Tbk., the company's revenue rose by around 16 per cent, from Rp 964.3 billion in 2022 to Rp 1.12 trillion in 2023; however, its tax burden fell sharply from Rp 1.35 trillion to Rp 821 million (Kementerian Keuangan Republik Indonesia, 2024). This discrepancy may indicate that the company is aggressively utilising tax planning strategies to minimise its tax burden within the legal framework (Athaya & Vizandra, 2025). Companies can reduce their tax burden through various legal arrangements, including transfer pricing practices, profit allocation amongst affiliated entities, and other tax planning strategies permitted by applicable regulations. Such practices have prompted researchers to examine the factors that may influence corporate tax avoidance decisions (Sholikah & Andriani, 2022).

Tax avoidance itself is influenced by various internal and external factors within a company. Previous studies have identified several key aspects that determine tax avoidance. As demonstrated by (Azahra & Handayani, 2023), some of these findings have not shown consistency. Most research suggests that companies with a strong commitment to CSR tend to engage in tax avoidance more frequently or adopt tax avoidance strategies; however, other studies have shown the opposite result (Susanto & Veronica, 2022). This striking discrepancy indicates a relationship between CSR and tax avoidance efforts, which may be linked to the specific conditions of the company and the industry in question.

Similar inconsistencies have been found in research examining gender diversity. Women's participation on boards of directors has been linked to more prudent decision-making and stricter, more careful oversight (Sulistyawati & Rahmawati, 2024). A number of international studies support this view by showing that gender diversity can curb aggressive tax avoidance practices (Mkadmi & Ali, 2024; Jarboui *et al*., 2020). However, there are also many studies that have found the opposite result or even no significant effect (Koay & Sapiei 2025; Kalbuana *et al*., 2023). This inconsistency raises the question of whether the impact of gender diversity depends on industry characteristics, cultural context, or specific governance structures. Consequently, the energy and raw materials sectors—which are high-risk, capital-intensive and involve large-scale transactions—provide a crucial context for re-examining the impact of gender diversity on tax avoidance.

In addition to CSR and gender diversity, firm size is also a variable that, in theory, can either encourage or hinder tax avoidance. Large firms possess more comprehensive resources, including access to qualified tax consultants, thereby enabling more optimal tax planning (Rinaldi *et al*., 2025). However, on the other hand, large firms are subject to stricter scrutiny from the public, regulators and the media; consequently, excessive tax avoidance practices can pose reputational risks that are detrimental to the firm (Sandag *et al*., 2022). These differing conditions make firm size a variable yielding varied empirical findings, thus requiring further testing.

This makes it one of the key drivers of the economy, as it endows this sector with characteristics that differ from other sectors, including participation linked to high capital requirements, intensive regulatory control, an export-market orientation, and involvement in cross-border transactions (Nirwasita *et al*., 2024). This situation may present opportunities for companies with significant potential to engage in tax avoidance, through measures such as setting transfer prices in cross-border transactions, diverting revenue via affiliated entities in low-tax jurisdictions, and applying price adjustments and product categorisation to reduce their tax burden (Putri *et al*., 2024) and (Alexander, 2024). Several cases illustrate how these practices occur. For example, PT Adaro Energy Tbk is alleged to have shifted profits through its subsidiary in Singapore, whilst PT Toba Pulp Lestari is suspected of manipulating the classification of pulp exports. These cases demonstrate that tax avoidance in this sector has the potential to cause significant losses to state revenue (Lestari *et al*., 2025; Rohima *et al*., 2023; Fasita *et al*., 2022). In various recent studies, companies have exploited jurisdictional differences, weaknesses in international regulations, and corporate group structures to reduce their tax burden without directly breaching the law (Lestari *et al*., 2024).

