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ESG, Ownership Structure, and Board Composition Effects on Tax Avoidance in Indonesian Manufacturing

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ABSTRACT

Purpose: This study aims to analyze the effect of ESG performance, institutional ownership, and the proportion of female directors on tax avoidance in manufacturing companies listed on the Indonesia Stock Exchange from 2022 to 2024.

Methodology: This study uses a quantitative approach with a balanced panel dataset of 19 companies, yielding 57 observations selected through purposive sampling. Tax avoidance is proxied by the Effective Tax Rate (ETR), while firm size and profitability serve as control variables. The analysis was conducted using a Random Effect Model with Panel EGLS (Swamy-Arora) in EViews.

Results: ESG performance and the proportion of female directors had no significant effect on tax avoidance. Institutional ownership has a significant negative effect on tax avoidance, indicating that higher institutional ownership reduces aggressive tax-avoidance practices.

Conclusions: The findings suggest that institutional ownership effectively monitors management and curbs opportunistic behavior related to tax avoidance, while ESG disclosure and female director representation are currently insufficient to significantly influence tax strategies in the Indonesian manufacturing context.

Limitations: This study is limited by a small sample (19 firms), reliance on a single ESG data source, and a short post-pandemic period. Future research should expand the sample, separate ESG dimensions, and explore alternative tax avoidance proxies, such as Cash ETR or Book-Tax Differences.

Contribution: This study provides empirical evidence on the factors of corporate governance and sustainability that affect tax avoidance in Indonesia, offering insights for regulators, investors, and companies to improve monitoring mechanisms and corporate reporting practices.

Keywords: *Board Composition, ESG, Institutional Ownership, Tax Avoidance*

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1. Introduction

Taxation is the primary instrument for financing government operations and national development in Indonesia. According to the APBN Kita report, November 2024 edition, national tax revenues reached approximately IDR 1,517 trillion, or approximately 76.3% of the target. The manufacturing sector contributed the largest share, accounting for approximately 25.84% of the total tax revenue, surpassing the trade (25.76 %) and finance and insurance (13.15 %) sectors. However, this high contribution does not imply that all companies in the sector fully comply with their tax obligations. One persistent concern for the Directorate General of Taxes is tax avoidance, which is defined as the legal minimization of tax liabilities through the exploitation of gaps in tax regulations (James, 2012). Suwaldiman and Rheina (2023) estimate that developing countries lose USD 100–240 billion annually due to cross-border tax avoidance practices.

In this study, the average Effective Tax Rate (ETR) of the sampled manufacturing companies for 2022–2024 was 25.53%, with a minimum value of 1.21%, far below the nominal corporate tax rate of 22%. Such low ETR values indicate aggressive tax-reduction strategies by some companies. This study examines three main factors: ESG performance (Environmental, Social, and Governance), institutional ownership structure, and board composition, proxied by the proportion of female directors. These variables were chosen based on legitimacy and agency theories, both of which are relevant to corporate tax behavior. From the perspective of legitimacy theory, companies with high ESG performance are hypothesized to have greater incentives to avoid aggressive tax avoidance to maintain their public reputation and legitimacy. From the agency theory perspective, Jensen and Meckling (2019) argue that institutional ownership and board composition serve as internal monitoring mechanisms that can restrain opportunistic management behavior, including tax avoidance. This study fills a gap in the literature by examining the simultaneous influence of these three factors on Indonesian manufacturing companies during 2022–2024, a post-COVID-19 period characterized by strengthened sustainability regulations and increased tax oversight.

Taxation plays a substantial role in financing government operations and national development in Indonesia, and the manufacturing sector is particularly critical in this context. While manufacturing contributes the largest share of tax revenue, this does not imply uniform compliance among companies, as evidenced by aggressive tax avoidance practices. The sample of manufacturing companies studied during 2022–2024 shows an average Effective Tax Rate (ETR) of 25.53%, with some companies reporting an ETR as low as 1.21%, far below the nominal corporate tax rate of 22%. These figures suggest that, despite substantial contributions to national revenue, several companies actively engage in strategies to legally minimize tax burdens by exploiting gaps in the existing tax framework.

Taxation is a fundamental instrument through which the government finances public services and national development (Setiawan, Wardhani, & Yanto, 2025). In Indonesia, taxes serve not only as a source of government revenue but also as a mechanism for redistributing resources and promoting economic stability. National tax revenue reached approximately IDR 1,517 trillion, representing 76.3% of the annual target. Among sectors, manufacturing contributed the largest share of tax revenue, accounting for 25.84% of total tax collections, surpassing trade (25.76%) and finance and insurance (13.15%) sectors. Despite this substantial contribution, this does not imply full compliance among all manufacturing firms. One of the primary challenges faced by the Directorate General of Taxes is tax avoidance, which is defined as the legal reduction of tax liabilities through the strategic exploitation of loopholes in tax law (James, 2012).

