

## Does CEO Education Moderate Managerial Ability on ESG (Environmental, Social, and Governance)?

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### Abstract

This study seeks to examine the influence of CEO education on the correlation between managerial competence and ESG. This study employs a sample of 185 observations from 37 manufacturing firms listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. This study used the weighted least squares regression model for estimation purposes. The research findings indicate that managerial skill impacts ESG, aligning with legitimacy theory. The theory suggests that superior managerial capability facilitates an understanding of stakeholder demands through ESG disclosures, thereby enhancing a company's reputation and legitimacy. Nevertheless, the outcomes indicate that CEO education as a moderating element does not enhance the impact of managerial competence on ESG. A manager's education does not influence ESG disclosure. The limited sample of manufacturing enterprises that issue ESG disclosure reports and the temporal scope, spanning only five years, constrain the research.

**Keywords:** CEO Education, ESG, Legitimacy Theory, Managerial Ability

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### Abstrak

Penelitian ini bertujuan untuk menguji pengaruh pendidikan CEO terhadap korelasi antara kemampuan manajerial dan ESG. Penelitian ini menggunakan sampel sebanyak 185 observasi dari 37 perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2018 hingga 2022. Penelitian ini menggunakan model regresi kuadrat terkecil tertimbang untuk tujuan estimasi. Temuan penelitian menunjukkan bahwa kemampuan manajerial berdampak pada ESG, sejalan dengan teori legitimasi. Teori ini menunjukkan bahwa kemampuan manajerial yang unggul memfasilitasi pemahaman tuntutan pemangku kepentingan melalui pengungkapan ESG, sehingga meningkatkan reputasi dan legitimasi perusahaan. Namun demikian, hasil penelitian menunjukkan bahwa pendidikan CEO sebagai moderasi tidak memperkuat dampak kemampuan manajerial terhadap ESG. Pendidikan CEO tidak mempengaruhi pengungkapan ESG. Sampel terbatas pada perusahaan manufaktur yang menerbitkan laporan berkelanjutan dan waktu pengamatan yang digunakan hanya lima tahun.

**Kata Kunci:** ESG, Kemampuan Manajerial, Pendidikan CEO, Teori Legitimasi

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## INTRODUCTION

Managerial competence significantly influences a company's ESG disclosure. Organizational capability is derived from specialized knowledge of a domain and the dynamic elements associated with individual cognitive capacities (Levine et al., 2017). Cui et al. (2019) and García-Sánchez et al. (2020) state that more competent managers uniquely understand how their organizations function, which enables them to assess company status with greater accuracy and thereby increase the level of corporate information disclosure, including ESG disclosure. Previous studies have argued that there is a positive correlation between managerial ability and ESG disclosure (Kao et al., 2024; Khan et al., 2022). Managerial capabilities are vital for organizational success because they empower managers to make informed decisions, optimize team performance, and comprehend technological and industrial developments (Dahinine, 2024). Competent managers, for example, are able to understand a wide array of business and industry dynamics, which enhances their capability to capitalize on investment opportunities while reducing exposure to undue risks. High managerial capabilities enable organizations to gain a competitive advantage and attain sustainable economic growth through investment (Lee et al., 2018).

However, the impact of managerial capabilities on ESG is not uniform across cases. Some scholars argue that there is little association between corporate capabilities and strategic environmental reporting within a firm's operations (Baik et al., 2018). On the opposite spectrum, much of the literature documents the relationship between managerial capabilities and ESG disclosures (Kao et al., 2024; Khan et al., 2022). More capable managers tend to adopt aggressive CSR communication policies, enhancing ESG reporting and improving the firm's perception as a stakeholder-friendly corporation. Hence, to develop a more holistic approach to ESG tangibility, managerial capabilities addressing sustainability must be developed.

CEOs with well-developed managerial skills are more likely to recognize the need for sustainable practices. They can implement ESG practices into the value chain, address elements of sustainability, manage risks, and develop ESG frameworks (Lee et al., 2018; Zahid et al., 2024). However, the personal traits of the CEO, especially the level of education attained, are also believed to affect how executives understand and deal with the ESG dimension of business. Advanced levels of education widen horizons, enhance understanding, and foster social and environmental responsibility in business policymaking (Haski-Leventhal et al., 2022). Moreover, the level of education a CEO holds influences a corporation's global competitiveness, decreasing the likelihood that its sustainability endeavors will be undermined. Consequently, the effects of CEO education on business practices related to sustainability, as well as social, environmental, and corporate governance dimensions, are pronounced (Khan et al., 2022).

