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Gender and corporate governance: A moderating analysis on tax avoidance strategies

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ABSTRACT

This study aims to analyze the impact of corporate governance, specifically the Board of Directors (BOD), Board of Commissioners (BOC), and the proportion of independent (PIC) commissioners, on corporate tax avoidance strategies among public companies in Indonesia. Additionally, it explores the moderating role of gender diversity in strengthening or weakening the relationship between corporate governance and tax avoidance. The study focuses on non-financial companies listed on the Indonesia Stock Exchange (IDX) during the 2018-2022 period, employing a quantitative approach with unbalanced panel data and fixed effects regression analysis. The sample consists of 380 companies, yielding 1,660 observations. The research indicates that elements of corporate governance (especially the size of the BOD and PIC) do not have a pronounced effect on tax avoidance. On the other hand, having a large BOC seems to correlate negatively with tax avoidance, suggesting that a high level of oversight can limit overly aggressive tax planning. The proportion of women in leadership positions (GD1) and women serving as CEOs (GD2) does not portray a direct or moderating influence on the relationship between governance and tax avoidance. These findings point to the fact that gender diversity's impact on corporate governance in Indonesia may be limited by institutional and cultural challenges. This is consequently why the study suggests that corporate governance and gender diversity have limited influence on tax avoidance in Indonesia. The findings emphasize the need for more inclusive corporate governance reforms and efforts to empower women in strategic decision-making roles.

Contribution/Originality: This study offers an extensive examination of the impact of gender diversity concerning tax evasion, as well as demonstrating how board size and the ratio of independent commissioners proportionally impact tax evasion, with the inclusion of gender as a moderating variable.

1. INTRODUCTION

Tax avoidance has become a highly relevant topic in accounting and finance research, particularly due to its implications for corporate financial management and public reputation. A majority of firms utilize a range of tax avoidance techniques in an attempt to legally minimize their tax burden. However, some of these strategies often approach or cross the boundaries of legality, posing legal and reputational risks for the firms involved (Hanlon & Heitzman, 2010; Lee & Kao, 2018). Tax avoidance, on the contrary, can minimize operating costs in the short term, but it can compromise the transparency of financial reporting and generate negative perceptions among stakeholders (Lee & Kao, 2018). Therefore, investigating the factors influencing tax avoidance, especially those related to corporate governance, has become increasingly important.

Strong corporate governance is often considered a key mechanism to ensure that corporate activities, including tax avoidance, are conducted legally and ethically. The role of the board of directors and independent commissioners is crucial in overseeing corporate activities related to tax planning (Antle, 1982). Research has shown that effective corporate governance can help minimize aggressive tax avoidance and ensure that firms operate in the best interests of shareholders without violating tax regulations (Gul, Srinidhi, & Ng, 2011). However, although quite a lot of research has examined the influence of corporate governance on tax avoidance, there are still relatively few studies that examine how certain governance attributes, such as gender diversity, affect the relationship.

Gender diversity on boards of directors and commissioners has received increasing attention in corporate governance research, as women often approach decision-making differently than men. Several studies have shown that the presence of women on boards can improve corporate governance through greater oversight and more ethical decision-making, including in matters related to tax avoidance (Peni & Vähämaa, 2010; Richardson, Taylor, & Lanis, 2016). Research also indicates that women tend to be more risk-averse and hold themselves to higher ethical standards, which may reduce the likelihood that companies will engage in aggressive tax strategies (Lanis, Richardson, & Taylor, 2017). In this context, gender diversity is considered an important component in promoting more ethical and transparent corporate governance.

In addition, several studies have shown that the presence of gender-diverse independent commissioners can also improve the quality of supervision and reduce tax avoidance. Female commissioners tend to be more cautious and conservative in decision-making, especially in terms of financial reporting and tax planning (Hoseini, Safari Gerayli, & Valiyan, 2019). Therefore, gender diversity in the board of commissioners and directors can strengthen the relationship between board size and tax avoidance, while improving overall corporate governance. A stronger governance framework with a diverse composition is expected to reduce opportunistic behavior in tax avoidance.

Despite significant progress in understanding the relationship between corporate governance and tax avoidance, there is still a pressing need to further explore the role of gender diversity in this context. Studies such as Richardson et al. (2016) and Lanis et al. (2017) have highlighted the importance of female board representation in reducing tax aggressiveness. However, these findings need to be strengthened with broader empirical evidence across industries and geographies. Examining how gender diversity interacts with other governance mechanisms can provide valuable insights into how companies can balance effective tax planning with ethical standards. Given the growing attention to corporate transparency and responsible governance, understanding how gender diversity impacts tax strategies is important for both academics and practitioners.

This study makes a significant contribution to the literature on corporate governance and tax avoidance. First, it provides a deeper exploration of the influence of gender diversity on tax avoidance—an area that has received relatively limited attention in previous research. Second, this study provides empirical evidence on how board size and the proportion of independent commissioners affect tax avoidance, by including gender as a moderating factor. Thus, this study not only enriches the understanding of the role of corporate governance in tax avoidance but also highlights the importance of gender diversity as a key factor in ensuring ethical and transparent tax practices.

This study is organized into a systematic framework. The following section provides an in-depth literature review and formulates hypotheses to be tested empirically. The third section outlines the analytical model used, including the variables considered. The fourth section presents the data, descriptive statistics, empirical analysis, robustness tests, and a comprehensive discussion of the findings. The final section concludes the study and offers insights into the implications of the research results.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Tax Avoidance

Tax avoidance plays a significant role in managing a company's operational costs, as it allows firms to legally reduce the amount of taxes they owe. Tax avoidance encompasses a variety of strategies—some entirely legal, while

others border on illegal tax schemes. Researchers define corporate tax avoidance as the reduction of explicit taxes paid by firms. One commonly used method to measure tax avoidance is the three-year average ratio of current taxes paid to pre-tax earnings (Atwood, Drake, Myers, & Myers, 2012; Hanlon & Heitzman, 2010). Although tax avoidance can provide short-term financial benefits to companies, its impact on transparency and the quality of financial reporting cannot be overlooked. Audit quality has been proven to play an important role in detecting and limiting aggressive tax strategies (Lee & Kao, 2018; Maydew & Shackelford, 2005). In this context, studying the influence of corporate governance mechanisms and gender diversity related to tax avoidance has become increasingly important.

Corporate governance, particularly the oversight role of the board of commissioners and independent directors, has proven to be a crucial mechanism for ensuring that corporate activities, such as tax avoidance, are conducted legally and ethically. Effective governance can minimize opportunistic behavior and align corporate actions with shareholder interests. External audits, as a key component of corporate governance, serve to reduce information asymmetry, enhance transparency, and ensure compliance with financial regulations (Antle, 1982; Whittington, 1993). Research has shown that companies in countries with stronger governance frameworks tend to engage in less aggressive tax avoidance (Zeng, 2019). However, while the role of corporate governance in curbing tax avoidance is widely recognized, understanding how specific governance attributes, such as gender diversity on boards of directors, affect this outcome remains limited.