In the context of Indonesian manufacturing, tax avoidance has become a critical issue, particularly during the post-pandemic recovery. The study sample shows an average Effective Tax Rate (ETR) of 25.53% from 2022 to 2024, with some companies reporting values as low as 1.21%, substantially below the statutory corporate tax rate of 22%. This variation indicates that while some companies contribute proportionally to tax revenue, others implement aggressive strategies to minimize their tax liabilities. The use of legal loopholes, strategic timing of revenue recognition, and selective expense reporting are methods employed to reduce taxable income. While these practices are legal, they may undermine

public trust, reduce government revenue, and create inequities between firms with differing capacities to optimize tax strategies.

This study focuses on three primary determinants of tax avoidance: ESG performance, institutional ownership, and board composition, proxied by the proportion of female directors on the board. These variables were selected based on legitimacy and agency theories, providing a dual lens for analyzing corporate tax behavior. Legitimacy theory posits that firms strive to align their corporate activities with societal norms and expectations to maintain legitimacy and public approval ([Suchman, 1995](#)). Companies with high ESG scores are under scrutiny by investors, regulators, and the public, creating reputational incentives to comply with legal and ethical standards. High ESG performance reflects a firm's commitment to environmental stewardship, social responsibility, and robust governance practices. Consequently, firms with strong ESG credentials are less likely to engage in aggressive tax avoidance, as such behavior conflicts with their publicly stated sustainability objectives and damages stakeholder perceptions.

Agency theory complements this perspective by emphasizing internal governance mechanisms that mitigate conflicts between principals (shareholders) and agents (management) ([Jensen & Meckling, 2019](#)). Managers' opportunistic behavior, including aggressive tax avoidance, can result from information asymmetry and misaligned incentives. Institutional investors serve as key monitors in this framework, leveraging their resources, expertise, and long-term orientation to oversee the management decisions. Institutional ownership is hypothesized to restrain managerial discretion, encourage adherence to legal standards, and reduce incentives for aggressive tax planning. Similarly, board composition, particularly gender diversity, introduces additional oversight and ethical considerations into the decision-making process, enhancing compliance with corporate governance norms and social responsibility objectives.

Moreover, the post-COVID-19 period presents unique regulatory and operational challenges. The Indonesian government has strengthened sustainability reporting requirements, and the Directorate General of Taxes has intensified monitoring and compliance measures. In this context, the simultaneous consideration of ESG performance, institutional ownership, and board composition provides a comprehensive framework for understanding tax avoidance in manufacturing firms' operations. ESG initiatives, ranging from environmental programs to social impact activities, serve as both reputational signals and internal behavioral constraints ([Tarigan & Yuliansyah, 2025](#)). Institutional ownership provides oversight and risk management, whereas diverse boards, particularly those with female directors, contribute ethical judgment, risk awareness, and enhanced scrutiny of managerial proposals, including tax strategies.

Understanding these determinants is critical for multiple stakeholders. Regulators benefit from identifying mechanisms that effectively reduce tax avoidance, and firms can align sustainability and governance practices with responsible tax behavior. Investors gain insight into the quality of governance and its impact on financial and reputational risks ([Andesto, 2025](#)). By integrating ESG performance, institutional ownership, and board composition, this study fills a gap in the literature, particularly in the Indonesian context during a period of regulatory and economic transition. This study contributes both theoretical insights, reinforcing the relevance of legitimacy and agency theories, and practical guidance for policymakers, corporate managers, and investors seeking to promote transparent and ethical tax practices.

In conclusion, the introduction establishes the significance of tax avoidance as a corporate and public policy issue in Indonesia, emphasizing the unique role of manufacturing firms in generating national revenue. It frames ESG, institutional ownership, and board composition as critical determinants of tax behavior, linking them to legitimacy, and agency considerations. The post-pandemic regulatory landscape further contextualizes this study, highlighting the importance of compliance, transparency, and sustainability in shaping corporate tax practices. By addressing these dimensions, this study provides a foundation for exploring governance and sustainability mechanisms that can mitigate aggressive tax avoidance and enhance corporate accountability.