A review of past research indicates that studies on tax avoidance behaviour in Indonesia have predominantly focused on the manufacturing, banking and property sectors; conversely, research conducted in the energy and raw materials sectors remains limited, particularly in terms of incorporating governance variables as well as consistent sustainable business practices and corporate social responsibility relating to gender diversity. Furthermore, the majority of previous studies used an observation period prior to the enactment of the Tax Harmonisation Act (Republic of Indonesia, 2021).

In practice, the Tax Harmonisation Act (HPP) has not brought about major changes to corporate income tax policy. Rather, the HPP Act reinforces ongoing tax reforms through stricter oversight, adjustments to fiscal incentives, and increased transparency. Consequently, the period following the implementation of the HPP Act remains relevant for examining corporate behaviour, particularly within a relatively stable tax policy environment that is increasingly influenced by pressures regarding legitimacy and governance expectations, especially in strategic sectors (Directorate General of Taxes, 2022).

Based on a synthesis of previous empirical findings and phenomena observed in the energy and raw materials sectors, this study identifies two key research gaps. From an empirical perspective, existing studies in these sectors remain relatively limited and have not yet fully incorporated ESG-related variables, particularly corporate social responsibility (CSR) and gender diversity, despite these sectors' significant economic and fiscal importance. From a contextual perspective, research examining the determinants of tax avoidance in capital-intensive, export-oriented and highly regulated industries remains scarce, particularly when using recent observation periods. The 2022–2024 period reflects current industrial conditions and a phase of tax policy consolidation following the implementation of the Tax Harmonisation Act, rather than a period of structural tax reform.

From an academic perspective, this study aims to expand theories of legitimacy and agency by demonstrating how legitimacy pressures, reflected through CSR activities, as well as governance mechanisms such as gender diversity, influence corporate tax avoidance behaviour in highly regulated and capital-intensive industries. Rather than merely confirming the general relevance of these theories, this study demonstrates that sector-specific characteristics play a crucial role in shaping how legitimacy and agency mechanisms operate in practice. Consequently, this study examines the influence of corporate social responsibility, gender diversity and firm size on tax avoidance amongst energy and raw materials companies listed on the Indonesia Stock Exchange during the period 2022–2024.

This study aims to provide a more detailed analysis and to uncover evidence from previous studies regarding the limitations within the Indonesian context. The findings of this study are expected to contribute to the literature on corporate tax avoidance and provide valuable insights for policymakers and regulators, thereby promoting better tax transparency and strengthening strategic industry management practices.

As stated by (Christiawan, 2021), corporate responsibility through CSR (Corporate Social Responsibility) clearly illustrates a company's efforts to achieve its objectives by aligning its operations with the social values prevalent in society. From the perspective of legitimacy theory, as emphasised by (Suchman, 1995), organisations seek to maintain public trust. Tax payments are increasingly viewed by stakeholders as a form of corporate social contribution. Consequently, companies with higher levels of CSR engagement are expected to avoid aggressive tax strategies, as such actions can undermine corporate legitimacy and stakeholder trust. This has implications for companies actively engaged in tax avoidance, which will ultimately erode their legitimacy (Wulandari *et al*., 2022). A number of empirical studies have demonstrated a negative relationship between CSR and tax avoidance (Chouaibi, 2022; Ding *et al*, 2022; Rakia *et al*, 2022; Azahra & Handayani, 2023), indicating that companies with higher CSR performance tend to adopt more compliant tax practices due to ethical considerations and concerns about reputational damage. Consequently, a stronger focus on CSR is expected to reduce corporate tax avoidance. As a result, CSR is predicted to have a negative relationship with tax avoidance.

H1: Corporate social responsibility (CSR) has a negative effect on tax avoidance.