Gender diversity on corporate boards has been found to influence not only corporate governance but also financial decisions, including tax avoidance. Research shows that female directors often bring different perspectives and management styles to board decision-making, which can improve the overall effectiveness of board oversight and control (Adams & Ferreira, 2009; Francoeur, Labelle, & Sinclair-Desgagné, 2008). For example, Boussaidi and Hamed (2015) found that gender diversity had a significant impact on the effective tax rate (ETR) in Tunisia, with higher ETRs indicating lower levels of tax avoidance. Similarly, Lanis et al. (2017) reported a negative correlation between gender diversity and tax aggressiveness among US firms. The presence of women on boards appears to reduce tax aggressiveness, making gender diversity an important element in corporate governance frameworks aimed at ensuring ethical tax practices.

2.2. Corporate Governance

Corporate governance plays a significant role in shaping tax avoidance behavior within a company, primarily through the size of the board of directors. The board of directors is responsible for overseeing management activities, including tax-related decisions. Research shows that larger boards often lead to increased tax avoidance because they involve more perspectives and interests. Desai and Dharmapala (2006) argue that larger boards may provide greater incentives for directors to implement aggressive tax strategies, as the larger number of participants can complicate the decision-making process and reduce accountability. Consequently, with more individuals seeking to maximize profits, tax avoidance strategies are more likely to emerge to meet shareholder expectations for higher returns (Armstrong, Larcker, Ormazabal, & Taylor, 2013; Desai & Dharmapala, 2006). Conversely, research also shows that smaller boards can help reduce tax avoidance through more efficient oversight and faster decision-making processes. When boards are smaller, communication and problem-solving become more fluid, allowing directors to monitor management actions and reduce conflicts of interest more effectively (Mashaykhi & Seyyedi, 2015). This greater efficiency allows boards to focus on the company's long-term goals, including maintaining tax compliance, rather than engaging in short-term tax avoidance strategies that can harm the company's reputation (Fahriani & Priyadi, 2016). Therefore, while larger boards may encourage tax avoidance due to a focus on short-term profits, smaller, more cohesive boards can mitigate this risk by emphasizing ethical corporate governance practices.

Furthermore, corporate governance reforms, such as those implemented in Mexico through the "Code of Best Corporate Practices," demonstrate the potential of governance systems to influence tax behavior (Kerr, Price, & Román, 2016). The restructuring of boards of directors implemented through this Code, including the addition of

more independent directors and strengthening internal controls, resulted in better governance and reduced tax avoidance (Seidman & Stomberg, 2011). These reforms indicate that when governance structures are strengthened, particularly through board composition and size, there is a significant reduction in opportunities for tax avoidance. Therefore, the relationship between board size and tax avoidance is complex, with larger boards generally leading to increased tax avoidance, while smaller boards encourage more ethical and compliant financial practices (Armstrong et al., 2013; Desai & Dharmapala, 2006; Hoseini et al., 2019).

2.3. Gender Diversity

The relationship between gender diversity and corporate tax avoidance has become an increasingly important topic in corporate governance research. Several studies have shown that the presence of women on boards of directors can reduce aggressive tax strategies. Women tend to have higher ethical standards, greater risk aversion, and greater transparency in decision-making, which contribute to lower levels of tax avoidance (Peni & Vähämaa, 2010; Richardson et al., 2016). Female directors are also known to encourage more conservative financial reporting practices and ensure that corporate actions align with long-term goals, thereby reducing the temptation to engage in tax avoidance (Harymawan, Nasih, & Noeraini, 2019). The presence of female directors on boards creates stronger oversight, thereby minimizing the risk of opportunistic behavior often associated with aggressive tax planning (Gul et al., 2011). Further research shows that gender diversity on boards of directors improves oversight and transparency, which can reduce tax avoidance. Khaoula and Ali (2012) found that the presence of women on boards is negatively correlated with tax avoidance, as female directors tend to apply higher moral and ethical standards in corporate governance. Companies with gender-diverse boards are more likely to consider the reputational risks associated with aggressive tax strategies and take a more cautious approach to tax planning (Chen, Leung, & Goergen, 2017). These characteristics make female directors particularly effective in curbing practices such as tax avoidance, which carry both reputational and legal risks. Furthermore, research suggests that the impact of female directors on tax avoidance may be stronger in larger companies (Hoseini et al., 2019). Large companies face greater public scrutiny, and the risk-averse nature of female directors can be invaluable in ensuring tax compliance. By strengthening the overall governance framework, gender diversity enhances corporate oversight mechanisms and improves transparency in financial disclosures Lanis et al. (2017). Consequently, the presence of women on boards significantly contributes to reducing tax aggressiveness, which benefits not only a company's reputation but also its long-term financial stability.

2.4. Hypotheses Development

Corporate governance has a significant relationship with tax avoidance, particularly through mechanisms related to the size of the board of directors and the board of commissioners. According to agency theory, board size can influence tax decision-making, with larger boards tending to complicate decision-making and reduce accountability (Desai & Dharmapala, 2006). In companies with large boards, tax avoidance is more likely because directors have an incentive to engage in aggressive tax strategies to maximize corporate profits and meet shareholder expectations for higher returns (Armstrong et al., 2013; Hoseini et al., 2019). On the other hand, board size also plays a crucial role in monitoring management actions. An optimal board size can increase the effectiveness of oversight, ultimately reducing the opportunity for tax avoidance (Fahriani & Priyadi, 2016). Therefore, board size and board independence have the potential to have a positive relationship with tax avoidance, in line with the interest in maximizing profits by reducing the company's tax burden.

The proportion of independent commissioners also plays a crucial role in strong corporate governance, particularly in preventing aggressive tax avoidance. Independent commissioners serve to strengthen oversight of management decisions and ensure that shareholder interests are prioritized in company management (Lakhal, Aguir, Lakhal, & Malek, 2015). A greater presence of independent commissioners leads to more objective decision-making

and is free from conflicts of interest, which can reduce the likelihood of tax avoidance (Boussaidi & Hamed, 2015). Conversely, boards dominated by internal parties or management affiliates tend to undermine good governance objectives and actually encourage tax avoidance practices (Seidman & Stomberg, 2011). Therefore, a higher proportion of independent commissioners is expected to reduce the risk of tax avoidance, as they help maintain integrity in the decision-making process that affects the company's tax management. Based on the theoretical justification described above, the first three hypotheses are formulated as follows:

H_1: The size of the board of directors is associated with corporate tax avoidance.

H_2: The size of the board of commissioners is associated with corporate tax avoidance.

H_3: The proportion of independent commissioners is associated with corporate tax avoidance.

Gender diversity on boards of directors can strengthen the relationship between corporate governance and tax avoidance. The presence of women on boards has been shown to improve oversight effectiveness and decision-making quality (Peni & Vähämaa, 2010; Richardson et al., 2016). Women tend to uphold higher ethical standards and exhibit greater risk aversion, thus reducing the likelihood of firms engaging in aggressive tax strategies. In this context, the presence of women on boards may strengthen the effect of board size on tax avoidance. With the ethical perspectives brought by women, larger boards may be more effective in overseeing corporate tax-related actions, thereby reducing excessive tax avoidance (Lanis et al., 2017). Therefore, the following hypothesis is proposed:

H_{4a}: The relationship between board size and tax avoidance is stronger in companies with female representation on the board.