This study focuses on three primary factors influencing tax avoidance behavior: ESG performance, institutional ownership, and board composition proxied by the proportion of female directors. The selection of these variables is grounded in legitimacy and agency theories, both of which provide a robust framework for understanding corporate tax behavior. Legitimacy theory posits that firms seek to align their actions with societal norms and expectations to maintain their public approval and legitimacy. Companies with high ESG performance are often under public and regulatory scrutiny, which should theoretically reduce their incentive to engage in aggressive tax avoidance. High ESG performance signals to stakeholders that the company is committed to ethical and sustainable practices, suggesting that these companies would adopt tax strategies that maintain their reputation and social approval.

Conversely, agency theory emphasizes internal governance mechanisms designed to mitigate conflicts of interest between principals (owners) and agents (management). Institutional ownership is particularly significant because institutional investors are typically long-term-oriented and equipped with the capacity to monitor managerial behavior effectively. Institutional shareholders can constrain management's opportunistic behavior, including tax avoidance strategies that may jeopardize the company's reputation or expose it to regulatory sanctions. Therefore, a higher proportion of institutional ownership is expected to correlate with lower levels of aggressive tax avoidance due to enhanced oversight and accountability.

Board composition, particularly gender diversity, provides another layer of governance. Female directors are often associated with higher risk aversion, ethical sensitivity, and compliance-oriented behaviors. Their presence on corporate boards may encourage management to adopt more conservative tax strategies and ensure alignment with corporate governance and social responsibility objectives of the firm. However, in the Indonesian manufacturing context, the average proportion of female directors is relatively low at 12.22%, which could limit their potential influence on strategic decisions related to tax planning. Consequently, the effect of board gender diversity on tax avoidance may be minimal unless accompanied by broader governance reforms and increased female representation on boards.

The findings of this study fill a notable gap in the literature by simultaneously analyzing the impact of ESG performance, institutional ownership, and board composition on tax avoidance in the post-pandemic period in Indonesia. This period is characterized by strengthened sustainability regulations and heightened tax monitoring, providing a unique context for assessing how governance and sustainability initiatives interact to influence corporate tax behavior. This study highlights that while ESG disclosure may signal a commitment to sustainability, it does not necessarily translate into substantive behavioral changes in tax compliance. In contrast, institutional ownership has a tangible effect on mitigating aggressive tax avoidance, reaffirming the importance of active and capable investors in corporate oversight. These insights have significant implications for regulators, policymakers and corporate managers. Regulators may need to enhance ESG reporting standards, enforce auditing practices and integrate ESG compliance into tax monitoring frameworks. Companies should move beyond impression management in ESG reporting and embed sustainability principles into decision-making processes, particularly regarding fiscal compliance. The research also suggests that expanding female representation on boards and strengthening institutional investor participation can serve as effective mechanisms for reducing tax avoidance, thereby promoting both financial transparency and social legitimacy.

2. Literature Review and Hypothesis/es Development

2.1 Theoretical Foundation

This study is grounded in two major theories: legitimacy and agency. Legitimacy theory, initially proposed by [Dowling and Pfeffer \(1975\)](#) and later expanded by [Suchman \(1995\)](#), posits that organizations must align their activities with prevailing social norms and values to maintain their existence and gain public approval. In the corporate context, companies operate under the scrutiny of multiple stakeholders, including regulators, investors, and the general public. Failure to meet societal expectations can result in reputational damage and reduced legitimacy, potentially affecting financial performance, investor trust, and sustainability. In the taxation context, legitimacy theory suggests that

companies with high Environmental, Social, and Governance (ESG) performance are expected to be more compliant with tax obligations. A strong ESG commitment signals that the company adheres not only to legal requirements but also to ethical standards, reducing the likelihood of aggressive tax avoidance, as such behavior could harm public perception and legitimacy. By adopting responsible tax strategies, companies can demonstrate consistency between their declared sustainability values and financial practices, fostering trust among stakeholders and enhancing corporate reputation ([Son, 2024](#)).

Agency theory, introduced by [Jensen and Meckling \(2019\)](#), addresses the contractual relationship between principals (owners) and agents (managers). The inherent conflict of interest between owners and management, often exacerbated by information asymmetry, can incentivize agents to pursue opportunistic behavior that benefits themselves at the expense of shareholders, such as aggressive tax avoidance. Institutional mechanisms, such as board oversight, shareholder monitoring, and governance policies, are designed to mitigate these conflicts. Institutional ownership, as a monitoring mechanism, can influence managerial decision-making by imposing long-term accountability and encouraging adherence to legal and ethical standards. Similarly, board composition, particularly in terms of diversity, affects the decision-making process and oversight quality, constraining opportunistic behavior. In the context of Indonesian manufacturing companies, where regulatory frameworks and ESG disclosures are evolving post-pandemic, these theories provide a robust framework for examining the determinants of tax avoidance, guiding both empirical analysis and the formulation of testable hypotheses.