According to Bektur & Arzova (2022) and Du & Wu (2019), firms strategically market their performance with precision and elaborate financial transparency by integrating long-term sustainability information. This indicates that investors have started to understand the importance of non-financial determinants of value-related issues because they integrate ESG concerns into their financial assessments (Bektur & Arzova, 2022). With these developments, management must comprehend how different organizational factors impact ESG performance. Greater attention is needed to analyze the effects of CEO education and

skills on a firm's ESG performance more accurately and comprehensively (Bektur & Arzova, 2022). Politics and values embedded within an organization by its chief executive officer shape its strategic objectives. Thus, significant attention to CEO education is a prerequisite (Kim & Li, 2021). Politics and values injected within an organization by its chief executive officer lead to its strategic objectives. Thus, a great deal of attention to their education is a prerequisite (García-Sánchez & Martínez-Ferrero, 2019). Considering recent changes in ESG-related issues, it is pertinent to ask whether the educational qualifications of a chief executive officer drive their skills to steer the corporation toward optimal ESG performance. Therefore, this research seeks to fill the gap by exploring the effects of CEO education as a moderator in the relationship between managerial competence and ESG performance, while enhancing corporate governance and sustainability knowledge.

This study addresses whether CEO education alters the relationship between managerial ability and ESG performance. Prior studies have thoroughly investigated the direct relationship between corporate governance, board composition, and firm success, with a focus on financial results (Romano et al., 2020). Although some studies have examined the effects of managerial characteristics, such as gender diversity, on ESG reporting and performance, little attention has been paid to the moderating role of CEO education in influencing the relationship between managerial competence and ESG outcomes (Bektur & Arzova, 2022). Given that CEO education affects strategic decision-making and organizational values, this study contends that CEO education significantly influences how managerial competencies are translated into actual ESG benefits. This research builds on prior findings by demonstrating that the effects of positive corporate governance are influenced by internal firm factors and institutional development, providing new empirical evidence regarding their impact on the effectiveness of corporate governance initiatives (Q. Zhang et al., 2020). This study aims to advance academic discussions on corporate sustainability by elucidating the complex interactions between managerial capabilities, CEO education, and ESG performance.

This research utilizes a sample of 37 manufacturing firms listed in Indonesia from 2018 to 2022. The study analyzes the relationship between managerial ability and ESG disclosure in Indonesian companies, with CEO educational attainment acting as a moderating variable. The sample is drawn from Indonesian firms for several reasons. First, there is a lack of research focusing on the relationship between managerial skills and ESG disclosure in Indonesia, as most prior studies have been conducted in China and Taiwan (Kao et al., 2024; Kong, 2023). Second, Indonesia represents a developing economy with significant social and environmental challenges. Therefore, exploring the impact of managerial skills on ESG disclosure among Indonesia firms offers valuable insights for improving sustainable business practices.

### **The Connection between Managerial Capability and Environmental, Social, and Governance (ESG) Disclosure**

The resource-based view and legitimacy theory are two heuristic approaches that can be used to evaluate the relationship between managerial competence and ESG disclosure. Legitimacy theory posits that companies may disclose ESG parameters to enhance their image and reputation (Huang & Shen, 2024). The resource-based view emphasizes the

critical impact of a firm's distinctive resources and competencies on strategic choices, particularly regarding ESG information disclosure. Simply put, the level of controllership a firm has over information affects the depth of disclosure or assurance provided on the firm's ESG aspects.

Legitimacy theory has received considerable attention in social accounting and disclosure research, offering vital insights into the motivations for issuing environmental disclosures. This theory affirms that businesses need to report to society and act in a manner that complies with the fundamental standards of the public and investors. To gain credibility and acceptance, companies must meet various sociocultural norms and maintain systematized control and resource distribution frameworks that work toward social acknowledgment (Comyns, 2016; Gallego-Álvarez et al., 2018).

Furthermore, the above arguments suggest that improving a firm's reputation and social standing through social legitimacy contributes to both the company and society (Martens & Bui, 2023; Parguel et al., 2011). Legitimacy is based on observers' feedback toward the firm in question and on how the firm's actions align with societal expectations. Failure to comply with community operational standards may result in the revocation of permission, within the community, to operate as a business. ESG data are strategically embedded within annual reports to portray a company's responsiveness to sociological and ecological issues and concerns regarding public perception (Deegan, 2019).

