



## How ESG Disclosure and Digital Transformation Can Reduce Tax Avoidance? The Role of Firm Size as a Moderator in Indonesian

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### ABSTRACT

Tax avoidance remains a critical challenge for Indonesian firms, eroding public revenues and market fairness. This study examines the effect of ESG disclosure and digital transformation on mitigating corporate tax avoidance, with firm size as a moderator. Panel data from 250 listed Indonesian companies over 2018–2024 were analyzed using panel data regression with fixed effects. Moderation analysis was conducted by including interaction terms between firm size, ESG disclosure, and digital transformation. Results show that both ESG disclosure and digital transformation significantly reduce tax avoidance, and this mitigating effect is stronger in larger firms, while smaller firms exhibit a weaker relationship. These findings extend agency theory by framing ESG and digital initiatives as governance mechanisms against aggressive tax practices. Practically, firms should tailor ESG and digital strategies to their scale to bolster tax compliance.

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## **INTRODUCTION**

Tax avoidance has long been a central concern for governments, investors, and scholars, as it reduces fiscal capacity and undermines the fairness of markets. In Indonesia, this problem is particularly critical for the manufacturing sector, which contributes significantly to both economic growth and state revenue. Yet, several studies suggest that manufacturing firms frequently engage in strategies to minimize tax obligations, raising questions about their commitment to ethical and sustainable business practices (Hanlon & Heitzman, 2010; Uzliawati et al., 2023). When companies aggressively reduce their tax burden, the broader social costs are substantial: not only are public services underfunded, but trust between corporations and society is also eroded (Lanis & Richardson, 2016).

In response to these concerns, environmental, social, and governance (ESG) disclosure has emerged as an important instrument of corporate accountability. ESG reporting reflects a company's willingness to communicate its responsibility toward stakeholders and society at large. From the perspective of legitimacy theory, firms engage in ESG disclosure to maintain their social license to operate, ensuring that their actions remain acceptable in the eyes of the public (Freeman, 2010). Empirical studies in Indonesia confirm that firms with higher levels of ESG disclosure are less likely to adopt aggressive tax strategies, as transparent reporting imposes reputational and monitoring costs on opportunistic behavior (Hidayat & Zuhroh, 2023). In other words, ESG practices not only address sustainability but also act as a governance mechanism capable of restraining excessive tax avoidance (Christensen & Murphy, 2004).

At the same time, the rapid pace of digital transformation has reshaped how firms manage information, interact with regulators, and structure their compliance systems. The adoption of big data, cloud platforms, and artificial intelligence improves the efficiency of reporting and reduces asymmetry between companies and tax authorities (Uzliawati et al., 2023). In theory, this transparency should discourage firms from engaging in aggressive tax practices. However, evidence from Indonesian multinational companies between 2020 and 2024 reveals a more complex picture: while digitalization can enhance compliance, it also enables sophisticated methods of tax planning, suggesting a paradoxical role of technology (Huang & Wei, 2023). Thus, digital transformation may either function as a deterrent or as an enabler of tax avoidance, depending on the governance environment.

The relationship between ESG, digitalization, and tax avoidance cannot be fully understood without considering the role of firm size. Larger firms are typically subject to stronger scrutiny from regulators, investors, and the media, which heightens the reputational risks of engaging in aggressive tax strategies (Watts & Zimmerman, 1986). They also tend to have more resources to invest in ESG disclosure and advanced digital systems, which strengthens the potential of these mechanisms to limit tax avoidance (Maheresmi et al., 2023). By contrast, smaller firms may disclose less ESG information and have limited capacity to implement digital tools effectively, which weakens the governance benefits of

both practices. This moderating role of firm size highlights why the same ESG or digital initiatives may have very different effects across companies of different scales.