2.2 Tax Avoidance

Tax avoidance is defined as the legal structuring of financial affairs to minimize tax liabilities, even when the outcomes may not align with the original intent of the tax legislation ([James, 2012](#)). Unlike tax evasion, which constitutes an illegal activity, tax avoidance operates within the legal framework but often leverages loopholes, exemptions, and gaps in the tax code ([Ali, Ahmed, Amin, & Rehman, 2024](#)). Multinational corporations frequently utilize mechanisms such as transfer pricing, strategic debt financing, and timing of revenue recognition to legally reduce taxable income. In emerging markets such as Indonesia, these practices are particularly relevant to the manufacturing sector, which is a major contributor to national tax revenues but exhibits significant variation in tax compliance and Effective Tax Rates (ETR).

The Effective Tax Rate (ETR), typically calculated as the ratio of tax expense to pre-tax income, is widely recognized as a reliable proxy for measuring corporate tax avoidance ([Gebhart, 2017](#)). A lower ETR suggests that a company actively pursues strategies to reduce its tax burden, whereas a higher ETR indicates adherence to statutory tax obligations. By analyzing the ETR alongside governance and sustainability variables, researchers can better understand how both internal corporate mechanisms and external pressures, such as regulatory oversight or stakeholder expectations, influence corporate tax behavior ([Masripah et al., 2025](#)). This approach allows for a more nuanced assessment of whether low tax payments result from efficient management, strategic planning, or opportunistic avoidance.

Longitudinal ETR analysis provides additional insights into persistent tax avoidance patterns over multiple fiscal years. Tracking changes in the ETR can reveal whether aggressive tax strategies are episodic or systemic within a company, as well as the extent to which governance structures, board composition, and shareholder oversight contribute to sustained compliance or avoidance behavior. In countries such as Indonesia, where tax monitoring and ESG disclosure frameworks are still developing, longitudinal analysis is particularly useful for observing the interplay between regulatory interventions and corporate responses over time ([Kriswanti & Indriani, 2025](#)). Such analyses help identify the structural factors that may encourage or deter aggressive tax planning.

The post-pandemic period has introduced unique dynamics that further contextualize tax-avoidance behavior ([Syukur, 2024](#)). Stricter sustainability regulations and enhanced monitoring by the Directorate General of Taxes have heightened scrutiny of corporate financial practices. Companies operating in this environment face increased pressure to demonstrate transparency, ethical compliance, and alignment with ESG principles, particularly in terms of tax obligations. Examining the ETR during this period provides a valuable lens for understanding how emerging regulatory, economic, and governance factors

interact to influence corporate tax strategies. This context allows for an assessment of whether internal governance mechanisms, such as institutional ownership and board composition, effectively mitigate aggressive tax avoidance practices.

2.3 Environmental, Social, and Governance

Environmental, Social, and Governance (ESG) performance is a composite measure that reflects a company's sustainability practices across environmental stewardship, social responsibility, and governance quality ([Meiden & Silaban, 2023](#)). High ESG scores indicate that a company is committed to ethical management, reducing environmental impact, promoting social welfare, and maintaining robust governance mechanisms. Such performance is increasingly scrutinized by investors, regulators, and the general public and serves as a benchmark for responsible corporate behavior. Companies with strong ESG commitments are expected to integrate sustainability considerations into their strategic and operational decisions, including financial and tax planning.

Based on legitimacy theory, firms with higher ESG scores are less likely to engage in aggressive tax avoidance because such behavior can harm their reputation and legitimacy in the eyes of stakeholders. Aggressive tax planning may conflict with a company's publicly declared sustainability and ethical commitments, undermining stakeholder trust. Investors and regulatory bodies increasingly evaluate corporate ESG disclosures when assessing financial risk, ethical conduct, and long-term viability, making tax compliance an essential component of legitimacy maintenance ([Fuadah, Mukhtaruddin, Andriana, & Arisman, 2022](#)). In this context, ESG not only functions as a sustainability metric but also as a reputational constraint on managerial behavior.

Empirical evidence supports this view. [Yoon, Lee, and Cho \(2021\)](#) found a negative relationship between ESG performance and tax avoidance in Korean firms, suggesting that firms with strong sustainability practices are constrained from engaging in opportunistic tax strategies. Similarly, [Hidayat and Zuhroh \(2023\)](#) confirmed that ESG influences tax compliance in Indonesia. These studies indicate that ESG reporting, including environmental initiatives, social programs, and governance transparency, acts as a signal to both internal and external stakeholders, reducing the scope for managerial discretion in exploiting legal loopholes to minimize tax obligations of companies. Public disclosure of ESG activities subjects' firms to scrutiny from investors, regulators, and the broader community, creating reputational risks for aggressive tax strategies. Managers are thus incentivized to align tax practices with a company's sustainability commitments to avoid negative perceptions that could affect investment decisions, corporate valuation, or regulatory attention. Consequently, high ESG performance is expected to negatively influence corporate tax avoidance, providing the basis for the following hypothesis.