Similarly, the presence of women on the board of commissioners can also strengthen the board's influence on tax avoidance. Independent commissioners, who act as primary supervisors of company management, play a crucial role in ensuring company compliance with tax regulations (Gul et al., 2011). Research shows that female commissioners tend to be more cautious and focus on transparent financial reporting, which can reduce opportunistic behavior and tax aggressiveness (Hoseini et al., 2019). Therefore, the following hypothesis is formulated:

H_{4b}: The relationship between the size of the board of commissioners and tax avoidance is stronger in companies that have women on the board.

H_{4c}: The relationship between independent commissioners and tax avoidance is stronger in companies that have women on the board.

3. RESEARCH METHOD

3.1. Data and Sample

The study employs a quantitative approach using panel data analysis to investigate the relationship between corporate governance variables, namely the size of the board of directors, the board of commissioners, and the proportion of independent commissioners and corporate tax avoidance, while also assessing the moderating effect of gender diversity. The use of panel data enables the analysis of both cross-sectional and time-series variations, improving the robustness of the estimations by accounting for unobserved heterogeneity. The sample period of 2018–2022 is chosen to reflect recent trends in corporate governance and tax practices, including the impact of evolving regulations and post-implementation phases of Indonesia's tax reform initiatives. This period also allows for sufficient observations while focusing on the most current corporate governance disclosures. The data collection technique for this study, which covers publicly listed companies on the Indonesia Stock Exchange (IDX) from 2012 to 2022, utilizes secondary data collected manually (hand-collected). The data sources include:

1. Secondary data from financial statements.
2. Secondary data from the capital market database on the official IDX website.
3. Annual reports and GCG (Good Corporate Governance) reports.

This study utilizes data from companies listed on the Indonesia Stock Exchange (IDX) as of the end of 2022, with an initial population of 825 firms. A filtering process was conducted to obtain a sample that aligns with the

research objectives (Table 1). First, 14 companies that were delisted during the observation period of 2018–2022 were excluded. Next, 104 companies from the financial sector were removed due to the distinct characteristics of that industry compared to other sectors. Additionally, 327 companies lacking complete data for the variables used in this study were also excluded. After the selection process, the final sample consisted of 380 companies.

The data used in this study is in the form of unbalanced panel data, comprising 1,660 observations over the research period. The use of unbalanced panel data enables the inclusion of firms with inconsistent or incomplete financial reporting across the study period. This approach offers flexibility in analyzing data from companies that meet the sample criteria, even if they do not have financial reports for every year in the period. Consequently, the results of this study remain representative of the dynamics of firms listed on the IDX. The selected variables are grounded in agency theory, which posits that board structures and monitoring mechanisms influence managerial decision-making, including tax strategies. Gender diversity is included as a moderating variable in response to the growing emphasis on board diversity in global and regional governance discourse.

Table 1. Sampling criteria.

No.	Sampling criteria	Number of firms
1.	Companies listed in the Indonesia Composite Index (IHSG) at the end of 2022	825
2.	Companies that were delisted during the research period between 2018 and 2022	(14)
3.	Financial companies	(104)
4.	Companies that do not have complete data for the variables used in the study	(327)
Final sample		380
Observations		1.660

3.2. Independent Variable (Corporate Governance)

3.2.1. Board of Directors (BoD)

The Board of Directors is the company's governing body that has the authority and full responsibility for managing the company in its best interests, in accordance with its purposes and objectives. It also represents the company both internally and externally, in accordance with the provisions of the articles of association (Law No. 40 of 2007 concerning Limited Liability Companies, 2007). The variable used in this study for the size of the Board of Directors is the number of directors on the board.

3.2.2. Board of Commissioners (BoC)

The Board of Commissioners is the company's organ responsible for general and/or specific supervision in accordance with the articles of association and for providing advice to the directors (Law No. 40 of 2007 concerning Limited Liability Companies, 2007). The size of the BoC varies and is measured by the number of commissioners on the board.

3.2.3. Independent Commissioner (PIC)

An Independent Commissioner is a member of the board of commissioners who has no financial, managerial, shareholding, and/or familial relationship with other members of the board of commissioners, directors, and/or controlling shareholders or any relationship with the company that may affect their ability to act independently (Law No. 40 of 2007 concerning Limited Liability Companies, 2007). The Independent Commissioner variable is measured by calculating the proportion of independent commissioners to the total number of commissioners.

3.3. Dependent Variable (Tax Avoidance)

The dependent variable in this study is the level of corporate tax avoidance, measured using the Effective Tax Rate (ETR). Tax avoidance is defined as a reduction in tax liabilities carried out by a company without violating applicable tax regulations. In this study, tax avoidance is calculated using the company's effective tax rate (ETR).

ETR refers to the amount of tax expense paid divided by pre-tax income (Hanlon & Heitzman, 2010) and is formulated as follows:

$$ETR = (Tax\ Expense) / (Pre\text{-}Tax\ Income)$$

3.4. Moderating Variable (Gender Diversity)

3.4.1. Proportion of Women on the Board (GD1)

Gender diversity is measured by the proportion of female members on the board of directors relative to the total number of board members.

3.4.2. Female CEO (GD2)

The second proxy for gender diversity in this study is a dummy variable, assigned a value of 1 if the CEO is female and 0 otherwise.

3.5. Control Variables

This study includes control variables that are consistent with prior research on tax avoidance. The selected variables have been widely examined in previous studies in relation to corporate tax avoidance. The control variables include factors such as firm size (Ln(Total Assets)), firm growth ((Total Assets$_t$ - Total Assets$_{t-1}$)/Total Assets$_{t-1}$)), return on assets (Net Income/Total Assets), and leverage (Total Debt / Total Equity) (Jarboui, Kachouri Ben Saad, & Riguen, 2020; Kerr et al., 2016; Riguen, Salhi, & Jarboui, 2020).

The relationship among the variables is illustrated as follows: Figure 1 illustrates the research model, which investigates the relationship between corporate governance and tax avoidance. Corporate governance is represented by three main components Board of Directors (BOD), the Board of Commissioners (BOC), and the Proportion of Independent Commissioners (PIC), which directly influence tax avoidance as measured by the effective tax rate (ETR). The model further incorporates moderating variables (GD1 and GD2) that interact with governance mechanisms to affect tax avoidance outcomes. In addition, control variables, industry fixed effects, and year fixed effects are included to account for firm-level and contextual factors that may influence the results.

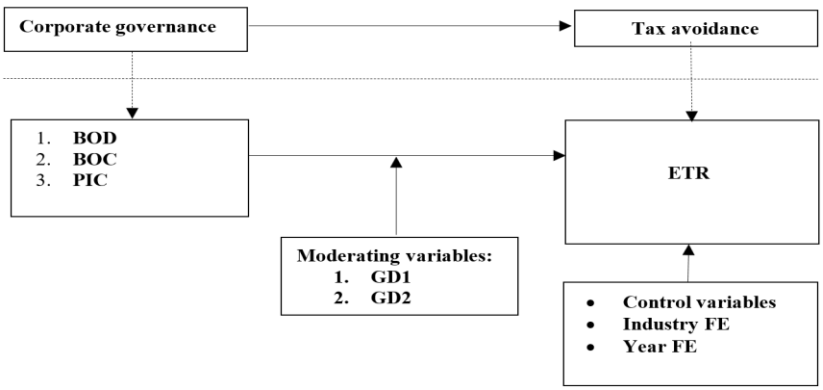

Figure 1. Research model.