Despite growing academic interest, studies have rarely investigated how ESG disclosure and digital transformation jointly affect tax avoidance in Indonesia, particularly within the manufacturing sector during the most recent period of 2020–2024. Prior research has often treated ESG, firm size, or digital transformation in isolation, leaving little understanding of how these factors interact. This gap is significant because Indonesia's manufacturing sector is experiencing both heightened pressure for ESG accountability and a surge in digital adoption, while tax avoidance remains a pressing challenge (Hidayat & Zuhroh, 2023)

This study aims to address this gap by examining the combined influence of ESG disclosure and digital transformation on tax avoidance among Indonesian manufacturing firms listed on the Indonesia Stock Exchange between 2020 and 2024, with firm size as a moderating factor. Drawing on agency and legitimacy theories, we argue that ESG disclosure and digital transformation can function as governance mechanisms, but their effectiveness is contingent on organizational scale. By providing new empirical evidence, this research contributes to a more nuanced understanding of how sustainability practices and digital adoption intersect with corporate tax behavior in emerging markets. In practice, the findings also offer guidance to policymakers and managers, underscoring the importance of tailoring ESG and digital strategies to firm size in order to foster more equitable and sustainable tax compliance.

## LITERATURE REVIEW

### *Agency Theory*

Agency theory provides a fundamental lens for understanding corporate tax behavior. In this perspective, managers (agents) often pursue personal or short-term objectives that may conflict with the long-term interests of shareholders (principals) (Jensen & Meckling, 1976). Tax avoidance, while reducing tax payments, can expose firms to reputational and regulatory risks that may harm shareholders' value in the long run (Desai & Dharmapala, 2006). Mechanisms such as ESG disclosure and digital transformation are seen as governance tools that align managerial behavior with shareholder and stakeholder interests by increasing transparency and monitoring.

### *Legitimacy Theory*

Legitimacy theory posits that organizations continuously seek to ensure that their operations are perceived as socially acceptable by stakeholders and society at large (Suchman, 1995). ESG disclosure plays a central role in this process, as it demonstrates corporate accountability for environmental and social responsibilities. Firms with comprehensive ESG reporting are more likely to avoid aggressive tax practices, since such practices could undermine their legitimacy and social license to operate (Freeman, 2010; Lanis & Richardson, 2016). Thus, ESG disclosure acts as a reputational safeguard that discourages tax avoidance.

### *Stakeholder Theory*

Stakeholder theory extends the discussion by emphasizing that firms must balance the interests of diverse stakeholder groups, including governments, investors, employees, and communities (Richter & Dow, 2017). Aggressive tax avoidance, although beneficial in the short term, conflicts with stakeholder expectations for fairness and responsibility. By embracing ESG practices and digitalization, firms can demonstrate commitment to stakeholder accountability, thereby reducing incentives for opportunistic tax behavior.

## METHODOLOGY

### *Research Design*

This study employs a quantitative research design with a causal-explanatory approach to analyze the effect of ESG disclosure and digital transformation on tax avoidance, moderated by firm size. The research uses secondary panel data collected from annual reports, sustainability reports, and audited financial statements of Indonesian manufacturing firms listed on the Indonesia Stock Exchange (IDX) between 2020 and 2024. Panel data regression with moderation testing is adopted to capture both cross-sectional and time-series variations, enabling robust inferences regarding causal relationships (Gujarati, 2009).

### *Population and Sample*

The population consists of all manufacturing companies listed on the IDX during the 2020–2024 period. To ensure the validity and reliability of this research, a purposive sampling method was applied in selecting the study sample. The population consists of all manufacturing firms listed on the Indonesia Stock Exchange (IDX) during the period 2020–2024. Several criteria were then applied to narrow down the sample, including consistency of listing, completeness of financial and sustainability reports, and availability of data required to measure tax avoidance, ESG disclosure, and digital transformation indicators. The detailed sample selection process is summarized in Table 1.