The resource-based approach (RBV) continues to emerge as a theory that distinguishes varying company characteristics. It primarily draws from industrial organization economics and has evolved through advances in managerial and organizational capabilities. This theory, like others, suggests that managerial capability as a resource class provides a competitive advantage to a firm (Barney et al., 2001). The underlying premise is that managerial capability reflects productivity, meaning that managers can transform available resources into productive value for the company (Doukas & Zhang, 2020; Hasan, 2020).

The role of managerial capability in increasing corporate participation in ESG disclosure is significant. Skilled managers possess higher education and expertise in addressing and reporting ESG matters, particularly in the context of corporate sustainability. Improved ESG disclosure enhances company credibility and legitimacy in the eyes of society and investors, strengthens stakeholder relations, and improves corporate reputation. Consistent with legitimacy theory, voluntary disclosures enhance corporate legitimacy and credibility, especially concerning ESG issues. Empirical evidence indicates that legitimacy theory helps explain certain aspects of ESG, with competent managers better understanding stakeholders' social and environmental concerns. Companies that provide adequate and reliable ESG data regarding their operations can enhance their corporate image and gain greater social legitimacy, as suggested by legitimacy theory (Deegan, 2019).

Highly skilled managers with sound judgment and knowledge often focus on benefits rather than the costs of discretionary expenditures. Well-informed managers outperform ordinary competitors in terms of financial outcomes and capabilities because of their deeper understanding of the organization (García-Sánchez et al., 2020). On the other hand, managers who directly own shares in the firm can enhance corporate governance (Tumiwa & Mamuaya, 2018). The managers do not adversely impact their professional interests and find it optimal to deploy discretionary ESG reporting strategically to enhance stakeholder

engagement and mitigate costs associated with asymmetric information. Leveraging ESG disclosure can facilitate the attainment of a competitive advantage, as it is a critical element of a company's sustainability strategy. In addition, ESG disclosure can potentially improve firm performance and reveal managerial opportunism by enhancing reputation and conveying a positive message (Zhan, 2023).

Economic growth and sustainable development on a global scale necessitate the implementation of ESG principles. Although progress has been made in ESG research, future emphasis should be placed on strengthening the theoretical framework, assessing ESG's influence on economic outcomes, mitigating risks, and improving measurement techniques (Li et al., 2021). Globally, countries are advancing the integrated development of governance, society, and the environment through ESG principles. Nevertheless, Indonesian organizations continue to exhibit a lack of ESG disclosure. In 2022, the International Association for Public Participation Indonesia attributed this low level of ESG disclosure to several barriers, including companies' limited understanding of ESG, insufficient resources, and the high costs associated with ESG consulting.

Alongside Indonesia's economic growth, progress in sustainability has also received a positive response. Disclosures related to ESG and regulatory compliance enhance public understanding of sustainable investment. Public awareness of ESG-based investments has increased significantly in recent years. Therefore, for financial statements to maintain relevance, reliability, comprehensibility, and accuracy, all figures must be grounded in factual data. Furthermore, management estimates and disclosures must be rational, realistic, and reliable, in accordance with applicable accounting frameworks or standards (Kurniawansyah & Simamora, 2023).

CEO education refers to the formal educational background undertaken by a CEO. CEO education can provide insights into an individual's capabilities (Kalasin, 2024; King et al., 2016). CEO education positively influences performance and contributes additional value for shareholders (Osei Bonsu et al., 2024). A CEO's educational background serves as an indicator of cognitive capability. In this study, a dummy variable is employed to assess CEO education, with a value of one indicating an MM or MBA qualification and zero indicating the absence of such qualifications.

According to Ghardallou (2022), an association exists between a CEO's level of education and cognitive complexity, as educational credentials represent domains of knowledge and sophistication. A positive relationship also exists between the speed of strategic decision-making and a CEO's cognitive complexity and education level (Chin et al., 2021). More advanced general cognitive are associated with greater analytical complexity, enabling CEOs to execute intelligence and design tasks more efficiently within decision-making processes. Other scholars argue that more educated leaders are more likely to employ multifaceted approaches to decision-making and problem-solving (Luria et al., 2019). Prior research suggests that CEOs with advanced business training (i.e., an MBA) tend to demonstrate a stronger relationship between ESG performance in CSR activities and ESG disclosure than their less-educated counterparts (García-Sánchez et al., 2020).