3.6. Regression Model

Since this study involves data with both cross-sectional and time-series dimensions, it adopts the Fixed Effects Model (FEM) approach to control for firm-specific effects that may be unobservable yet influence the dependent variable (tax avoidance). In the context of unbalanced panel data, some firms may have incomplete data across the study period due to various reasons, such as delisting or limited reporting. The fixed effects model is more appropriate in this case, as it can address heterogeneity bias arising from unobserved firm-specific characteristics that remain constant over time (Baltagi, 2021).

Unique differences among firms can be controlled using fixed effects, which improves the precision of estimating relationships between variables of interest. Fixed effects eliminate time-invariant components in panel data, for example, institutions or culture, which are not observed but may impact outcomes in panel data. This is especially critical in unbalanced panel datasets, where variation in the number of observations across firms increases the risk of bias if not properly addressed (Wooldridge, 2010).

In unbalanced data, the outcome of the model can be affected by variation in the number of observations. The fixed effects approach is less vulnerable to data loss than the random effects model because it does not assume that firm-specific effects are uncorrelated with independent variables. Therefore, the estimates from the fixed effects model are more robust under the situation of unbalanced data (Hsiao, 2022).

The random effects model assumes that firm-specific effects are uncorrelated with independent variables, an assumption often violated in practice, particularly in socioeconomic research such as corporate governance (Greene, 2012). The fixed effects model addresses this limitation by allowing for correlation between firm-specific effects and the independent variables.

To assess whether gender diversity moderates the effect of board of directors size, board of commissioners size, and the proportion of independent commissioners on tax avoidance, interaction terms between the independent variables and the moderating variable (gender diversity) are included in the regression model.

The specification of the research model is as follows:

$$ETR_{it} = \alpha + \beta_1 CG_{it} + \beta_2 GD_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 DER_{it} + \beta_6 ROA_{it} + \beta_7 industrydummy + \beta_8 yeardummy + \varepsilon_{it} \quad (1)$$

$$ETR_{it} = \alpha + \beta_1 CG_{it} + \beta_2 GD_{it} * CG_{it} + \beta_3 SIZE_{it} + \beta_4 GROWTH_{it} + \beta_5 DER_{it} + \beta_6 ROA_{it} + \beta_7 industrydummy + \beta_8 yeardummy + \varepsilon_{it} \quad (2)$$

Where:

α = Intercept.

β = Estimated parameter.

ETR = Effective Tax Rate.

CG = Corporate Governance Variables (BOD, BOC, PIC).

GD = Gender Diversity (GD1, GD2).

GD*CG = Interaction Variable between Corporate Governance and Gender Diversity.

SIZE = Firm Size.

GROWTH = Firm Growth.

DER = Debt to Asset Ratio.

ROA = Return on Assets.

ε = Error term.

Table 2. Descriptive statistics.

No.	Variable	Obs.	Mean	SD	Min.	p.25th	p.50th	p.75th	Max.
1	ETR	1.660	0.1548	0.5304	-2.3419	-0.0098	0.1802	0.2672	2.9088
2	BOD	1.660	4.6422	1.9427	2	3	4	6	15
3	BOC	1.660	3.4524	1.7805	1	2	3	4	16
4	PIC	1.660	0.5344	0.2222	0	0.3333	0.5	0.6	1
5	GD1	1.660	0.1616	0.2187	0	0	0	0.2857	1
6	GD2	1.660	0.0741	0.2620	0	0	0	0	1
7	SIZE	1.660	28.8386	1.7189	24.6133	27.6053	28.8570	30.0797	32.4399
8	GROWTH	1.660	0.0540	0.2198	-0.5426	-0.0431	0.0337	0.1166	1.1263
9	DER	1.660	1.1107	2.5195	-5.6740	0.1695	0.5630	1.2385	17.9620
10	ROA	1.660	0.0112	0.1409	-0.7896	-0.0189	0.0189	0.0621	0.4270

Note: As a precaution against outliers, the continuous variables ETR, SIZE, GROWTH, DER, and ROA were adjusted using winsorization at the top and bottom 1 percentiles.

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics

The descriptive statistics of this study (Table 2) present the characteristics of the variables used in the analysis, based on 1,660 observations from 380 companies over the study period. The tax avoidance variable (ETR) has a mean value of 0.1548 and a standard deviation of 0.5304, indicating considerable variation among firms in terms of taxes paid relative to pre-tax income. The minimum ETR value is -2.3419, suggesting that some companies recorded negative tax expenses, while the maximum value reaches 2.9088, indicating tax expenses significantly exceeding profits. The median ETR value is 0.1802, implying that half of the sample has an ETR below this figure.

Corporate governance variables, such as the size of the Board of Directors (BOD) and the Board of Commissioners (BOC), show average memberships of 4.6422 and 3.4524, respectively. The standard deviations for both variables suggest significant variation across firms, with the number of BOD members reaching a maximum of 15 and BOC members a maximum of 16. The proportion of independent commissioners (PIC) has an average of 0.5344, indicating that, on average, 53.44% of the commissioners are independent, with some firms reaching the maximum value of 1 (100% independent). Gender diversity, measured through the proportion of women on the board of directors (GD1), has an average value of 0.1616, indicating that, on average, 16.16% of board members are women, although the maximum proportion reaches 1.5 in some companies. The presence of a female CEO (GD2) shows a mean of 0.0741, suggesting that only 7.41% of the sample firms are led by a female CEO. Other control variables, including firm size (SIZE), firm growth (GROWTH), leverage (DER), and profitability (ROA), also exhibit variation that reflects the diversity of financial characteristics among sample firms. The average firm size is 28.83 (log of total assets), with an average asset growth of 5.4%. Leverage has a mean of 1.11, indicating that, on average, firms have slightly more debt than equity, while profitability, as measured by ROA, averages 0.0112 or 1.12%.

4.2. Correlation Analysis

Based on the correlation matrix presented in Table 3, a multicollinearity test was conducted to evaluate the presence of strong correlations among the independent variables that could potentially affect the regression model. In general, the correlation coefficients among the independent variables are below the threshold of 0.8, indicating that multicollinearity is not a significant issue in this model. For instance, the correlation between the Board of Directors (BOD) and the Board of Commissioners (BOC) is 0.3161. Meanwhile, the firm size variable (SIZE) shows moderate correlations with BOD (0.3325) and BOC (0.3964); however, these values are still well below the concerning threshold. These results suggest that the variables can be included in the model without adjustments for multicollinearity. The correlations between the main independent variables (BOD, BOC, PIC, GD1, and GD2) and the dependent variable ETR show varying relationships. The size of the Board of Directors (BOD) has a positive correlation of 0.0284 with ETR, but the relationship is not statistically significant, indicating that the number of directors on the board does not significantly affect the level of tax avoidance. In contrast, the size of the Board of Commissioners (BOC) shows a positive and significant correlation of 0.0485 at the 5% level, suggesting that a larger Board of Commissioners is associated with lower levels of tax avoidance.

Meanwhile, the proportion of Independent Commissioners (PIC) has a negative correlation with ETR of -0.0190, but this relationship is not statistically significant. Gender diversity variables also demonstrate weak relationships with ETR. The proportion of women on the board (GD1) shows a negative correlation of -0.0058 with ETR, while the presence of a female CEO (GD2) has a positive correlation of 0.0256; however, neither is statistically significant. These findings suggest that gender diversity, whether through female representation on the board or through the presence of a female CEO, does not have a strong influence on corporate tax avoidance. Overall, these correlation results indicate that the impact of corporate governance and gender diversity on tax avoidance requires further research using regression models to explore the more complex dynamics of the relationship.