Gender diversity, reflected in the presence of women on the board of directors or the board of commissioners, is often viewed as an important governance mechanism that can enhance the effectiveness of corporate oversight (Laili & Tjaraka, 2024). From the perspective of agency theory (Jensen & Meckling, 1976), effective monitoring can help reduce conflicts of interest between principals and agents. In this context, the involvement of women in decision-making roles is expected to strengthen oversight functions within companies, as female directors are generally associated with higher risk aversion, ethical sensitivity, and stricter scrutiny of managerial decisions. Empirical findings show mixed results, with some studies reporting a negative relationship between gender diversity and tax avoidance (Mkadmi & Ali, 2024; Septiani *et al*., 2022; Budiana & Kusuma, 2022), suggesting that a higher proportion of women can enhance governance integrity and reduce tax aggressiveness. Based on this theory and empirical evidence, gender diversity is expected to reduce corporate tax avoidance practices.

H2: Gender diversity has a negative effect on tax avoidance.

Company size reflects the scale of a firm's operations, its resource capacity, and the complexity of its organisational structure. From the perspective of agency theory (Jensen & Meckling, 1976), larger firms tend to experience greater information asymmetry between principals and agents, which can reduce the effectiveness of oversight and create greater scope for opportunistic managerial behaviour. In highly capital-intensive industries, large firms typically manage significant fixed assets, engage in long-term investment activities, and operate within a complex regulatory framework. These conditions can afford management greater flexibility to implement more sophisticated tax planning strategies. Furthermore, large firms possess greater financial resources and access to professional tax expertise, enabling them to capitalise more effectively on available tax-saving opportunities. Extensive empirical studies demonstrate a positive relationship between firm size and tax avoidance

(Hossain *et al*., 2025; Sandag *et al*, 2022; Eka *et al*., 2024), consistently finding that large firms have a greater capacity to manage tax avoidance strategies. Consequently, large firms are expected to exhibit higher levels of tax avoidance than small firms. Consequently, firm size is expected to have a positive effect on tax avoidance.

H3: Firm size has a positive influence on tax avoidance.

At the same time, CSR, gender diversity and firm size have the potential to influence the level of tax avoidance through the mechanisms of legitimacy, oversight and firm capacity, whereby legitimacy theory (Suchman, 1995) states that firms with strong CSR tend to avoid actions that could reduce social legitimacy, such as tax avoidance, whilst agency theory (Jensen & Meckling, 1976) explains that gender diversity strengthens monitoring functions, thereby curbing opportunistic behaviour by management. Thus, these three variables are expected to collectively influence the level of tax avoidance by firms. The combination of factors related to legitimacy (CSR) and factors related to governance (gender diversity and firm size) is expected to jointly influence firms' tax decisions. Legitimacy theory explains that firms seek social acceptance through responsible behaviour, whilst agency theory emphasises the importance of oversight mechanisms and organisational characteristics in limiting managerial opportunism. Therefore, these variables are expected to collectively explain variations in tax avoidance practices. (Sulistyawati & Rahmawati, 2024) found that governance characteristics contribute to explaining corporate tax avoidance behaviour, whilst (Alawiyah & Wulandari, 2024; Pavlou *et al*., 2025; Nugroho & Ernandi, 2025) demonstrated that governance mechanisms and firm characteristics collectively influence tax-related decisions. These findings provide empirical support for the combined application of legitimacy theory and agency theory in explaining tax avoidance.

H4: Corporate social responsibility (CSR), gender diversity and firm size jointly influence tax avoidance.

Based on the theoretical arguments and hypothesis development, the conceptual framework of this study is presented in Figure 1.

[Figure 1. Research Model]

METHODS

This study utilises secondary data obtained from the annual reports and sustainability reports of companies in the energy and raw materials sectors listed on the Indonesia Stock Exchange for the period 2022–2024. The data were collected from financial statements, sustainability reports and information on boards of directors, accessed via the official websites of these companies and the Indonesia Stock Exchange. The sample selection process is presented in Table 1. Using purposive sampling, this study obtained a final sample of 35 companies, resulting in 105 company-year observations after excluding companies with incomplete data or those delisted during the study period. This study did not involve primary respondents, as it relied entirely on publicly available secondary data; therefore, no respondent selection or recruitment process was carried out.