Table 1. Purposive Sampling

No	Criteria of Sample Selection	Number of Firms
1	Manufacturing firms listed on the Indonesia Stock Exchange (IDX) during 2020–2024	193
2	Firms not consistently listed during 2020–2024 (delisted, suspended, merged)	(25)
3	Firms without complete annual reports or sustainability reports	(68)
4	Firms lacking data to calculate tax avoidance (ETR/CETR), ESG disclosure, or digital transformation indicators	(50)
<b>5</b>	<b>Final sample firms</b>	<b>50</b>
	Observation years (2020–2024, 5 years × 50 firms)	<b>250 firm-year observations</b>

### *Variable Measurement*

#### **a. Dependent Variable: Tax Avoidance (TA)**

Tax avoidance is measured using the Effective Tax Rate (ETR), calculated as:

$$\text{ETR} = \frac{\text{Income Tax Expense}}{\text{Pre-tax Income}}$$

A lower ETR indicates higher tax avoidance (Hanlon & Heitzman, 2010). To improve robustness, Cash Effective Tax Rate (CETR) is also used as an alternative proxy.

#### **b. Independent Variable**

##### *ESG Disclosure (ESG)*

ESG disclosure is measured using a content analysis approach based on the Global Reporting Initiative (GRI) standards and Indonesian ESG disclosure indices. The disclosure index is constructed as:

$$\text{ESG} = \frac{\text{Total items disclosed}}{\text{Total disclosure items (33 indicators)}}$$

This proportion reflects the comprehensiveness of a firm's ESG reporting (Oktaviani et al., 2023; Widiastutik et al., 2024).

##### *Digital Transformation (DT)*

Digital transformation is proxied by a Digital Transformation Index (DTI), constructed from textual analysis of annual reports and corporate disclosures, following prior studies (Ghofar et al., 2025). Key indicators include:

- a. Investment in digital infrastructure (IT, cloud systems, AI, e-commerce platforms).
- b. Adoption of digital reporting systems (e-reporting, e-tax, ERP systems).
- c. Keywords related to digital initiatives disclosed in annual reports.

The index is scaled between 0 and 1, with higher values representing more advanced digital transformation.

#### **c. Moderating Variable: Firm Size (FS)**

Firm size is measured using the natural logarithm of total assets (LnTA), consistent with prior tax avoidance and governance literature (Li et al., 2022).

#### **d. Control Variables**

To improve model validity, several control variables are included:

- a. Leverage (LEV): measured by debt-to-assets ratio.
- b. Profitability (ROA): measured by return on assets.
- c. Capital Intensity (CAPINT): measured by fixed assets to total assets ratio.

##### *Data Analysis Technique*

The analysis proceeds using Eviews 12 with several steps:

1. Descriptive Statistics: summarize variable distributions (mean, median, standard deviation).
2. Classical Assumption Tests: normality, multicollinearity (VIF), heteroskedasticity, and autocorrelation to ensure model validity.
3. Panel Data Regression:
  - a. Chow Test and Hausman Test are conducted to determine the best model (Fixed Effect Model vs Random Effect Model).

b. The base regression model:

$$TA_{it} = \alpha + \beta_1ESG_{it} + \beta_2DT_{it} + \beta_3FS_{it} + \beta_4Controls_{it} + \varepsilon_{it}$$

4. Moderation Analysis: interaction terms between firm size and the independent variables are included:

$$TA_{it} = \alpha + \beta_1ESG_{it} + \beta_2DT_{it} + \beta_3FS_{it} + \beta_4(ESG_{it} \times FS_{it}) + \beta_5(DT_{it} \times FS_{it}) + \beta_6Controls_{it} + \varepsilon_{it}$$

5. Robustness Tests:

a. Alternative proxies (CETR instead of ETR).

## RESULT AND DISCUSSION

### *Descriptive Statistics*

Table 2 presents the descriptive statistics for all variables used in the study, including tax avoidance (TA), ESG disclosure (ESG), digital transformation (DT), firm size (FS), leverage (LEV), and profitability (ROA).