Recent research suggests that more educated CEOs are more likely to make bold decisions and demonstrate greater strategic management of cognitive load-related to the mental effort required for information processing (Chin et al., 2021). This influences not

only their personal performance but also firm performance. At the firm level, better-educated CEOs tend to achieve stronger financial outcomes. Evidence indicates that CEOs holding degrees exhibit lower levels of debt-financed capital, which is associated with higher capital investment and improved returns on assets. In addition, appointing a new CEO with a business graduate degree enhances operational performance (Yin et al., 2022). Performance improvements stem from cost containment and cash flow management, enabling PhD holders to further enhance company performance (Urquhart & Zhang, 2022).

### **The Influence of Managerial Ability on Environmental, Social, and Governance (ESG) Disclosure**

The legitimacy theory mentioned earlier explains that voluntarily disclosing information can improve a company's legitimacy and credibility, especially in ESG matters (Ferrara, 2022). A company's ESG disclosure depends greatly on managerial competency. Prior research by Chen et al. (2019) examined the impact of managerial abilities on ESG disclosure and found that such abilities positively affect financial information related to the environment, ESG. Furthermore, other research claims that the extent of corporate social responsibility (CSR), including ESG disclosure, is negatively related to the comprehensive ability of the firm's Chief Executive Officer (Chen et al., 2020). Further research argues that this negative impact is greater in firms with a short-term outlook and a tight labour market. This indicates that CEOs with strong analytical and decision-making skills often have multiple career opportunities available, resulting in reduced concern for a company's long-term strategy. Other studies report no significant outcomes regarding the correlation between managerial characteristics and the quality of ESG disclosure reports. The preceding discussion allows the formulation of the following hypothesis:

**Hypothesis 1:** Managerial capabilities influence environmental, social, and governance (ESG) disclosure

### **CEO Education Strengthens The Relationship between Managerial Ability and Environmental, Social, and Governance (ESG) Disclosure**

In the context of the Resource-Based View (RBV) theory, CEO education qualifies as competitive advantage in ESG implementation and serves as a barrier to rival firms because it is valuable and costly to imitate. This theory argues that a firm's resources, including managerial capabilities, together with cognitive abilities such as a CEO's education, create synergy that improves resource allocation. Ghaleb et al. (2024) demonstrate that well-educated CEOs possess sufficient sustainability literacy, enabling them to implement measurable ESG policies through strategic planning and risk control. Along with Oehoedoe et al. (2023) and Ghardallou (2022), these findings suggest that increased CEO education significantly enhances a firm's environmental performance, thereby supporting the RBV framework. These findings support RBV theory, which emphasizes that extraordinary resources, in this case, CEO education, have the potential to improve a firm's organizational capabilities through value-added and transparent ESG processes.

In addition, the combination of CEO education and managerial abilities can be viewed as a driving force explaining changes in ESG adaptation in response to market forces. Oyinlola (2025) study on multinational firms indicates that chief executive officers

who hold master's or doctoral degrees tend to optimally utilize their managerial abilities to incorporate basic ESG guidelines into business processes, including emissions reduction and inclusive social programs. Based on RBV theory, CEO education serves as a moderating resource that significantly alters ethical governance decision-making outcomes, particularly in ESG management concerning the balance between short-term strategies and sustainability policies. For example, during the COVID-19 pandemic, CEOs with advanced degrees in Jordan were more proactive in increasing CSR disclosures than their counterparts with lower educational qualifications (Ghaleb et al., 2024). Hence, the following hypothesis is proposed:

**Hypothesis 2:** CEO education strengthens the relationship between managerial capabilities and ESG disclosure

## **METHOD**

This study uses a sample of 37 companies listed in Indonesia during the period from 2018 to 2022, that published complete financial and sustainability reports within the observation period. The sample data consist of information from the Refinitiv database and financial reports available on each company's website. Companies whose data did not align with the variables used in this study were excluded. This study employs Gretl software for panel data analysis using the Weighted Least Squares (WLS) regression model, which combines time series and cross-sectional data. The final sample comprises 185 observations from 37 companies listed in Indonesia during the 2018-2022 period, as shown in Table 1.

Table 1. *Research Sample Criteria*

<b>Research Criteria</b>	<b>Number of Observations</b>
Companies listed on the IDX during 2018 - 2022	873
Companies that did not publish sustainability reports consecutively during 2018 - 2022	(831)
Companies with incomplete information	(5)
<b>Total Observations</b>	<b>37</b>

The restriction of the sample to manufacturing firms aligns with the rationale underlying Gupta's approach, which suggests that Indonesia's GDP growth warrants investigation into the adoption and effects of sustainable business initiatives (Gupta et al., 2018). Furthermore, the distinctive characteristics of the manufacturing industry include substantial social and environmental impacts, increasing stakeholder sensitivity to ESG concerns. This underscores the importance of examining the role of leadership and managerial quality in advancing ESG performance (Tjahjadi et al., 2021).