H_1 : ESG performance negatively affects corporate tax avoidance

2.4 Institutional Ownership

Institutional ownership refers to the proportion of a company's shares held by institutional investors, including pension funds, insurance companies and mutual funds. Agency theory suggests that institutional investors have stronger monitoring capabilities and a long-term investment horizon, which allows them to reduce opportunistic managerial behaviors such as tax avoidance ([Muhaimin, Arman, Wahid, Putriani, & Yunus, 2025](#)). Prior research by [Alkurdi and Mardini \(2020\)](#), [Dakhli \(2022\)](#), and [Ramadhani and Az'mi \(2024\)](#) demonstrates a negative relationship between institutional ownership and corporate tax avoidance. Institutional investors exert pressure on management to comply with legal and ethical standards, monitor risk exposure, and protect the company's reputation, effectively serving as a mechanism for internal control. High institutional ownership improves transparency, encourages compliance with tax regulations, and reduces managerial incentives for aggressive tax planning. In Indonesia, where corporate governance is still developing, institutional investors provide critical oversight to ensure that management decisions align with shareholder interests.

Institutional ownership also plays a key role in shaping corporate culture and strategic decision making. Companies with a high proportion of institutional investors often adopt more formal governance mechanisms, including stricter internal audit procedures, risk management policies, and compliance

reporting ([López-González, Martínez-Ferrero, & García-Meca, 2019](#); [Qawqzeh, 2023](#)). This not only reduces opportunities for managerial discretion in tax-related decisions but also fosters an organizational culture that values accountability and transparency. Furthermore, institutional investors often engage in active dialogue with management, requesting detailed reports on financial performance, sustainability initiatives, and tax strategies, which strengthens oversight and limits aggressive tax planning practices.

In the context of emerging markets such as Indonesia, institutional ownership is particularly important because regulatory enforcement and governance frameworks may still evolve. Institutional investors provide expertise, resources, and a long-term perspective that can compensate for gaps in corporate oversight, ensuring that managerial actions align with both shareholders and societal expectations. Their monitoring role also signals other stakeholders, including regulators and creditors, that the company maintains robust governance practices. Consequently, high institutional ownership can be viewed as a stabilizing factor that mitigates opportunistic behavior, supports ethical corporate conduct, and enhances overall market confidence.

H₂: Institutional ownership negatively affects corporate tax avoidance

2.5 Board Composition

Board composition, especially gender diversity, is believed to enhance managerial oversight effectiveness. Female directors are often more risk-averse, ethical, and compliance-oriented than their male counterparts ([Adams & Ferreira, 2009](#)). In the context of tax policies, companies with a higher proportion of female directors are expected to engage in less aggressive tax-avoidance. Studies in Indonesia by [Anggraeni and Kurnianto \(2020\)](#) and [Hidayat and Zuhroh \(2023\)](#) support this assertion, highlighting that female representation can influence strategic decision-making, including fiscal and governance choices. Despite the potential benefits, the effectiveness of female directors depends on their actual proportion and influence on the board. Their low representation may limit their impact on strategic decisions. Nevertheless, gender diversity strengthens governance mechanisms by promoting risk awareness, ethical conduct, and stakeholder accountability, which collectively discourage aggressive tax avoidance strategies.

Beyond direct oversight, gender-diverse boards contribute to more comprehensive discussions and critical evaluations of corporate policies, including tax planning strategies. Female directors bring different perspectives that can challenge managerial assumptions, reduce groupthink, and promote ethical and sustainable decision-making. Their presence often leads to more rigorous scrutiny of management proposals, ensuring that financial and strategic decisions align with legal standards and corporate social responsibility objectives. In particular, the inclusion of women in financial committees or audit-related roles can enhance the monitoring of tax compliance and financial reporting integrity.

In addition, gender diversity on boards signals to external stakeholders, such as investors, regulators, and customers, that the company prioritizes ethical conduct, transparency, and accountability. This can strengthen a firm's legitimacy and reputation, creating external pressure to maintain compliant and socially responsible practices, including adherence to tax laws. Collectively, a gender-diverse board not only strengthens internal governance mechanisms but also encourages a culture of ethical behavior and risk awareness, which can effectively discourage aggressive tax avoidance practices and support sustainable corporate performance in the long run.