Table 3. Correlation matrix.

No.	Variable	1	2	3	4	5	6	7	8	9	10
1	ETR	1.000									
2	BOD	0.0284	1.000								
3	BOC	0.0485**	0.3161***	1.000							
4	PIC	-0.0190	0.0343	-0.3897***	1.000						
5	GD1	-0.0058	-0.1115***	0.0024	-0.0394	1.000					
6	GD2	0.0256	-0.0675***	-0.0086	-0.0498**	0.3581***	1.000				
7	SIZE	0.0937***	0.3325***	0.3964***	0.0967***	0.0241	-0.1071***	1.000			
8	GROWTH	0.0937***	0.0793***	0.0467*	0.0195	0.0229	-0.0259	0.2014***	1.000		
9	DER	-0.0193	0.0271	0.0176	0.0117	-0.0525**	-0.0395	0.0584**	-0.0140	1.000	
10	ROA	0.1555***	0.1300***	0.1430***	0.0198	0.0561**	-0.0102	0.3075***	0.3263***	-0.1302***	1.000

Note: The symbols ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, based on two-tailed tests.

4.3. Analysis

Table 4 presents the results of a panel data regression analysis encompassing three different models. Model 1 incorporates both gender diversity proxies as independent variables. Model 2 employs GD1 as a moderating variable to examine the effect of corporate governance variables, namely, the Board of Directors (BOD), the Board of Commissioners (BOC), and the proportion of Independent Commissioners (PIC), on the Effective Tax Rate (ETR). Meanwhile, Model 3 utilizes GD2 as a moderating variable. The regression results in Model 1 indicate that corporate governance variables, including the size of the Board of Directors (BOD), the Board of Commissioners (BOC), and the proportion of Independent Commissioners (PIC), do not have a significant effect on the level of tax avoidance (ETR). The coefficient for BOD is -0.0156 with a t-value of -1.12, and the coefficient for BOC is -0.0254 with a t-value of -1.12. Both coefficients suggest a negative relationship, but are not statistically significant. In contrast, PIC has a positive coefficient of 0.0617 with a t-value of 0.51, which is also insignificant. These findings suggest that board size and composition do not have a strong direct influence on corporate tax avoidance. Therefore, corporate governance mechanisms such as board size and board independence may not be key determinants of corporate tax strategy.

Table 4. Panel data regression.

Variable	Model 1		Model 2		Model 3	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
BOD	-0.0156	-1.12	-0.0063	-0.39	-0.0105	-0.76
BOC	-0.0254	-1.12	-0.0293	-1.16	-0.0298	-1.30
PIC	0.0617	0.51	0.0404	0.31	0.0607	0.49
GD1	-0.1640	-1.13				
GD2	0.0836	0.79				
BOD*GD1			-0.0732	-1.07		
BOC*GD1			0.0220	0.34		
PIC*GD1			0.1161	0.37		
BOD*GD2					-0.0154	-0.36
BOC*GD2					0.0362	0.71
PIC*GD2					-0.0203	-0.08
SIZE	0.0649	1.31	0.0656	1.32	0.0587	1.19
GROWTH	-0.0004	-0.26	-0.0004	-0.29	-0.0003	-0.20
DER	0.0000	-1.15	0.0000	-1.14	0.0000	-1.15
ROA	0.1096**	2.42	0.1103**	2.43	0.1109**	2.45
Constant	-1.5591	-1.10	-1.5915	-1.12	-1.4128	-1.00
Industry-FE	Yes		Yes		Yes	
Year-FE	Yes		Yes		Yes	
Clustered SE	Yes		Yes		Yes	
Observation	1.660		1.660		1.660	
R2	0.0111		0.0098		0.0108	
Prob > F	0.1356		0.1792		0.2230	

Note: The symbols **, and * denote statistical significance at the 1% and 5% levels, respectively, based on two-tailed tests.

In Model 2, gender diversity, measured by the proportion of women on the board of directors (GD1), is included in the model, along with an interaction term between GD1 and the corporate governance variables. The coefficient for GD1 is -0.1640 with a t-value of -1.13, indicating a negative but statistically insignificant relationship. The interaction terms between the corporate governance variables (BOD, BOC, PIC) and GD1 are also insignificant. For example, the interaction term BODGD1 has a coefficient of -0.0732 with a t-value of -1.07, while BOCGD1 has a coefficient of 0.0220 with a t-value of 0.34. These results suggest that gender diversity, in the form of the proportion of women on the board, does not moderate the relationship between corporate governance and tax avoidance.

In Model 3, gender diversity is measured by the presence of a female CEO (GD2), including an interaction term between GD2 and the corporate governance variables. The coefficient for GD2 is 0.0836 with a t-value of 0.79, indicating a positive but statistically insignificant relationship. Furthermore, the interaction term between the corporate governance variables and GD2 is also insignificant. For example, the interaction term BOD*GD2 has a

coefficient of -0.0154 with a t-value of -0.36, and BOC*GD2 has a coefficient of 0.0362 with a t-value of 0.71. These results suggest that the presence of a female CEO does not significantly moderate the relationship between corporate governance and the level of tax avoidance.

Consistently across all models, the control variable ROA shows a significant positive effect on ETR. The coefficient of ROA is approximately 0.11, with t-values ranging from 2.42 to 2.45, indicating that more profitable firms tend to exhibit higher levels of tax avoidance. This supports previous findings suggesting that more profitable companies may have a greater capacity to engage in tax avoidance strategies. However, other control variables such as firm size (SIZE), growth (GROWTH), and leverage (DER) do not exhibit significant effects on ETR.

Overall, the low R-squared values (approximately 0.01) in all three models indicate that the models explain only a small portion of the variation in ETR. In addition, the insignificant Prob > F values in all models (Model 1: 0.1356; Model 2: 0.1792; Model 3: 0.2230) suggest that, collectively, the independent and moderating variables do not significantly contribute to the explanatory power of the models. These findings imply that there may be other factors beyond corporate governance and gender diversity that have a stronger influence on tax avoidance levels, warranting further investigation to enhance the predictive power of the model.

4.4. Robustness Check (Lagged Analysis)

The regression results using lagged variables (Table 5) were conducted to test the robustness of the main model in this study. In Model 1, the lagged variable BOD (-1) shows a positive coefficient of 0.0022 with a t-value of 0.10, while BOC (-1) has a significantly negative coefficient of -0.0949 with a t-value of -2.94 (significant at the 1% level). This indicates that the size of the Board of Commissioners in the previous period has a significant negative relationship with the current period's effective tax rate (ETR), whereas the size of the Board of Directors does not have a significant effect. In contrast, the proportion of Independent Commissioners (PIC (-1)) has a negative coefficient of -0.1087 with a t-value of -0.67, but the relationship is not statistically significant.

Table 5. Panel data regression test results with lagged independent variables.