[Table 1. Sample Selection Criteria]

The dependent variable in this study is tax avoidance, measured using the Cash Effective Tax Rate (CETR) as an indicator of the level of corporate tax avoidance (Nurdin & Nadia, 2022). The CETR is calculated as the ratio of current tax expense to pre-tax cash flow, whereby a lower CETR value reflects a higher level of tax avoidance (Rahmayani *et al*., 2023). The CETR was chosen because it measures actual cash-based tax payments, making it more suitable for reflecting actual tax avoidance behaviour than accrual-based measures such as the Effective Tax Rate (ETR).

$$\text{CETR}= \frac{\text{Cash Tax Paid}}{\text{Pretax Income}}$$

Corporate social responsibility (CSR) was used as the first independent variable in this study and was measured based on the disclosure framework of the 2021 GRI Standards. This measure is calculated by comparing the number of CSR items disclosed with the number of relevant indicators, thereby producing an index score that reflects the company's level of transparency and commitment to sustainability (Maryanti & Fithri, 2017).

$$\text{CSR}= \frac{\text{Disclosed Items}}{\text{Total Disclosure Items}}$$

The second independent variable in this study is gender diversity, which is measured by the proportion of women on the board of directors. This measure is calculated as the ratio of the number of female board members to the total number of board members, thereby indicating the extent of women's participation in the company's decision-making structure (Jarboui *et al*., 2020).

$$\text{GD}= \frac{\text{Number of Female Directors}}{\text{Total Directors}}$$

The next independent variable is firm size, which is proxied by the natural logarithm of total assets. The use of the logarithm is intended to stabilise data variation and represent firm size more proportionally in the regression model (Handini & Susilo, 2025).

$$\text{FS}= \text{Ln (Total Assets)}$$

This study utilises data from annual reports and sustainability reports published on the companies' official websites and on the Indonesia Stock Exchange. To ensure accuracy and consistency, the data was cross-checked against various sources and verified for completeness before being included in the final dataset.

This analysis employs panel data regression to capture inter-firm differences and changes over time. Compared with using only a cross-sectional or time-series approach, this method offers better control over unobserved firm-specific factors. This is particularly important when companies exhibit significant differences in terms of operational structure and scale. Therefore, panel data regression is considered the most appropriate method for this study.

Model selection was carried out using the Chow test, the Hausman test and the Lagrange Multiplier test. In addition, tests of classical assumptions were conducted, including tests for normality, multicollinearity, heteroscedasticity and autocorrelation, to ensure that the estimated model met the BLUE (Best Linear Unbiased Estimator) criteria. Hypothesis testing was carried out using the t-test to assess the partial effects of the independent variables and the F-test to evaluate the simultaneous effects of these variables at a 5 per cent significance level. The coefficient of determination (R^2) was used to assess the proportion of variation in tax avoidance explained by the model. All data processing and estimation were carried out using EViews version 12. The panel regression model used in this study is formulated as follows:

$$\gamma=\alpha_i+\beta_1X_{1it}+\beta_2X_{2it}+\beta_3X_{3it}+\varepsilon_{it}$$

Explanation:
γ_{it} = Tax Avoidance of company i in period t
α_i = intercept that differs for each company
$\beta_1, \beta_2, \beta_1$= regression coefficients
X_{1it} = corporate social responsibility
X_{2it} = gender diversity
X_{3it} = firm size
ε_{it} = error term

RESULTS AND DISCUSSION

The results of the descriptive statistical analysis for all research variables are presented in Table 2. The mean CSR score is 0.722, with a fairly wide range, illustrating the variation in levels of sustainability disclosure amongst companies. Gender diversity has a mean value of 0.102 with a median of 0, indicating that the majority of companies do not have any women on their boards of directors. Company size has a mean value of 30.589 with relatively little variation, suggesting that the sample is fairly homogeneous in terms of company size. Meanwhile, the CETR value, as a proxy for tax avoidance, has a mean of 0.587 and a standard deviation of 0.806, reflecting considerable variation in levels of tax compliance across companies. The variation across all these variables serves as the basis for the conclusion that each company possesses distinct characteristics and tax behaviour, which is relevant for further analysis in panel regression.