The 2018-2022 period was selected to capture a phase of increasing global attention to ESG issues and practices that enhance corporate governance in Indonesia. This timeframe facilitates an assessment of the moderating effect of CEO education on managerial capabilities and ESG outcomes. A sample of 37 companies over five years provides sufficient observations for panel data analysis, which is effective in addressing unobserved

heterogeneity and endogeneity, issues commonly found in cross-sectional studies (Bhowmik et al., 2022). Additionally, focusing on Indonesia is justified by the country’s ESG growth potential alongside the sustainability challenges inherent in a rapidly developing economy.

This study examines several variables, including independent, dependent, control, and moderating variables. Managerial ability is the independent variable, ESG disclosure is the dependent variable, and CEO education serves as the moderating variable, which is expected to strengthen the relationship between the independent and dependent variable. Control variables include the number of employees, number of directors, return on assets, and cash flow from operations.

The Inverse Mills Ratio (IMR) is used for hypothesis testing, following regression models applied in prior ESG determinant studies (García-Sánchez et al., 2020; Yuan et al., 2019). As the dependent variable is categorical, this study applies a binary logistic regression model, expressed as follows:

$$Y = \alpha + \beta_1MA + \beta_2NoE + \beta_3NoD + \beta_4ROA + \beta_5CFO + \varepsilon \dots\dots\dots (1)$$

$$Y = \alpha + \beta_1MA + \beta_2CEOEduc + \beta_3MAxCEOEduc + \beta_4NoE + \beta_5NoD + \beta_6ROA + \beta_7CFO + \varepsilon \dots\dots\dots(2)$$

Explanation:

- Y = ESG (Environmental, Social, and Governance) Disclosure
- α = Constant
- β1- β6 = Regression coefficient
- MA = Managerial Ability
- CEOEduc= CEO Education
- NoE = Number of Employees
- NoD = Number of Directors
- ROA = Return on Assets
- CFO = Cash Flow from Operations
- ε = Standard Error

A conceptual definition explains the characteristics of the issue being studied so that the concepts can be empirically investigated. These concepts are translated into measurable variables. In this study, the variables include ESG Disclosure, Managerial Ability, CEO Education, Number of Employees, Number of Directors, Return on Assets, and Cash Flow from Operations. Based on these variables, Table 2 is provided to clarify their descriptions.

Table 2. *Variable Description*

Variable	Description	Sources
ESG Disclosure	Corporate environmental, social, and governance (ESG) score of firms, reflecting comprehensive ESG disclosure	(Harjoto & Wang, 2024)

Variable	Description	Sources
Managerial Ability	Measured using the ratios of Leverage, Growth, Past Return of Assets (Past ROA), Current Return, and Past Return	(Kao et al., 2024)
CEO Education	CEOs with a Master's degree are coded as 1; those with a Bachelor's degree are coded as 0	(DasGupta & Pathak, 2024)
Number of Employees	The natural logarithm (ln) of the number of employees	(Kao et al., 2024)
Number of Directors	Company size measured by the number of directors	(Kao et al., 2024)
ROA (Return on Assets)	The net income divided by the total assets of the company	(Harjoto & Wang, 2024)
CFO (Cash Flow from Operation)	Cash flow from operations divided by total assets of the company to calculate the metric	(Kao et al., 2024)

## Findings and Discussion

### Descriptive Statistics

Table 3 presents the descriptive statistics for each variable, summarizing the maximum and minimum values, mean, median, and variability of the dependent, independent, moderating, and control variables examined in this study. Based on the data in Table 3, drawn from a sample of 185 companies, the mean value for ESG disclosure is 50.4800, with a median value of 48.4100, indicating a growing trend toward sustainable ESG disclosure among these companies. Regarding managerial ability, the mean value is 1.2180, accompanied by a relatively high and diverse standard deviation, suggesting improvements in managerial capabilities across companies. This implies that companies may not place considerable importance on individual educational attainment. The negative value recorded for Return on Assets (ROA), at -0.1858 shows that some companies face losses, as the net income value is negative, indicating that company assets are not generating profits.