Table 2. Descriptive Statistics Test

Variable	Mean	Median	Std. Dev.	Min	Max	Obs.
TA (ETR)	0.248	0.251	0.072	0.102	0.391	250
ESG	0.561	0.552	0.131	0.320	0.812	250
DT	0.487	0.481	0.115	0.244	0.721	250
FS (LnTA)	28.64	28.51	1.642	25.77	32.14	250
LEV	0.413	0.397	0.176	0.112	0.734	250
ROA	0.071	0.068	0.052	-0.032	0.193	250

Results show that the average ETR is 24.8%, lower than the statutory tax rate of 25%, indicating that firms practice some degree of tax avoidance. The mean ESG disclosure is 56.1%, reflecting moderate adoption of ESG reporting among Indonesian manufacturing firms.

### *Classical Assumption Tests*

1. Normality Test (Jarque-Bera): The p-value > 0.05, indicating residuals are normally distributed.
2. Multicollinearity Test (VIF): All variables have VIF < 10, suggesting no serious multicollinearity.
3. Heteroskedasticity Test (Breusch-Pagan): p-value > 0.05, confirming homoskedasticity.
4. Autocorrelation Test (Durbin-Watson): DW statistic = 1.95, close to 2, indicating no autocorrelation problem.

These results confirm that the panel regression models meet classical assumptions and are valid for hypothesis testing.

### *Model Selection*

To determine the most appropriate panel regression model, several tests were conducted:

1. Chow Test: F-statistic = 12.48, p < 0.01, Fixed Effect Model (FEM) preferred over Pooled OLS.

- Hausman Test:  $\chi^2 = 21.34$ ,  $p < 0.01$ , FEM preferred over Random Effect Model.
  - Lagrange Multiplier Test: redundant as Hausman favors FEM.
- Thus, the Fixed Effect Model (FEM) is chosen for hypothesis testing.

*Hypothesis Testing*

**Main Effects**

To evaluate the proposed hypotheses, panel data regression analysis was conducted. The results of the main effects model are presented in Table 3.

**Table 3. Regression Results**

Variable	Coefficient	t-Statistic	p-Value
ESG	-0.042	-3.116	0.002 **
DT	-0.035	-2.754	0.006 **
FS	-0.018	-1.925	0.055 *
LEV	0.027	2.038	0.043 *
ROA	-0.049	-3.287	0.001 **
C	0.391	8.624	0.000 ***
Adj. R <sup>2</sup> = 0.412			
F-stat = 16.73 (p < 0.01)			

**Interpretation:**

- ESG disclosure significantly reduces tax avoidance ( $\beta = -0.042$ ;  $p < 0.01$ ).
- Digital transformation also negatively affects tax avoidance ( $\beta = -0.035$ ;  $p < 0.01$ ).

*Moderation Effects*

To evaluate the proposed hypotheses, panel data regression analysis was conducted. The results of the moderation effects are presented in Table 4.

**Table 4. Regression Results with Moderation**

Variable	Coefficient	t-Statistic	p-Value
ESG	-0.031	-2.486	0.013 **
DT	-0.024	-2.143	0.033 *
FS	-0.012	-1.678	0.095 *
ESG × FS	-0.019	-2.127	0.034 *
DT × FS	-0.022	-2.591	0.010 **
Adj. R <sup>2</sup> = 0.458			
F-stat = 18.96 (p < 0.01)			

**Interpretation:**

- Firm size significantly strengthens the negative effect of ESG disclosure on tax avoidance ( $\beta = -0.019$ ;  $p < 0.05$ ).
- Firm size also reinforces the mitigating effect of digital transformation on tax avoidance ( $\beta = -0.022$ ;  $p < 0.01$ ).

This indicates that ESG and digital strategies are more effective in curbing tax avoidance among larger firms.

*Robbustness Test*

To ensure the reliability and stability of the regression results, several robustness tests were conducted. These tests were designed to verify whether

the observed relationships between ESG disclosure, digital transformation, moderation of firm size, and tax avoidance remain consistent when alternative measures, model specifications, and estimation techniques are applied. The outcomes of these robustness checks are summarized in Table 5.

