

CEO CHARACTERISTICS, INSTITUTIONAL OWNERSHIP, AND UNMANAGED ESG RISK IN IDX30 COMPANIES

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Abstract

Environmental, Social, and Governance (ESG) risk ratings increasingly complement corporate sustainability disclosure by assessing material risks that remain unmanaged. This study examined whether institutional ownership, CEO tenure, and CEO educational background were associated with ESG Risk Score among IDX30 companies. Using a quantitative cross-sectional design, 28 companies in 2024 were analyzed with Ordinary Least Squares regression, controlling for firm size and Market-to-Book Value. Institutional ownership was not significantly associated with the score. CEO tenure and business-related CEO education were positively and significantly associated with ESG Risk Score, indicating higher unmanaged material ESG risk because lower scores represent better risk-management outcomes. Firm size was negatively significant, whereas Market-to-Book Value was insignificant. A sensitivity analysis using the original 29-company sample produced unchanged decisions for the three main hypotheses. The findings indicated that CEO characteristics were statistically associated with unmanaged ESG risk, while ownership concentration was not. The study underscores the importance of distinguishing externally assessed ESG risk from disclosure-based ESG measures.

Keywords: CEO education; CEO tenure; ESG risk score; Institutional Ownership

1. INTRODUCTION

Environmental, Social, and Governance (ESG) considerations have become an important component of corporate risk assessment because sustainability-related exposures can affect operating continuity, reputation, financing conditions, and long-term value creation. Investors and regulators therefore increasingly evaluate firms not only through self-reported sustainability disclosure but also through third-party ratings that assess how effectively material ESG risks are managed (Li et al., 2021; Rau & Yu, 2024). This distinction is important because a firm can expand ESG reporting without necessarily reducing the underlying material risks embedded in its operations.

In Indonesia, sustainable-finance governance has become more structured through Financial Services Authority Regulation No. 51/POJK.03/2017 and the growing availability of ESG information in the capital market. The Indonesia Stock Exchange provides an ESG Risk Score through IDX Sustainability, with the assessment produced by Morningstar Sustainability. The score represents unmanaged material ESG risk after considering a company's exposure to material issues and the effectiveness of management responses. Its interpretation is inverse: lower scores indicate lower unmanaged risk and relatively stronger

risk-management outcomes, whereas higher scores indicate greater residual material ESG risk (Cesarone et al., 2024; Mondal & Bauri, 2024). Accordingly, the direction of a regression coefficient must be interpreted differently from many disclosure-oriented ESG measures in which higher scores are commonly viewed as better performance.

Corporate governance and top-management characteristics provide two internal channels through which ESG risk-management outcomes may vary. Agency Theory suggests that institutional investors can strengthen monitoring, constrain managerial opportunism, and encourage longer-term decision making. Institutional ownership has been associated with transparency and ESG performance in several settings, yet Indonesian evidence remains mixed: some studies document governance benefits, while others find that institutional ownership does not significantly explain ESG outcomes (Fadhly et al., 2025; Garcia-Blandon et al., 2019; Zairin et al., 2025). These inconsistencies suggest that the percentage of institutional ownership may not fully reflect stewardship intensity, investment horizon, or the quality of monitoring.

Upper Echelon Theory complements this ownership perspective by emphasizing that strategic choices reflect the experience, values, and cognitive frames of senior executives (Hambrick & Mason, 1984). CEO tenure can generate valuable firm-specific knowledge and stakeholder networks, but longer tenure may also encourage entrenchment and attachment to established routines. CEO educational background can shape analytical capability, risk perception, and strategic preferences, although empirical findings differ across MBA, accounting, engineering, elite-university, and other backgrounds (Farrakhova, 2022; Hussain et al., 2025; Slater & Dixon-Fowler, 2017). These characteristics may therefore influence the way firms recognize and respond to material ESG risks.

The present study addresses a specific gap in the Indonesian literature. Much of the existing evidence focuses on ESG disclosure or aggregate ESG performance, whereas relatively little is known about the internal determinants of externally assessed unmanaged material ESG risk. Indonesian studies have linked CEO characteristics to ESG disclosure and related sustainability outcomes (Oehoedoe et al., 2023; Thomas & Suhardianto, 2025; Triyani et al., 2020; Ulinuha et al., 2024), but those results cannot automatically be generalized to a Sustainability-based risk score that incorporates industry exposure and management gaps. In addition, studies jointly examining institutional ownership, CEO tenure, and CEO educational background within one ESG risk model remain limited. IDX30 provides a useful setting because its constituents are large, liquid, closely followed firms, yet their ESG Risk Scores still vary substantially.