[Table 2. Results of Descriptive Statistical Analysis]

The consistency of the CSR findings with previous studies can be attributed to the regulatory environment following the implementation of the Tax Harmonisation Act, which has enhanced transparency and oversight of corporate tax behaviour. Conversely, the differing findings regarding gender diversity and firm size, when compared with some previous studies, are likely influenced by the unique characteristics of these sectors, such as high capital intensity, a strong export orientation, and strict regulatory control. Furthermore, variations in the study periods and differences in regulatory frameworks across studies may also help explain why empirical results in this field are not always consistent.

A panel regression model was selected following a series of tests. The Chow and Hausman tests, as shown in Table 3 and Table 4, indicate that the Fixed Effects Model (FEM) is the most appropriate model. Furthermore, the results of the Lagrange Multiplier test in Table 5 support the use of panel data estimation. Prior to conducting the regression analysis, tests of classical assumptions were carried out. As reported in Table 7, there is no indication of multicollinearity amongst the independent variables. Furthermore, Table 8 shows that the model does not suffer from heteroscedasticity. These results indicate that the model satisfies the assumptions required for regression analysis. The regression results are presented in Table 6, with the equation as follows:

$$\gamma=1.612-2.024\chi_1-0.345\chi_2+0.015\chi_3$$

[Table 3. Chow Test]

[Table 4. Hausman Test]

[Table 5. Lagrange Multiplier Test]

[Table 6. Results of Panel Data Regression Analysis]

[Table 7. Multicollinearity Test]

[Table 8. Heteroscedasticity Test]

The results of the Fixed Effects Model regression show that CSR has a negative coefficient of –2.024. This finding indicates that an increase in CSR disclosure is followed by a decrease in the CETR value; thus, companies that are more active in reporting on sustainability aspects tend to have lower levels of tax avoidance. Therefore, the first hypothesis (H1), which states that CSR has a negative effect on tax avoidance, is accepted. Theoretically, this finding is consistent with legitimacy theory, which states that companies seek to maintain public legitimacy through actions that conform to social norms, including tax compliance (Suchman, 1995). Companies with extensive CSR disclosures tend to prioritise transparency and accountability; consequently, they are less willing to adopt aggressive tax avoidance strategies that could threaten their legitimacy and reputation. These findings are consistent with studies by (Chouaibi *et al*., 2022; Hoang *et al*., 2024; Mkadmi & Ali, 2024), which indicate that firms with a stronger commitment to CSR are less likely to engage in tax avoidance practices. Therefore, the negative relationship found in this study is theoretically consistent with the expectation that socially responsible companies demonstrate higher levels of tax compliance.

As shown in Table 9, gender diversity has a negative coefficient of –0.345, indicating that the presence of female directors is associated with a lower propensity for tax avoidance. However, the statistical effect is relatively weak and not significant, suggesting that this relationship cannot be empirically confirmed. Consequently, the second hypothesis (H2), which states that gender diversity has a negative impact on tax avoidance, is rejected. From an agency theory perspective, gender diversity is expected to strengthen the effectiveness of oversight and reduce managerial opportunism, as female directors are generally associated with higher risk aversion, ethical sensitivity, and stricter oversight of managerial decisions (Jensen & Meckling, 1976). However, the non-significant results suggest that the supervisory role predicted by agency theory may not function effectively whilst female representation remains limited. This situation can be explained by data showing that the majority of companies still have a very small proportion of women, meaning their contribution to the supervisory process is not yet optimal. These findings are consistent with several studies by (Jarboui *et al*., 2020; Budiana & Kusuma, 2022; Koay & Sapiei, 2025), which found that the impact of gender diversity is highly dependent on the level of women's involvement and their strategic positions within corporate governance structures. Consequently, although the direction of the relationship remains negative as predicted by theory, the effect is not strong enough to significantly influence tax avoidance behaviour in the companies observed.