Table 5. Robbustness Test

Variable	Coefficient	t-Statistic	p-Value
ESG	-0.036	-2.742	0.007 **
DT	-0.028	-2.305	0.022 *
FS	-0.014	-1.754	0.081 *
ESG × FS	-0.021	-2.145	0.033 *
DT × FS	-0.020	-2.411	0.017 **
Adj. R <sup>2</sup> = 0.447			
F-stat = 17.83 (p < 0.01)			

Taken together, the robustness tests demonstrate that the mitigating effects of ESG disclosure and digital transformation on tax avoidance, as well as the moderating role of firm size, are consistent across alternative proxies, weighting schemes, lag structures, and robust estimation techniques. These additional checks reinforce the reliability and generalizability of the study’s conclusions for Indonesian manufacturing firms between 2020 and 2024.

*The Effect of ESG Disclosure on Tax Avoidance*

The empirical results show that ESG disclosure has a significant negative effect on tax avoidance among Indonesian manufacturing firms during 2020–2024. This means that firms with higher levels of ESG transparency tend to engage less in aggressive tax strategies, as reflected in the reduction of effective tax rates. This finding confirms the first hypothesis and aligns with the theoretical argument that ESG practices serve as governance mechanisms to constrain opportunistic behavior.

From the perspective of legitimacy theory, firms disclose ESG activities to gain and maintain social approval. Companies that publish detailed ESG reports are signaling a commitment to accountability and sustainability, which makes them more cautious in adopting aggressive tax policies that could damage their legitimacy in the eyes of stakeholders (Freeman, 2010; Suchman, 1995). For example, avoiding taxes may be interpreted as free-riding on public resources, thereby contradicting the social responsibility narrative contained in ESG disclosures. As a result, firms that engage more in ESG reporting tend to refrain from tax avoidance in order to remain consistent with their sustainability commitments.

The findings are also supported by stakeholder theory, which emphasizes the importance of balancing the interests of multiple parties, including governments, communities, and investors (Richter & Dow, 2017). Aggressive tax avoidance, while potentially beneficial to shareholders in the short term, undermines the government’s ability to provide public goods and may trigger reputational risks. By disclosing ESG information, firms effectively increase the scrutiny from diverse stakeholders, making it costlier to pursue tax avoidance strategies. This is consistent with studies in other contexts that find a negative

association between ESG performance and tax avoidance (Lanis & Richardson, 2016).

In the Indonesian context, this result is particularly relevant given the regulatory push for ESG adoption in the capital market and the government's efforts to combat tax avoidance. Manufacturing firms with higher ESG disclosure not only demonstrate compliance with investor expectations but also align themselves with state objectives of increasing tax revenues for development. This reinforces the argument that ESG is not merely symbolic reporting, but can also influence concrete financial decisions such as tax strategies.

However, while the results confirm that ESG disclosure reduces tax avoidance, the effect may not be uniform across all firms. Larger companies, due to greater public visibility and reputational risk, might face stronger pressures to align ESG commitments with tax compliance compared to smaller firms that may adopt ESG disclosure in a more symbolic manner. This highlights the importance of considering firm heterogeneity in future research.

In summary, the results support the view that ESG disclosure acts as a deterrent to aggressive tax planning in Indonesian manufacturing firms. By increasing transparency, aligning with societal expectations, and exposing firms to broader stakeholder scrutiny, ESG practices help reduce the incentives and opportunities for tax avoidance. These findings contribute to the literature by reinforcing the role of non-financial disclosures as effective governance mechanisms in emerging markets.

#### *The Effect of Digital Transformation on Tax Avoidance*

The results of this study indicate that digital transformation has a significant negative effect on tax avoidance among Indonesian manufacturing firms during the period 2020–2024. This finding suggests that the adoption of digital technology, such as electronic reporting systems, enterprise resource planning (ERP), cloud platforms, and automated financial tools, reduces opportunities for aggressive tax strategies by improving transparency and the accuracy of financial reporting.

From an agency theory perspective, digitalization serves as a governance mechanism that reduces information asymmetry between managers (agents) and shareholders (principals), as well as between firms and regulators (Jensen & Meckling, 1976). When financial data are digitized and integrated into monitoring systems, managers face greater scrutiny, which discourages them from engaging in opportunistic practices such as tax avoidance. This aligns with Ghofar et al. (Ghofar et al., 2025), who highlight that digital reporting enhances accountability and corporate transparency.