Based on Agency Theory, stronger institutional ownership may improve monitoring and encourage management to address ESG-related exposures. However, because prior findings do not establish a sufficiently consistent directional expectation and institutional investors differ in their stewardship behavior, this study tests the relationship in a non-directional form.

H1: *Institutional ownership is significantly associated with the ESG Risk Score.*

CEO tenure reflects both accumulated organizational knowledge and the possibility of managerial entrenchment. Longer tenure may improve the ability to coordinate complex sustainability responses, but it may also reduce strategic flexibility and willingness to undertake long-horizon changes. Prior evidence indicates that tenure effects on ESG-related

outcomes can vary across settings and may even be non-linear (Hussain et al., 2025; Lazareva, 2022). The competing mechanisms support a two-tailed hypothesis.

H2: *CEO tenure is significantly associated with the ESG Risk Score.*

Formal education can influence information processing, risk assessment, and managerial priorities. Business, economics, finance, accounting, and management education may support financial analysis and enterprise risk-management capabilities, yet prior studies do not show a uniform ESG effect across educational backgrounds (Garcia-Blandon et al., 2019; Heubeck & Ahrens, 2025; Oehoedoe et al., 2023; Ulinuha et al., 2024). Because disclosure capability and actual reduction of unmanaged material risk are conceptually different, the relationship is also tested without imposing a directional prediction.

H3: *CEO educational background is significantly associated with the ESG Risk Score.*

Figure 1. Research Model

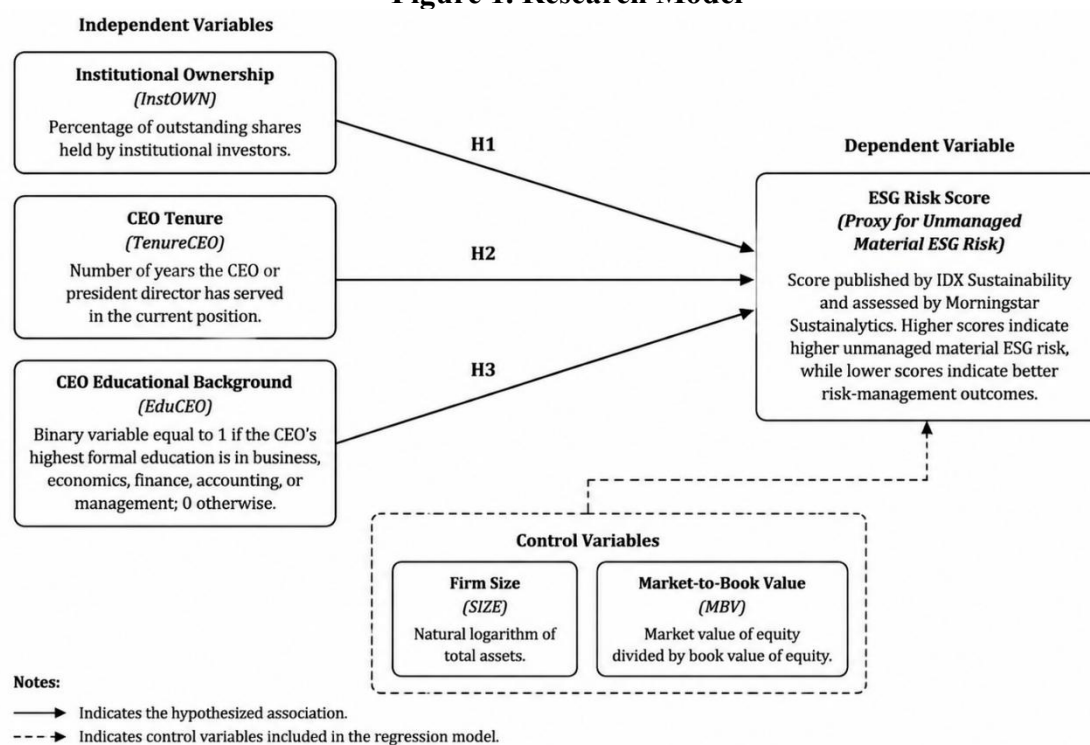


Figure 1 summarizes the empirical model. Institutional ownership represents the shareholder-monitoring mechanism, while CEO tenure and CEO educational background capture managerial characteristics. Firm size and Market-to-Book Value are included as control variables, and ESG Risk Score is interpreted as an external measure of unmanaged material ESG risk.