Variable	Model 1		Model 2		Model 3	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
BOD (-1)	0.0022	0.10	0.0070	0.29	0.0004	0.02
BOC (-1)	-0.0949***	-2.94	-0.1094***	-3.08	-0.0968***	-2.98
PIC (-1)	-0.1087	-0.67	-0.0989	-0.56	-0.0955	-0.58
GD1 (-1)	0.1184	0.55				
GD2 (-1)	0.0647	0.47				
BOD*GD1 (-1)			-0.0202	-0.20		
BOC*GD1 (-1)			0.0894	0.96		
PIC*GD1 (-1)			-0.0689	-0.15		
BOD*GD2 (-1)					0.0187	0.29
BOC*GD2 (-1)					0.0467	0.64
PIC*GD2 (-1)					-0.2567	-0.77
SIZE (-1)	-0.0926	-1.28	-0.0924	-1.28	-0.0881	-1.22
GROWTH (-1)	0.0117	0.22	0.0121	0.23	0.0119	0.22
DER (-1)	-0.0001	-1.62	-0.0001	-1.61	-0.0001	-1.62
ROA (-1)	-0.0412	-0.69	-0.0414	-0.69	-0.0422	-0.71
Constant	3.2062	1.55	3.2150	1.55	3.0972	1.50
Industry-FE	Yes		Yes		Yes	
Year-FE	Yes		Yes		Yes	
Clustered SE	Yes		Yes		Yes	
Observation	1.264		1.264		1.264	
R2	0.0031		0.0030		0.0031	
Prob > F	0.1461		0.1665		0.1668	

Note: The symbols *** and * denote statistical significance at the 1%, and 10% levels, respectively, based on two-tailed tests.

In Model 2, gender diversity, measured by the proportion of women on the board (GD1 (-1)), is included in the model. The coefficient for GD1 (-1) is positive at 0.1184 with a t-value of 0.55, but it is not statistically significant. Additionally, the interaction between GD1 (-1) and corporate governance variables (BOD (-1), BOC (-1), PIC (-1)) also did not show significant results. For example, the interaction between BOC (-1) and GD1 (-1) has a positive coefficient of 0.0894 with a t-value of 0.96. These results indicate that gender diversity, in the form of female representation on the board, does not moderate the relationship between corporate governance and tax avoidance in the subsequent period.

In Model 3, gender diversity is measured by the presence of a female CEO (GD2 (-1)) along with its interaction with lagged governance variables. The coefficient for GD2 (-1) is positive at 0.0647 with a t-value of 0.47, but it is not statistically significant. Similarly, the interaction between corporate governance variables and GD2 (-1) also shows no significant results. For instance, PIC (-1)*GD2 (-1) has a negative coefficient of -0.2567 with a t-value of -0.77, while BOC (-1)*GD2 (-1) has a positive coefficient of 0.0467 with a t-value of 0.64. These findings indicate that the presence of a female CEO in the previous period does not significantly moderate the relationship between corporate governance and tax avoidance.

The control variables in the lagged model also show consistent results with the main analysis. Firm size (SIZE (-1)) has a negative coefficient of -0.0926 with a t-value of -1.28 but is not statistically significant. Firm profitability (ROA (-1)) also shows a negative relationship with ETR, with a coefficient of -0.0412 and a t-value of -0.69, which is also not significant. This suggests that the financial performance of the previous period does not significantly affect the current level of tax avoidance.

Overall, the very low R-squared values (approximately 0.003) across all three models indicate that the use of lagged variables does not provide additional predictive power regarding variations in ETR. Furthermore, the non-significant Prob > F values in all models suggest that these models fail to adequately explain the relationship between the independent variables and ETR. Therefore, although the use of lagged variables provides additional perspective, the results remain consistent with the main analysis, suggesting that other factors beyond corporate governance and gender diversity may be more relevant in influencing the level of tax avoidance.

4.5. Discussion

4.5.1. The Effect of Corporate Governance on Tax Avoidance

The research findings indicate that corporate governance has varying effects on the level of tax avoidance (ETR). Based on the regression results, the size of the Board of Directors (BOD) does not have a significant effect on tax avoidance. This may be due to the heterogeneous roles of directors across companies. As suggested by Armstrong et al. (2013), directors often have incentives to engage in tax avoidance strategies to maximize corporate profits. Conversely, the size of the Board of Commissioners (BOC) shows a significant negative effect on ETR in the model using lagged variables, supporting the findings of Fahriani and Priyadi (2016), who argue that more effective oversight by the board of commissioners can reduce the opportunity for tax avoidance. However, the proportion of Independent Commissioners (PIC) does not show a significant relationship, indicating that the presence of independent commissioners in the Indonesian context may be less effective in suppressing tax avoidance compared to countries with more advanced governance systems (Seidman & Stomberg, 2011).

This finding can be explained through the perspective of agency theory, which states that a larger board can complicate decision-making and reduce accountability, thus creating opportunities for aggressive tax avoidance strategies (Desai & Dharmapala, 2006). However, the existence of an optimal Board of Commissioners can provide stronger oversight of managerial activities, thereby reducing the likelihood of tax avoidance practices. The presence of independent commissioners, which is expected to increase transparency, did not have a significant effect on tax avoidance. This may be due to institutional and cultural challenges in corporate governance in Indonesia. As

suggested by Mashaykhi and Seyyedi (2015), the effectiveness of independent commissioners may be limited in environments that lack strong regulatory support for governance practices.

Overall, these findings suggest that corporate governance, particularly through board size, has a greater impact on tax avoidance than other factors. This supports Armstrong et al. (2013) argument that an effective board structure can play a significant role in shaping corporate tax behavior. A more structured board of directors and commissioners can reduce the potential for tax avoidance, although the proportion of independent commissioners does not appear to have a significant impact. Therefore, it is crucial for companies in Indonesia to consider not only board size but also to improve the quality of board oversight through training and governance reforms, as recommended by Kerr et al. (2016). Such initiatives can encourage more ethical governance and better compliance with tax regulations.

4.5.2. Moderating Effect of Gender Diversity on Corporate Governance and Tax Avoidance Nexus

The regression results in Model 1 indicate that neither the proportion of women on the board of directors (GD1) nor the presence of a female CEO (GD2) has a significant direct effect on the level of tax avoidance (ETR). In the regression model, GD1 shows a negative coefficient (-0.1640) with a t-value of -1.13, indicating that although the presence of women on the board tends to reduce tax avoidance, the effect is not statistically significant. Similarly, GD2 has a positive coefficient (0.0836) with a t-value of 0.79, which is also not significant. This finding does not support the results of previous studies, such as those conducted by Peni and Vähämaa (2010) and Gul et al. (2011), which stated that women tend to have higher ethical standards and a more risk-averse attitude, thereby reducing corporate tax aggressiveness.

This insignificance may be explained by the institutional context and corporate culture in Indonesia, where women on boards or serving as CEOs may not yet have sufficient influence to change corporate tax policies. Although previous research suggests that women can encourage better governance practices and increase transparency (Gul et al., 2011; Harymawan et al., 2019), regression results indicate that this influence is not directly reflected in tax avoidance policies. One possible explanation is that women in leadership positions often face structural barriers that limit their ability to influence strategic decisions, including those related to taxation.