Moreover, the negative relationship found in this study resonates with the notion that digital tools strengthen the role of tax authorities and stakeholders in monitoring corporate behavior. In Indonesia, the implementation of e-faktur, e-SPT, and other digital tax reporting systems has significantly improved the traceability of financial transactions, making it more difficult for firms to manipulate taxable income. By adopting internal digital systems that are compatible with regulatory platforms, manufacturing companies effectively

reduce both the incentives and the ability to engage in tax avoidance (Tang et al., 2022).

However, previous literature acknowledges a paradox in digital transformation. While it can enhance compliance, it also has the potential to equip firms with sophisticated methods of tax planning by exploiting regulatory loopholes (Tang et al., 2022). Yet, in the case of Indonesian manufacturing firms, the dominant effect appears to be compliance-oriented. This may be attributed to the increasing integration of digital tax reporting with government systems and the rising attention from investors and the media regarding corporate digitalization practices (Ghofar et al., 2025). In such an environment, the reputational and legal risks of using digital tools for tax avoidance likely outweigh the potential benefits.

From the perspective of stakeholder theory, firms adopting digital transformation not only pursue efficiency but also demonstrate accountability to multiple stakeholders, including regulators, investors, and society (Osei et al., 2025). Stakeholders expect that digital initiatives will be accompanied by higher ethical standards, including fair tax contributions. Firms that leverage digital technologies to enhance compliance strengthen their legitimacy, while those that attempt to misuse them for tax avoidance risk reputational backlash.

Overall, these findings support the second hypothesis and extend the literature by showing that digital transformation, when embedded in an emerging market context such as Indonesia, functions more as a compliance-enhancing mechanism than as a tool for tax aggressiveness. This highlights the importance of not only adopting digital tools but also ensuring that such adoption is accompanied by strong governance frameworks and regulatory oversight.

#### *Firm Size as a Moderator in the Relationship between ESG Disclosure and Tax Avoidance*

The regression results reveal that firm size strengthens the negative effect of ESG disclosure on tax avoidance. In other words, the reduction in tax avoidance associated with ESG disclosure is more pronounced in larger manufacturing firms compared to smaller ones.

This finding can be explained through the political cost hypothesis within Positive Accounting Theory (Watts & Zimmerman, 1986). Larger firms are more visible to regulators, policymakers, and the media, which makes them subject to greater political scrutiny. Consequently, the reputational and regulatory costs of engaging in tax avoidance are higher. When these firms engage in ESG disclosure, the practice is not merely symbolic but is more likely to be followed by genuine actions to align tax behavior with sustainability claims. By contrast, smaller firms, which face less scrutiny, may disclose ESG information primarily as a form of legitimacy-seeking without necessarily altering aggressive tax strategies.

This result is consistent with stakeholder theory, which emphasizes that larger organizations have broader and more diverse stakeholder groups, including governments, institutional investors, and international partners (Richter & Dow, 2017). For these firms, ESG disclosure is a tool not only to demonstrate accountability but also to maintain legitimacy in global supply

chains. Aggressive tax avoidance would undermine such legitimacy, leading to reputational damage that outweighs potential tax savings. Empirical studies in Indonesia also show that firm size influences the credibility and effectiveness of ESG disclosure (Nasrina & Khairunnisa, 2025).

Therefore, this study contributes by demonstrating that firm size conditions the effectiveness of ESG disclosure as a governance mechanism. While ESG disclosure in general reduces tax avoidance, the moderating role of firm size highlights that this relationship is stronger for firms with greater visibility and resources.

#### *Firm Size as a Moderator in the Relationship between Digital Transformation and Tax Avoidance*

The analysis further shows that firm size also moderates the effect of digital transformation on tax avoidance. Specifically, the mitigating effect of digital transformation on tax avoidance is stronger in larger firms compared to smaller ones.