This study contributes by shifting attention from self-reported ESG disclosure toward externally assessed unmanaged material ESG risk, integrating ownership monitoring with CEO characteristics in one model, and reporting a sensitivity analysis around an extreme Market-to-Book Value observation. The study therefore examines the associations of institutional ownership, CEO tenure, and CEO educational background with ESG Risk Score among IDX30 companies while controlling for firm size and Market-to-Book Value

2. RESEARCH METHOD

This study uses a quantitative cross-sectional design with the company as the unit of analysis. The observation period is 2024. ESG Risk Score data are obtained from IDX Sustainability, where the ratings are assessed by Morningstar Sustainalytics. Institutional ownership, CEO characteristics, total assets, and equity-related data are collected from annual reports, financial statements, sustainability reports, and other official corporate disclosures. The population comprises companies listed on the Indonesia Stock Exchange, and purposive sampling is applied because ESG Risk Score coverage and complete variable information are not available for all issuers.

The sampling criteria require a company to be listed on the Indonesia Stock Exchange in 2024, have an ESG Risk Score available through IDX Sustainability, be included in IDX30 during the observation period, and provide complete data for all research variables. The screening yields 29 eligible firms. UNVR has an extreme Market-to-Book Value (MBV) of 20.93 compared with a maximum of 7.05 among the remaining firms. The main regression therefore uses 28 observations, while the original 29-observation specification is retained as a sensitivity analysis. The observation is treated as an extreme-value robustness issue rather than as a correction for classical-assumption violations, because both specifications pass the reported diagnostic tests.

The dependent variable is ESG Risk Score, representing unmanaged material ESG risk. Institutional ownership (InstOWN) is measured as the percentage of outstanding shares held by institutional investors. CEO tenure (TenureCEO) is the number of years the CEO or president director has served up to 2024. CEO educational background (EduCEO) is coded 1 when the CEO's highest identified formal education is in business, economics, finance, accounting, or management, and 0 otherwise. Firm size (SIZE) is the natural logarithm of total assets, while Market-to-Book Value (MBV) is market value divided by book value of equity. The measures are summarized in Table 1.

Table 1. Variable Definitions and Measurements

Variable	Code	Measurement
ESG Risk Score	<i>ESGRS</i>	Unmanaged material ESG risk assessed by Morningstar Sustainalytics and published through IDX Sustainability
Institutional ownership	<i>InstOWN</i>	Institutional shares divided by total outstanding shares (%)
CEO tenure	<i>TenureCEO</i>	Number of years the CEO has served up to 2024
CEO education	<i>EduCEO</i>	Dummy: 1 = business/ economics/ finance/ accounting/ management; 0 = other fields
Firm size	<i>SIZE</i>	Natural logarithm of total assets
Market-to-Book Value	<i>MBV</i>	Market value divided by book value of equity

Source: *Data Processed, 2026*

The empirical model is estimated using Ordinary Least Squares (OLS). Because ESG Risk Score follows an inverse interpretation, a negative coefficient indicates lower

unmanaged material ESG risk, while a positive coefficient indicates higher unmanaged risk. The model is specified as follows:

$$ESGRS_i = \beta_0 + \beta_1 InstOWN_i + \beta_2 TenureCEO_i + \beta_3 EduCEO_i + \beta_4 SIZE_i + \beta_5 MBV_i + \varepsilon_i \quad (1)$$

Model diagnostics include the Shapiro-Wilk test for residual normality, Variance Inflation Factors (VIF) for multicollinearity, and the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity. Hypotheses are evaluated using two-tailed t-tests at the 5% significance level. The F-test and R-squared assess overall model significance and explanatory power. Because the design is cross-sectional and does not explicitly resolve endogeneity, the estimated coefficients are interpreted as conditional associations rather than causal effects.

3. RESULTS AND DISCUSSION

Descriptive Statistics and Model Diagnostics

Table 2 reports descriptive statistics for the 28-company main sample. The mean ESG Risk Score is 29.990 with a standard deviation of 9.472, showing meaningful variation in unmanaged ESG risk even among large and liquid IDX30 firms. Institutional ownership averages 60.610%, CEO tenure averages 5.607 years, and the mean EduCEO value of 0.679 indicates that approximately 67.9% of CEOs are classified as having a business-related educational background.