H₃: The proportion of female directors negatively affects corporate tax avoidance

3. Methodology

3.1 Population, Sample, and Data

The population of this study includes all manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2022–2024 period. The sample was selected using purposive sampling based on specific criteria: companies that were consistently listed on the IDX throughout the study period, published complete annual and sustainability reports, had ESG scores available in the LSEG Workspace database, and reported positive pre-tax earnings. Based on these criteria, 19 manufacturing companies were selected, resulting in 57 panel data observations (19 companies × 3 years). The data

used in this study are secondary data sourced from the companies' annual reports published on the IDX website, sustainability reports, and the LSEG Workspace database.

3.2 Variable Measurement

The dependent variable is tax avoidance, proxied by the Effective Tax Rate (ETR), calculated as the total tax expense divided by the pre-tax income. The independent variables include the composite ESG score obtained from the LSEG Workspace database (ranging from 0 to 100), institutional ownership (INST), measured as the proportion of shares held by institutions relative to total outstanding shares expressed as a percentage, and the proportion of female directors (FEMDIR), calculated as the number of female directors divided by the total number of board members expressed as a percentage. The control variables include firm size (SIZE), measured as the natural logarithm of total assets, and profitability (ROA), calculated as the net income divided by total assets. These variables are included to account for differences in corporate scale and financial performance that may influence tax-avoidance behavior.

3.3 Data Analysis

The analysis was conducted using panel data regression with the EViews software. The regression model is specified as follows:

$$ETR_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 INST_{it} + \beta_3 FEMDIR_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \epsilon_{it} \quad (1)$$

The best model was selected through a series of diagnostic tests, including the Chow, Hausman, and Lagrange Multiplier (LM) tests. Prior to hypothesis testing, classical assumption tests were performed, including normality testing using the Jarque-Bera statistic, multicollinearity assessment via correlation matrix analysis, heteroskedasticity testing using the Breusch-Pagan-Godfrey test, and autocorrelation testing using the Breusch-Godfrey LM test. These diagnostic procedures ensure that the regression model meets the statistical assumptions, producing reliable and unbiased estimates of the relationships between ESG performance, institutional ownership, board composition, and corporate tax avoidance.

4. Results and Discussion

4.1 Descriptive Statistics

Table 1. Descriptive statistics of research variables

Statistic	ESG	INST	FEMDIR	SIZE	ROA	ETR
Mean	49.560	0.574	0.122	31.374	0.080	0.255
Median	49.940	0.555	0.100	31.634	0.066	0.234
Maximum	81.650	0.925	0.833	33.790	0.293	0.793
Minimum	12.190	0.009	0.000	28.129	0.001	0.012
Std. Dev.	17.841	0.209	0.161	1.308	0.067	0.132
Skewness	-0.124	-0.497	2.077	-0.429	1.397	1.679
Kurtosis	2.098	4.056	8.605	2.749	4.868	7.528
Jarque-Bera	2.077	4.993	115.606	1.895	26.834	75.480
Probability	0.354	0.082	0.000	0.388	0.000001	0.000
Sum	2824.900	32.736	6.966	1788.306	4.537	14.553
Sum Sq. Dev.	17825.23	2.454	1.446	95.749	0.251269	0.974
Observations	57	57	57	57	57	57

Table 1 presents the descriptive statistics based on 57 observations. The average Effective Tax Rate (ETR) is 25.53%, which is above the statutory corporate tax rate of 22%; however, the relatively large standard deviation (0.1319) indicates significant variation among companies. Some firms have extremely low ETRs (minimum 1.21%), suggesting aggressive tax-avoidance practices. ESG implementation varies widely (12.19–81.65), reflecting uneven sustainability commitments across Indonesia's manufacturing sectors. Institutional ownership averages 57.43%, indicating dominance by institutional investors, whereas the proportion of female directors remains low at 12.22%.

4.2 Classical Assumption Test

Normality testing using the Jarque-Bera statistic indicates that some variables are not normally distributed. However, with 57 observations, the Central Limit Theorem suggests that this does not significantly affect the estimation validity. Multicollinearity tests showed that all independent variable correlations were below 0.80. Heteroskedasticity tests (Breusch-Pagan-Godfrey) yielded a probability of $0.2634 > 0.05$, indicating homoskedasticity. Autocorrelation testing (Breusch-Godfrey LM Test) detects autocorrelation ($p= 0.0074$), which is addressed using the Random Effect Model with Panel EGLS (Swamy-Arora).