Company size has a positive coefficient of 0.015, suggesting a tendency for companies with larger assets to have a greater likelihood of engaging in tax management. However, this pattern is not sufficiently robust based on the data; consequently, variations in company size are not a determining factor in tax avoidance behaviour. Thus, the third hypothesis (H3), which assumes that company size influences tax avoidance, is rejected. From an agency theory perspective, larger firms generally face greater organisational complexity and higher information asymmetry, which may create more opportunities for managers to engage in sophisticated tax planning activities (Jensen & Meckling, 1976). Nevertheless, the non-significant results suggest that these advantages may be offset by stricter regulatory oversight, public scrutiny and reputational concerns. The data tabulation shows that both large and small firms exhibit varying tendencies towards tax avoidance, indicating that firm size is not the sole significant determinant of tax practices. These findings are consistent with the research (Wirianata *et al*., 2024) and (Mu'minah *et al*., 2023), which state that high levels of public scrutiny and strict regulation of large firms can limit the scope for tax avoidance. Therefore, the theoretical expectation of a positive relationship is not fully supported in the context of energy and raw materials firms.

[Table 9. t-test]

The coefficient of determination in Table 11 shows an R-squared value of 0.964, indicating that the model is capable of explaining 96.40% of the variation in tax avoidance through a combination of CSR, gender diversity and firm size. The adjusted R-squared value, which remains high, also confirms that the model possesses strong explanatory power, meaning that the estimation results can be interpreted with a good degree of reliability.

[Table 11. Coefficient of Determination (R^2)]

From a practical perspective, these results suggest that firms in the energy and raw materials sectors that engage in more extensive CSR disclosure tend to adopt more cautious tax strategies. This trend signals a stronger emphasis on regulatory compliance and greater awareness of reputational risks. Given that these industries are highly capital-intensive and subject to strict government oversight, firms appear to align their tax decisions with sustainability reporting to maintain legitimacy and ensure long-term stability. Meanwhile, the limited impact of gender diversity suggests that governance mechanisms in these sectors remain dominated by structural and regulatory factors, rather than solely by the composition of the board of directors.

The results of the F-test presented in Table 10 show that CSR, gender diversity and firm size collectively influence the level of tax avoidance. These findings illustrate that corporate tax behaviour is the result of the interaction of several internal characteristics, rather than standing alone. Theoretically, these results are consistent with legitimacy theory—whereby firms maintain their reputation through sustainability practices and fiscal compliance—as well as agency theory, which emphasises the role of oversight structures and corporate capacity in influencing managerial decisions regarding tax strategy (Suchman, 1995) and (Jensen & Meckling, 1976). Thus, the simultaneous significance of these variables indicates that tax avoidance is shaped by the combined influence of legitimacy pressures and internal governance dynamics. These findings are consistent with research (Sulistyawati & Rahmawati, 2024; Alawiyah & Wulandari, 2024; Pavlou *et al*., 2025; Nugroho & Ernandi 2025), which found that governance mechanisms and firm characteristics jointly influence corporate tax management strategies. Consequently, CSR, gender diversity and firm size simultaneously contribute to shaping a firm's propensity to engage in or reduce tax avoidance.

[Table 10. F-test]

CONCLUSION

This study concludes that variations in tax avoidance practices amongst companies in the energy and raw materials sectors are influenced by a combination of internal firm characteristics, thereby directly addressing the research objectives and research questions of this study. The findings confirm that corporate social responsibility (CSR) plays an important role in reducing tax avoidance practices, supporting the argument that tax compliance is an integral part of a company's sustainability strategy.

In contrast to previous research, the presence of variations in company gender and size did not show any significant partial effects. However, when considered together, the findings indicate that various characteristics influence companies' tax behaviour. The findings from the panel data regression demonstrate strong evidence that further reinforces this understanding, showing that the model can identify the relationship between company characteristics and tax avoidance practices.