This result aligns with the argument that digital transformation requires substantial investment in infrastructure, human resources, and systems integration. Larger firms typically possess the financial and organizational capacity to implement advanced digital tools such as ERP systems, automated compliance software, and integrated tax reporting platforms (Richter & Dow, 2017). These systems improve traceability and reduce information asymmetry, which effectively discourages tax avoidance. Smaller firms, on the other hand, may adopt digital initiatives in a more limited or symbolic manner, reducing their effectiveness in constraining tax behavior.

From the perspective of agency theory, firm size amplifies the monitoring effect of digital tools. In larger firms, the scale and complexity of operations create stronger demands for digital oversight, while external stakeholders such as regulators and investors closely monitor how digital adoption affects compliance. Thus, larger firms face stronger pressures to use digital systems in ways that enhance accountability rather than exploit loopholes for tax avoidance (Jensen & Meckling, 1976).

Empirical evidence from Indonesian multinationals also suggests that digital transformation can reduce tax avoidance when combined with external visibility and regulatory monitoring (Xie & Huang, 2023). This indicates that digital transformation alone may not guarantee compliance; its effectiveness depends on organizational size and stakeholder scrutiny.

In sum, the moderating role of firm size reinforces the conclusion that digital transformation is more effective in curbing tax avoidance among larger firms, while smaller firms may not experience the same benefits due to resource limitations and lower stakeholder pressure.

## **CONCLUSIONS AND RECOMMENDATIONS**

This study investigates the effect of ESG disclosure and digital transformation on tax avoidance, with firm size as a moderating variable, using panel data of Indonesian manufacturing firms listed on the IDX from 2020 to 2024. The findings provide several important insights. First, the results confirm that ESG disclosure significantly reduces tax avoidance. Firms with higher

levels of ESG transparency are less likely to engage in aggressive tax practices, consistent with legitimacy theory and stakeholder theory, which argue that disclosure enhances accountability and stakeholder monitoring. This suggests that ESG practices extend beyond symbolic communication and play a real role in shaping corporate financial behavior in Indonesia's manufacturing sector.

Second, the analysis shows that digital transformation also mitigates tax avoidance. The adoption of digital technologies, such as ERP systems, e-reporting, and cloud-based platforms, improves monitoring and transparency, thereby constraining opportunistic managerial actions. Although prior studies highlight the paradoxical nature of digitalization, in the Indonesian context digital transformation is predominantly associated with improved compliance, particularly due to regulatory integration and increasing public scrutiny.

Third, the study highlights the importance of firm size as a moderating factor. Larger firms experience stronger reductions in tax avoidance through both ESG disclosure and digital transformation compared to smaller firms. This reflects the greater visibility, reputational risks, and resources available to larger organizations, which amplify the effectiveness of governance mechanisms. Smaller firms, by contrast, may lack the capacity or stakeholder pressure to fully translate ESG and digital initiatives into reduced tax aggressiveness.

Overall, the findings contribute to the literature by integrating ESG disclosure, digital transformation, and firm size into a unified framework for understanding tax avoidance. The study extends agency and legitimacy theories by demonstrating how non-financial disclosures and technological adoption can function as governance tools, and how firm size shapes their effectiveness.

From a practical standpoint, the results imply that regulators should encourage ESG reporting and support digital adoption across firms of varying sizes, while tailoring policies to account for organizational heterogeneity. For managers, the findings suggest that aligning ESG and digital initiatives with firm scale can enhance both compliance and legitimacy, thereby creating long-term value for stakeholders.

## **ADVANCED RESEARCH**

Future research may extend this study by incorporating additional governance and behavioral factors, such as board digital competence, audit quality, or managerial ethics, to further explain corporate tax behavior. Comparative studies across sectors or countries, particularly in emerging markets, would enhance the generalizability of the findings. Moreover, employing alternative measures of tax avoidance and digital transformation, as well as longitudinal or mixed-methods approaches, could provide deeper insights into the dynamic and strategic role of ESG disclosure and digitalization in shaping sustainable tax compliance.

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