Table 2. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
ESGRS	28	29.990	9.472	7.11	46.60
InstOWN	28	60.610	15.824	21.81	89.76
CEO tenure	28	5.607	5.384	0	20
EduCEO	28	0.679	0.476	0	1
SIZE	28	11.739	1.284	10.27	14.66
MBV	28	1.671	1.385	0.40	7.05

Source: Data Processed, 2026

The diagnostic tests do not indicate violations of the assumptions examined. The Shapiro-Wilk test produces $W = 0.965$ and $p = 0.455$, so residual normality is not rejected at the 5% level. The mean VIF is 1.094, with all individual values close to one, indicating no material multicollinearity. The Breusch-Pagan/Cook-Weisberg test yields $\chi^2(1) = 0.87$ and $p = 0.3519$, providing no evidence of heteroskedasticity under the reported test. These results support the reported OLS specification while not eliminating broader concerns such as omitted variables or endogeneity.

3.2 Regression Results and Hypothesis Testing

Table 3 presents the OLS regression results examining institutional ownership, CEO characteristics, and ESG Risk Score. The estimated regression model is $ESGRS_i = 72.409 - 0.059InstOWN_i + 0.864TenureCEO_i + 7.033EduCEO_i - 3.954SIZE_i - 1.221MBV_i + \varepsilon_i$.

The equation indicates that, holding other variables constant, institutional ownership is associated with a decrease of 0.059 points in ESG Risk Score, while CEO tenure and CEO educational background are associated with increases of 0.864 and 7.033 points, respectively. Firm size and Market-to-Book Value have negative coefficients. The OLS model is statistically significant overall ($F = 3.456$; $p = 0.019$) and explains 44.0% of the cross-sectional variation in ESG Risk Score ($R^2 = 0.440$).

Table 3. OLS Regression Results

Variable	Coef.	Std. Error	t	p-value	Decision
InstOWN	-0.059	0.098	-0.60	0.552	H1 not supported
TenureCEO	0.864	0.308	2.81	0.010	H2 supported
EduCEO	7.033	3.312	2.12	0.045	H3 supported
SIZE	-3.954	1.220	-3.24	0.004	Significant
MBV	-1.221	1.124	-1.09	0.289	Not significant
Constant	72.409	16.128	4.49	<0.001	Significant

Source: Data Processed, 2026

Based on individual tests, institutional ownership is negative but insignificant ($\beta = -0.059$; $p = 0.552$), therefore H1 is not supported. CEO tenure is positive and significant ($\beta = 0.864$; $p = 0.010$), supporting H2. CEO educational background is positive and significant ($\beta = 7.033$; $p = 0.045$), supporting H3. Firm size is negatively significant, while Market-to-Book Value is insignificant

DISCUSSION

Institutional ownership is negatively but insignificantly associated with ESG Risk Score. The sign is directionally consistent with the agency argument that monitoring can reduce unmanaged risk, but the evidence is too imprecise to establish a systematic relationship in this sample. The finding is consistent with broader Indonesian evidence in which institutional ownership does not significantly explain ESG outcomes (Zairin et al., 2025), while differing from studies that associate ownership structure with stronger ESG performance (Fadhly et al., 2025). A plausible explanation is that ownership percentage does not reveal whether institutions are active stewards, passive investors, short-horizon traders, or long-term monitors. Thus, ownership concentration should not automatically be interpreted as effective ESG oversight.

CEO tenure is positively and significantly associated with ESG Risk Score. Since higher scores indicate greater unmanaged material ESG risk, each additional year of tenure is associated with an approximately 0.864-point increase in the score, holding other variables constant. The finding is compatible with a managerial-entrenchment mechanism in which longer-serving CEOs may become more attached to established routines or less receptive to strategic changes whose sustainability benefits are uncertain or delayed (Farrakhova, 2022; Lazareva, 2022). This result does not imply that long tenure is inherently detrimental because tenure can also generate firm-specific knowledge, and prior evidence suggests that the

relationship may be non-linear (Hussain et al., 2025). The coefficient should therefore be read as an average association within the observed IDX30 sample.