Overall, although gender diversity is considered an important element in improving corporate governance, the findings of this study indicate that the direct effect of GD1 and GD2 on ETR is insignificant. This highlights the need to strengthen the role of women in strategic decision-making and undertake governance reforms to ensure that the presence of women on boards or as CEOs can have a tangible impact on corporate policies, including reducing tax avoidance. Thus, although gender diversity has significant potential to improve good governance, its effectiveness in the context of tax avoidance may require stronger institutional support and a more inclusive corporate culture (Hoseini et al., 2019; Lanis et al., 2017).

The findings of this study (models 2 and 3) also indicate that gender diversity on the board, either through the proportion of female members (GD1) or the presence of a female CEO (GD2), does not significantly moderate the relationship between corporate governance (BOD, BOC, and PIC) and tax avoidance (ETR). In the regression model with the moderating variable GD1, the interaction between the size of the Board of Directors (BOD) and GD1 shows a negative coefficient (-0.0732) but is not statistically significant. Similarly, the interaction between the size of the Board of Commissioners (BOC) and GD1 produces a positive coefficient (0.0220), which is also not significant. These results indicate that the presence of women on the board does not provide a consistent moderating effect on the relationship between corporate governance and tax avoidance. This finding contradicts previous research by Peni and Vähämaa (2010) and Richardson et al. (2016), which argues that female board members tend to increase oversight, improve transparency, and reduce corporate tax avoidance.

In the model involving the presence of a female CEO (GD2), the results also show that the interaction between the moderating variable GD2 and the corporate governance variables is not significant. For example, the interaction between BOC and GD2 produces a positive coefficient (0.0467) with a t-value of 0.64, while the interaction between

PIC and GD2 shows a negative coefficient (-0.2567) with a t-value of -0.77. These findings indicate that the presence of a female CEO in a company does not significantly change the relationship between corporate governance and tax avoidance. This may reflect cultural and structural limitations in Indonesia that reduce the influence of women in leadership positions, despite previous theory suggesting that women tend to behave more ethically and are more risk-averse in decision-making (Gul et al., 2011; Harymawan et al., 2019).

Regardless of prior research proposing that corporate governance and tax avoidance can be mitigated with the presence of gender diversity (Lanis et al., 2017), this study did not find strong supportive evidence in relation to Indonesian firms. Differences in culture, regulatory structure, and the manner in which governance is practiced within a country may explain this discrepancy in Indonesia. Providing women with more governance reforms would allow these women to have more influence and control over strategic decisions, which is an important finding of the study. Additionally, further exploration is required to understand some of the contextual factors why gender diversity can amplify the effect of tax avoidance, for example, by increasing the educational and training qualifications of women who occupy crucial board and commissioner positions. In conclusion, though gender diversity is a vital component of corporate governance, its relationship with tax avoidance seems to require more developed governance frameworks and corporate cultures.

4.5.3. The Effect of Control Variable

Regression outcomes report that firm size (SIZE), asset growth (GROWTH), leverage (DER), and profitability (ROA) have varying effects on the size of tax avoidance (ETR). For the base model, SIZE possesses a positive coefficient (approximately 0.065) but is not significant in all models, both with and without moderation. This suggests that company size, measured by the log of total assets, has no significant relationship with tax avoidance in this study. The GROWTH variable, measured by asset growth over a period of one year, instead possesses a very modest but non-significant coefficient. This suggests that asset growth is not significantly related to tax avoidance practices, perhaps reflecting that high-growth companies are more focused on business expansion than tax planning.

Conversely, return on assets (ROA) is positively and strongly significant in all of the main models. The coefficient of ROA is approximately 0.11, indicating that companies that are more profitable utilize tax avoidance to a lesser extent. This finding is consistent with the perception that profitable companies have a better capacity to pay taxes and will bear more public pressure to adhere to tax regulations (Armstrong et al., 2013). The leverage measure, DER, also shows a negative but slight and insignificant coefficient, which means that a firm's debt-to-equity ratio is not closely associated with tax evasion according to this study. Generally, these findings reveal that profitability (ROA) is the most significant control variable consistently explaining tax avoidance, while firm size (SIZE), growth (GROWTH), and leverage (DER) play a weaker or insignificant role.

5. CONCLUSION

5.1. Conclusion

This study investigates the effect of corporate governance on tax avoidance (measured by the Effective Tax Rate, ETR), with gender diversity as a moderating variable. Employing a quantitative approach using unbalanced panel data analysis and the fixed effects method, the study analyzes 1,660 observations from 380 publicly listed companies on the Indonesia Stock Exchange (IDX) over the 2018–2022 period. The sample was selected based on specific criteria, excluding companies from the financial sector, delisted firms, and those with incomplete data. This approach ensures the relevance of the data used to assess the relationship between the independent variables (board of directors' size, board of commissioners' size, and the proportion of independent commissioners) and tax avoidance, as well as the moderating role of gender diversity.

The findings indicate that corporate governance, particularly the size of the board of directors (BOD) and the proportion of independent commissioners (PIC), does not have a significant effect on tax avoidance. However, the size

of the board of commissioners (BOC) shows a significant negative relationship with ETR in the model with lagged variables, supporting the notion that more effective oversight by the board may reduce opportunities for tax avoidance. Meanwhile, gender diversity, whether through the proportion of women on the board (GD1) or the presence of a female CEO (GD2), does not demonstrate a significant direct or moderating effect on the relationship between corporate governance and tax avoidance. These findings suggest that the impact of gender diversity on corporate governance within the Indonesian context can still be constrained by institutional and cultural factors.

Overall, this study concludes that gender diversity and corporate governance have a limited influence on tax avoidance in Indonesia. Only the profitability variable (ROA) remains to show a significant influence on ETR, where more profitable firms lean towards the adoption of lower tax avoidance behavior. The findings reinforce the need for more inclusive corporate governance reforms and efforts to promote women's advancement in strategic decision-making. Future studies are recommended to explore other possibly more suitable factors influencing tax avoidance, including specific institutional drivers and corporate culture in Indonesia.

The results of this research have practical implications for corporate governance practices and strategic decision-making in the context of tax avoidance. The conclusion that the size of the board of commissioners (BOC) significantly impacts tax avoidance confirms the need to balance and improve the supervisory role of the board. Companies may enhance their boards' effectiveness by improving the quality of training provided, enforcing more stringent governance codes of ethics, and optimizing board composition, which reduces the likelihood of excessive tax avoidance to a minimum. Furthermore, the conclusion that independent commissioners (PIC) play a limited role in reducing tax avoidance suggests that corporate governance reform in Indonesia should place greater emphasis on strengthening the independence and oversight capacity of independent commissioners. This could be achieved by increasing the transparency of their appointment processes and granting them greater authority in strategic corporate decision-making.

From the perspective of gender diversity, the absence of women in the board of directors or CEO positions greatly influences tax avoidance strategies, which proves that corporate women's leadership needs more work to empower them. Institutions, regulators, and companies must create an enabling environment that supports women's participation in strategic decision-making, including leadership training and the cultivation of a more inclusive corporate culture. In addition, these results provide valuable insights for regulators and stakeholders to design corporate governance policies that are more responsive to the local context, with a focus on improving board oversight quality and enhancing board diversity. Therefore, this research not only assists companies in developing appropriate governance policies but also provides materials for policies on governance development that require improvement to be more open and defensible.