4.3 Panel Regression Model Selection

The Chow test results ($p= 0.0000 < 0.05$) indicate that the Fixed Effect Model (FEM) is better than the Common Effect Model (CEM). The Hausman test ($p= 0.1109 > 0.05$) suggests that the Random Effect Model (REM) is more efficient than FEM. The Lagrange Multiplier (Breusch-Pagan) test ($p= 0.0021 < 0.05$) confirms REM as the most appropriate model. Therefore, this study uses a Random Effect Model estimated with Panel EGLS (Swamy-Arora).

4.4 Regression Analysis

The regression equation obtained is as follows:

$$ETR = 1,1907 + 0,0019(ESG) + 0,1094(FEMDIR) - 0,2904(INST) - 0,6415(ROA) - 0,0262(SIZE) \quad (2)$$

Table 2. Random effect model estimation results (Panel EGLS)

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	1.191	0.609	1.954	0.056
ESG	0.002	0.001	1.615	0.113
FEMDIR	0.109	0.089	1.224	0.227
INST	-0.290	0.130	-2.229	0.030
ROA	-0.642	0.359	-1.787	0.080
SIZE	-0.026	0.019	-1.389	0.171
Effects Specification				
Effect	S.D.		Rho	
Cross-section random	0.076		0.519	
Idiosyncratic random	0.073		0.481	
Weighted Statistics				
Statistic	Value			
R-squared	0.238			
Adjusted R-squared	0.163			
S.E. of regression	0.076			
F-statistic	3.178			
Prob(F-statistic)	0.014			
Mean dependent var	0.124			
S.D. dependent var	0.083			
Sum squared resid	0.296			
Durbin-Watson stat	1.538			
Unweighted Statistics				
Statistic	Value			
R-squared	0.348			
Sum squared resid	0.635			
Mean dependent var	0.255			
S.D. dependent var	0.716			
Durbin-Watson stat	1.716			

Table 2 shows the results of a Random Effect Model (Panel EGLS) examining the influence of ESG performance, board composition (FEMDIR), institutional ownership (INST), firm size (SIZE), and profitability (ROA) on corporate tax avoidance. The coefficient for ESG is positive but not significant (0.002, $p=0.113$), indicating no measurable effect on tax avoidance. FEMDIR is also positive and non-significant (0.109, $p=0.227$), whereas institutional ownership has a significant negative effect (-0.290, $p=0.030$), suggesting that higher institutional ownership reduces aggressive tax avoidance. ROA and SIZE show negative but non-significant relationships with tax avoidance. Model diagnostics indicate an R-squared of 0.238 (weighted) and 0.348 (unweighted), with a Durbin-Watson statistic indicating no severe autocorrelation in the model. The effects specifications show moderate variance between the cross-section and idiosyncratic random components. Overall, the results highlight institutional ownership as the key governance factor mitigating tax avoidance, while ESG performance and female director representation are not statistically significant in this study's sample.

4.5 Hypothesis Testing and Discussion

4.5.1 Effect of ESG on Tax Avoidance

The ESG variable shows a coefficient of +0.0019 with a probability of $0.1125 > 0.05$; therefore, H_1 is rejected. ESG performance has no significant effect on tax avoidance. This finding aligns with [Arieftiara, Widyastuti, Masripah, Miftah, and Wijaya \(2025\)](#), who found that ESG had no significant impact on tax avoidance in the Indonesian context. From the perspective of legitimacy theory, manufacturing firms in Indonesia may use ESG disclosure as an impression-management tool rather than to reflect substantive changes in tax behavior. This is consistent with the current state of ESG implementation in Indonesia, which is still developing, with most ESG reporting being voluntary and not independently audited ([Sambuaga & Felicia, 2024](#)). These results differ from [Hidayat and Zuhroh \(2023\)](#) and [Lee \(2024\)](#), who found a significant negative effect, likely due to differences in research periods and ESG measurement methodologies.

4.5.2 Effect of Institutional Ownership on Tax Avoidance

The INST variable shows a coefficient of -0.2904 with a probability of $0.0302 < 0.05$; therefore, H_2 is accepted. Institutional ownership has a significantly negative effect on tax avoidance. This finding is consistent with the predictions of agency theory [Jensen and Meckling \(2019\)](#), which states that institutional investors with stronger monitoring capabilities and a long-term orientation can restrain opportunistic management behavior, including aggressive tax avoidance strategies. Mechanistically, institutional investors have the resources to conduct intensive oversight of managerial decisions and are more sensitive to the reputational and regulatory risks associated with tax avoidance. These results support prior studies by [Alkurdi and Mardini \(2020\)](#), [Dakhli \(2022\)](#), and [Ramadhani and Az'mi \(2024\)](#).