CEO educational background is also positively and significantly associated with ESG Risk Score. Firms led by CEOs classified as having business, economics, finance, accounting, or management education show, on average, higher unmanaged ESG risk after the other variables are controlled. This direction is contrary to a simple expectation that business education necessarily improves ESG risk management, but prior evidence already indicates heterogeneous effects across educational backgrounds (Garcia-Blandon et al., 2019; Heubeck & Ahrens, 2025; Slater & Dixon-Fowler, 2017). The result is particularly informative when compared with Indonesian disclosure-based studies reporting favorable associations for accounting or financial education (Oehoedoe et al., 2023; Thomas & Suhardianto, 2025; Ulinuha et al., 2024). A CEO may strengthen reporting and financial communication without necessarily reducing operational, environmental, safety, or supply-chain risks captured in an unmanaged-risk rating. The finding should therefore not be interpreted as a normative judgment about the quality of business education.

Firm size is negatively and significantly associated with ESG Risk Score, suggesting that larger firms tend to have lower unmanaged risk. Greater resources, formalized systems, and public scrutiny may support stronger ESG management (Drempetic et al., 2019). MBV is negative but insignificant, providing insufficient evidence that market valuation is systematically related to unmanaged ESG risk in this sample. Overall, the results reinforce the importance of distinguishing ESG communication from externally assessed residual risk: governance mechanisms or executive characteristics that improve disclosure do not necessarily have the same relationship with a score that embeds both industry exposure and management gaps.

3.4 Sensitivity Analysis

To assess whether the main conclusions depend on the extreme UNVR MBV observation, the model is re-estimated using all 29 eligible firms and compared with the 28-firm main specification. The three principal hypothesis decisions are unchanged: institutional ownership remains insignificant, CEO tenure remains significant at $p = 0.010$, and CEO education remains significant at the 5% level. SIZE remains significant and MBV remains insignificant. The diagnostic pattern is also stable. Therefore, the extreme observation is not characterized as the cause of a classical-assumption violation; the exercise is interpreted as a robustness check on whether an unusually high MBV value drives the regression conclusions.

Table 4. Sensitivity Analysis: 29 Versus 28 Observations

Statistic	29 observations	28 observations	Conclusion
InstOWN p-value	0.635	0.552	Remains insignificant
TenureCEO p-value	0.010	0.010	Remains significant
EduCEO p-value	0.049	0.045	Remains significant
SIZE p-value	0.003	0.004	Remains significant
MBV p-value	0.152	0.289	Remains insignificant

Statistic	29 observations	28 observations	Conclusion
R-squared	0.461	0.440	Similar explanatory power
Prob > F	0.010	0.019	Both models significant
Shapiro-Wilk p-value	0.343	0.455	Normality not rejected
Breusch-Pagan p-value	0.4909	0.3519	No heteroskedasticity evidence
Mean VIF	1.143	1.094	No multicollinearity concern

Source: *Data Processed, 2026*

4. CONCLUSION

This study examines the associations of institutional ownership, CEO tenure, and CEO educational background with externally assessed unmanaged material ESG risk among IDX30 companies. Institutional ownership is not significantly associated with ESG Risk Score, while CEO tenure and business-related CEO education are positively and significantly associated with the score. Given the inverse interpretation of the Sustainalytics measure, the positive coefficients indicate higher unmanaged material ESG risk. Firm size is negatively significant, whereas Market-to-Book Value is not significant. The stability of the main decisions across 29- and 28-observation specifications indicates that the conclusions are not created by excluding the extreme UNVR MBV observation.

The findings contribute to the ESG literature by showing that evidence based on disclosure-oriented measures should not automatically be generalized to an externally assessed unmanaged-risk outcome. For companies, the tenure result supports the importance of maintaining strategic challenge, periodic strategy review, succession planning, and ESG-specific capability development throughout a CEO's tenure. The education result suggests that ESG competence should not be inferred from a business degree alone; cross-functional experience and industry-specific risk knowledge may also be important. For investors and regulators, the insignificant institutional-ownership result indicates that ownership percentages alone may be an incomplete proxy for stewardship quality, making information on engagement and voting behavior potentially valuable.

The study has several limitations. It uses a one-year cross-section and a small sample, limiting statistical power and preventing the use of firm fixed effects. Sustainalytics incorporates sub-industry exposure into its score, while the model does not formally control for industry fixed effects. CEO education is represented by a broad binary classification, and reverse causality or omitted-variable bias may remain. Accordingly, the results should be interpreted as conditional associations rather than causal effects. Future research should use multi-year panel data, more granular CEO educational and functional-background measures, additional governance variables, and research designs that better address industry heterogeneity and endogeneity.

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