5.2. Research Limitation

This study has several limitations that should be acknowledged. First, the research utilizes secondary data from the financial statements and annual reports of companies listed on the Indonesia Stock Exchange (IDX). These documents may contain inaccuracies or omissions determined by the company's reporting system. Second, the research considers only three corporate governance indicators (board of directors' size, board of commissioners' size, and the ratio of independent commissioners) and two indicators of gender diversity (ratio of female board members to male members and having a woman as a CEO), which do not capture the multifaceted nature of governance frameworks. Third, the study does not consider the institutional and cultural aspects that might affect the degree of corporate governance and gender diversity, which limits the understanding of the accuracy of the results in regard to the phenomenon in Indonesian firms. Thus, it is suggested that further research include more diverse parameters with greater depth to achieve a more sophisticated comprehension.

5.3. Research Suggestion

Future research is suggested to expand the scope of corporate governance to include the involvement of board member specialization, the ratio of experts to non-expert board members, their qualitative meetings, and the existence of specific committees such as audit committees. Additionally, introducing other moderating variables such as institutional ownership or the presence of foreign investors may offer more comprehensive insights into the factors influencing tax avoidance. A qualitative approach could also be employed to explore the cultural and institutional dynamics that shape the effectiveness of corporate governance and gender diversity in Indonesia. Expanding the study period or conducting comparative research across countries may provide a broader and more relevant perspective for formulating more effective corporate governance policies.

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REFERENCES

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics, 94*(2), 291-309. https://doi.org/10.1016/j.jfineco.2008.10.007

Antle, R. (1982). The auditor as an economic agent. *Journal of Accounting Research, 20*(2), 503-527. https://doi.org/10.2307/2490884

Armstrong, C. S., Larcker, D. F., Ormazabal, G., & Taylor, D. J. (2013). The relation between equity incentives and misreporting: The role of risk-taking incentives. *Journal of Financial Economics, 109*(2), 327-350. https://doi.org/10.1016/j.jfineco.2013.02.019

Atwood, T. J., Drake, M. S., Myers, J. N., & Myers, L. A. (2012). Home country tax system characteristics and corporate tax avoidance: International evidence. *The Accounting Review, 87*(6), 1831-1860. https://doi.org/10.2308/accr-50222

Baltagi, B. H. (2021). Unbalanced panel data models', in Baltagi, B. H., Econometric Analysis of panel data. In (pp. 229–257). Cham: Springer International Publishing.

Boussaidi, A., & Hamed, M. S. (2015). The impact of governance mechanisms on tax aggressiveness: Empirical evidence from Tunisian context. *Journal of Asian Business Strategy, 5*(1), 1-12. https://doi.org/10.18488/journal.1006/2015.5.1/1006.1.1.12

Chen, J., Leung, W. S., & Goergen, M. (2017). The impact of board gender composition on dividend payouts. *Journal of Corporate Finance, 43*, 86-105. https://doi.org/10.1016/j.jcorpfin.2017.01.001

Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics, 79*(1), 145-179. https://doi.org/10.1016/j.jfineco.2005.02.002

Fahriani, M., & Priyadi, M. P. (2016). The effect of good corporate governance on aggressive tax actions in manufacturing companies. *Journal of Accounting Science and Research, 5*(7), 1–20.

Francoeur, C., Labelle, R., & Sinclair-Desgagné, B. (2008). Gender diversity in corporate governance and top management. *Journal of Business Ethics, 81*(1), 83-95. https://doi.org/10.1007/s10551-007-9482-5

Greene, W. H. (2012). *Econometric analysis* (7th ed.). England: Pearson.

Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics, 51*(3), 314-338. https://doi.org/10.1016/j.jacceco.2011.01.005

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics, 50*(2-3), 127-178. https://doi.org/10.1016/j.jacceco.2010.09.002

Harymawan, I., Nasih, M., & Noeraini, D. H. (2019). Does a female audit engagement partner offer higher audit quality? *Revista ESPACIOS*, *40*(18), 22-30.

Hoseini, M., Safari Gerayli, M., & Valiyan, H. (2019). Demographic characteristics of the board of directors' structure and tax avoidance: Evidence from Tehran Stock Exchange. *International Journal of Social Economics*, *46*(2), 199-212. https://doi.org/10.1108/IJSE-11-2017-0507

Hsiao, C. (2022). *Analysis of panel data*. Econometric Society Monographs, No. 64, Cambridge, UK: Cambridge University Press.

Jarboui, A., Kachouri Ben Saad, M., & Riguen, R. (2020). Tax avoidance: Do board gender diversity and sustainability performance make a difference? *Journal of Financial Crime*, *27*(4), 1389-1408. https://doi.org/10.1108/JFC-09-2019-0122

Kerr, J. N., Price, R., & Román, F. J. (2016). *The effect of corporate governance on tax avoidance: Evidence from governance reform*. Paper presented at the Proceedings Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association.

Khaoula, A., & Ali, Z. M. (2012). Demographic diversity in the board and corporate tax planning in American firms. *Business Management and Strategy*, *3*(1), 72-86. https://doi.org/10.5296/bms.v3i1.1851

Lakhal, F., Aguir, A., Lakhal, N., & Malek, A. (2015). Do women on boards and in top management reduce earnings management? Evidence in France. *Journal of Applied Business Research*, *31*(3), 1107–1118. https://doi.org/10.19030/jabr.v31i3.9236

Lanis, R., Richardson, G., & Taylor, G. (2017). Board of director gender and corporate tax aggressiveness: An empirical analysis. *Journal of Business Ethics*, *144*(3), 577-596. https://doi.org/10.1007/s10551-015-2815-x

Lee, R.-J., & Kao, H.-S. (2018). The impacts of IFRSs and auditor on tax avoidance. *Advances in Management and Applied Economics*, *8*(6), 17-53.

Mashaykhi, B., & Seyyedi, S. J. (2015). Corporate governance and tax avoidance. *Journal of Accounting Knowledge*, *6*(20), 83-103.

Maydew, E., & Shackelford, D. (2005). *The changing role of auditors in corporate tax planning*. Cambridge, Mass., USA: National Bureau of Economic Research.

Peni, E., & Vähämaa, S. (2010). Female executives and earnings management. *Managerial Finance*, *36*(7), 629-645. https://doi.org/10.1108/03074351011050343

Richardson, G., Taylor, G., & Lanis, R. (2016). Women on the board of directors and corporate tax aggressiveness in Australia: An empirical analysis. *Accounting Research Journal*, *29*(3), 313-331. https://doi.org/10.1108/ARJ-09-2014-0079

Riguen, R., Salhi, B., & Jarboui, A. (2020). Do women in board represent less corporate tax avoidance? A moderation analysis. *International Journal of Sociology and Social Policy*, *40*(1/2), 114-132. https://doi.org/10.1108/IJSSP-10-2019-0211

Seidman, J., & Stomberg, B. (2011). Why are option compensation and tax sheltering negatively related. *Journal of Financial Studies*, *63*(1), 113-127.

Whittington, G. (1993). Corporate governance and the regulation of financial reporting. *Accounting and Business Research*, *23*(sup1), 311-319. https://doi.org/10.1080/00014788.1993.9729899

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). Cambridge: MIT Press.

Zeng, T. (2019). Country-level governance, accounting standards, and tax avoidance: A cross-country study. *Asian Review of Accounting*, *27*(3), 401-424. https://doi.org/10.1108/ARA-09-2018-0179