From a theoretical perspective, this study contributes to the development of legitimacy theory by providing empirical evidence that higher levels of CSR disclosure serve as a mechanism used by firms to maintain social legitimacy by adopting more conservative tax practices in highly regulated and capital-intensive industries. Furthermore, these findings provide a further refinement of agency theory by demonstrating that governance-related attributes, such as board composition and firm size, may not independently constrain tax avoidance unless supported by effective monitoring mechanisms and adequate institutional oversight. These findings highlight the role of contextual factors, such as industry characteristics and the regulatory environment, in shaping how effectively corporate governance influences tax-related decisions.

However, this study has limitations. It utilised a relatively short observation period and considered only a limited number of variables, which is inherently restrictive. Furthermore, the low representation of women on boards of directors limits the overall expertise required to capture the impact of gender diversity. Therefore, future research should extend the observation period to include variables such as audits, institutional ownership and board independence, and apply alternative measures of tax avoidance practices to provide a more comprehensive understanding of such practices.

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LIST OF TABLES

***Table 1** / Sample Selection Criteria*

No	Description	Number	
1	Energy and basic materials companies listed on the IDX.		202
1a	Energy companies listed on the IDX.	90	
1b	Basic materials companies listed on the IDX.	112	
2	Companies that did not conduct an IPO in 2022-2024.		-37
3	Companies that did not use the 2021 GRI index in their sustainability reports.		-130
4	Companies that did not present complete research variable data (gender diversity ratio on the board of directors, total assets, tax payments, profit before tax).		0
Sample size		35	
Number of data observations (n x research period) (35 x 3)		105	

Table 2 */ Results of Descriptive Statistical Analysis*

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
Corporate Social Responsibility	0.722182	0.726496	1.000000	0.341880	0.179323	105
Gender Diversity	0.102642	0.000000	0.666667	0.000000	0.145299	105
Firm Size	30.58971	30.63751	38.70582	26.86446	1.853977	105
Tax Avoidance	0.587935	0.313979	4.976346	0.004566	0.806644	105

Table 3 */ Chow Test*

Effects Test	Statistic	d.f.	Prob.
Cross-section F	15.308581	(34,67)	0.0000
Cross-section Chi-square	227.972805	34	0.0000

***Table 4** / Hausman Test*

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.246609	3	0.0016

Table 5 */ Lagrange Multiplier Test*

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	49.67469	0.572245	50.24693
	(0.0000)	(0.4494)	(0.0000)

***Table 6** / Results of Panel Data Regression Analysis*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.612	0.743	2.169	0.033
Corporate Social Responsibility	-2.024	0.072	-27.746	0.000
Gender Diversity	-0.345	0.404	-0.853	0.396
Firm Size	0.015	0.024	0.632	0.529

***Table 7** / Multicollinearity Test*

Variable	CSR	GD	FS
Corporate Social Responsibility	1	-0.1009354982940797	0.2717980966454711
Gender Diversity	-0.1009354982940797	1	0.2651233327372275
Firm Size	0.2717980966454711	0.2651233327372275	1

Table 8 */ Heteroscedasticity Test*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.101212	0.278258	0.363736	0.7172
Corporate Social Responsibility	0.023029	0.027312	0.843186	0.4021
Gender Diversity	0.166292	0.151513	1.097543	0.2763
Firm Size	-0.000972	0.009150	-0.106180	0.9158

***Table 9** / t-Test*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.612690	0.743364	2.169449	0.0336
Corporate Social Responsibility	-2.024466	0.072963	-27.74647	0.0000
Gender Diversity	-0.345665	0.404766	-0.853987	0.3962
Firm Size	0.015455	0.024444	0.632239	0.5294

Table 10 */ F-test*

F-statistic	Prob(F-statistic)
48.49274	0.000000

Table 11 */ Coefficient of Determination (R2)*

R-squared	Adjusted R-squared
0.964002	0.944123

LIST OF FIGURE

***Figure 1** / Research Model*