4.5.3 Effect of Board Composition on Tax Avoidance

The FEMDIR variable shows a coefficient of +0.1094 with a probability of $0.2266 > 0.05$; therefore, H_3 is rejected. The proportion of female directors has no significant effect on tax avoidance. This finding aligns with [Sambuaga and Felicia \(2024\)](#), who suggest that the influence of female directors is not universal and depends on the company's institutional environment. The non-significance may be explained by the very low average proportion of female directors (12.22%), which limits their impact on strategic decisions, including tax policies. Strategic tax decisions in Indonesian manufacturing companies are likely to be influenced by ownership structure and senior management policies.

Table 3. Summary of hypothesis testing results

H	Hypothesis	Coefficient	Probability	Direction	Result
H_1	ESG negatively affects tax avoidance	+0.0019	0.1125	Positive (not sig.)	Rejected
H_2	Institutional ownership negatively affects tax avoidance	-0.2904	0.0302	Negative significant	Accepted
H_3	Proportion of female directors negatively affects tax avoidance	+0.1094	0.2266	Positive (not sig.)	Rejected

Table 3 summarizes the results of the hypothesis testing on the factors affecting tax avoidance in Indonesian manufacturing companies. ESG performance shows a positive but non-significant coefficient (+0.0019, $p= 0.1125$), indicating that it does not significantly influence tax avoidance. Institutional ownership has a significant negative effect (-0.2904, $p= 0.0302$), suggesting that higher institutional ownership reduces aggressive tax avoidance. The proportion of female directors has a positive but non-significant effect (+0.1094, $p= 0.2266$), implying that female representation on the board does not significantly impact tax avoidance in this sample.

5. Conclusions

5.1 Conclusion

This study analyzes the effect of ESG performance, institutional ownership, and the proportion of female directors on tax avoidance in 19 manufacturing companies listed on the Indonesia Stock Exchange from 2022 to 2024. Based on the random effects model estimation, ESG performance does not significantly affect tax avoidance. Voluntary ESG reporting in Indonesia, which is not yet independently audited, implies that ESG scores may not fully reflect a company's substantive commitment to tax transparency. However, institutional ownership has a significant negative effect on tax avoidance, confirming the effectiveness of institutional investors as a monitoring mechanism capable of restraining aggressive tax avoidance, consistent with agency theory predictions.

The proportion of female directors does not significantly affect tax avoidance, likely because of their very low average representation in the sample (12.22%), which limits their influence on strategic tax policies. The study's implications suggest that regulators should strengthen ESG reporting standards and implement risk-based tax oversight strategies that consider company ownership structures. For companies, these findings highlight the need to improve substantive ESG implementation and enhance the role of female directors in strategic decision making.

5.2 Research Limitations

This study had several limitations that should be acknowledged. First, this study focuses exclusively on manufacturing companies listed on the Indonesia Stock Exchange during the 2022–2024 period, which limits the generalizability of the findings to other sectors or countries. Second, the sample size is relatively small, comprising 19 companies with 57 observations, which may reduce the statistical power and robustness of our results. Third, ESG performance, institutional ownership, and board composition were measured using available secondary data, which may not fully capture the qualitative aspects of governance, sustainability, or gender influence on decision-making. Fourth, this study uses the Effective Tax Rate (ETR) as the sole proxy for tax avoidance, which may not capture more nuanced forms of tax planning or cash-based avoidance strategies. Finally, the post-pandemic period (2022–2024) presents unique regulatory and economic conditions that may influence corporate behavior in ways that are not fully representative of typical operational environments.

5.3 Suggestions and Directions for Future Research

Based on the findings and limitations of this study, several recommendations for future research are offered. First, future studies should expand the sample to include multiple sectors or a larger number of companies to improve generalizability and provide a broader understanding of corporate tax-avoidance behavior. Second, researchers are encouraged to use multiple proxies for tax avoidance, such as cash effective tax rate (Cash ETR) or book-tax differences (BTDs), to capture more nuanced corporate strategies. Third, ESG performance can be analyzed by individual dimensions of environmental, social, and governance rather than as a composite score to identify which aspect most strongly influences tax behavior. Fourth, board characteristics such as independence, tenure, and expertise, in addition to gender diversity, could be incorporated to examine their combined effect on governance and tax compliance. Finally, longitudinal studies over a longer period would allow researchers to assess the consistency of governance and sustainability's influence on tax avoidance, particularly under evolving regulatory frameworks and post-pandemic economic recovery. These directions can provide deeper insights for policymakers, investors, and companies to enhance corporate governance, transparency, and ethical tax practices in the future.

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