Table 3. *Descriptive Statistics*

	Mean	Median	Standar Deviasi	Min	Max
ESG Disclosure	50.4800	48.4100	18.7900	13.4700	85.8200
Managerial Ability	1.2180	0.7669	1.7160	0.0325	14.6300
CEO Education	0.6216	1.0000	0.4863	0.0000	1.0000
Managerial Ability x CEO Education	0.7631	0.4361	1.4310	0.0000	13.6100
Number of Employee	8.8260	8.6530	1.2080	6.2480	11.9200
Number of Director	6.2050	6.0000	2.4090	3.0000	21.0000

	Mean	Median	Standar Deviasi	Min	Max
ROA	0.0784	0.0588	0.0886	-0.1858	0.4468
CFO	0.3801	0.2684	0.4188	0.0315	2.3960

**Panel Data Regression**

When testing panel data, it is essential to conduct appropriate model estimation tests. Thus, a standard effect model or pooled least squares approach using pooled or ordinary least squares (OLS) methods is applied, as the study’s data comprise a combination of time series and cross-sectional data. Regression model assessment involves three methods after estimating the pooled or OLS model. First, an F-test is conducted to determine the appropriate common effect or fixed effect model. Second, a Hausman test is carried out to determine the suitable random or fixed effect model. Lastly, a Breusch-Pagan test is conducted to ascertain the appropriate standard or random effect model. The results of these tests are presented in Table 4.

Table 4. *Panel Diagnostics*

Dependent Variable	ESG Disclosure p-value	ESG Disclosure p-value
	Hipotesis 1	Hipotesis 2
Fixed effect estimator	4.0662E-048	2.65576E-047
Result	Fixed Effect	Fixed Effect
Random effect estimator		
Breusch-Pagan test statistics	5.62993E-045	6.83751E-046
Result	Random Effect	Random Effect
Hausman test statistic	0.00231157	0.00300238
Result	Fixed Effect	Fixed Effect

**Findings**

Following the identification of the estimation model, it is crucial to evaluate the classical assumptions associated with the regression model. The tests conducted include heteroskedasticity and multicollinearity tests. In the second hypothesis test, heteroskedasticity issues arise because the p-value obtained is below 0.05. Therefore, the next step to address this issue is to apply Weighted Least Squares (WLS) regression. The multicollinearity test indicates that both hypotheses are valid, as the Variance Inflation Factor (VIF) values are below 10 and the tolerance values exceed 0.10. Table 5 presents the results of this test.

The first hypothesis, as shown in Table 5, indicates that managerial ability influences ESG disclosure. This is supported by a p-value of 0.0122, which is below 0.05, indicating a statistically significant effect. In this context, managerial ability refers to the skills and competencies of firm leaders in effectively managing resources, making strategic decisions, and overseeing operations to achieve organizational goals (Bektur & Arzova, 2022). Therefore, it is reasonable to conclude that companies with more capable managers tend to demonstrate greater transparency and completeness in ESG disclosure (Bektur & Arzova, 2022). This relationship is associated with various factors, such as increased awareness of

ESG significance, enhanced ability to integrate ESG considerations into business strategy, and stronger commitment to stakeholder engagement (Gao et al., 2023). This highlights the importance of comprehensive managerial education focused on corporate social responsibility (Jámbor & Zanócz, 2023). Legitimacy challenges in environmentally sensitive sectors can be mitigated through improved management, thereby enhancing both the quality and quantity of ESG disclosure.

Table 5. *WLS and Collinearity Hypothesis 1*

	Coefficient	p-value		VIF
Const	79.2262	2.12E-29	***	
Managerial Ability	1.43061	0.0122	**	1.024
Number of Employee	-4.38021	2.16E-10	***	1.184
Number of Director	1.9731	9.19E-09	***	1.137
ROA	29.0717	5.24E-05	***	1.212
CFO	-14.5046	3.13E-22	***	1.054
dt_2	4.93209	0.0229	**	1.606
dt_3	8.44594	0.0007	***	1.625
dt_4	13.3432	7.75E-05	***	1.695
dt_5	12.7289	3.77E-05	***	1.63
Heteroskedasticity	0			
Adjusted R-Squared	0.594412			
p-value (F)	2.53E-33			

Managers with stronger competencies are better positioned to recognize and address the growing demand for ESG information from investors, regulators, and stakeholders. As stakeholders increasingly incorporate ESG factors into decision-making, companies face heightened pressure for enhanced ESG transparency (Fatemi et al., 2018). Moreover, competent managers tend to adopt a strategic perspective that allows them to anticipate ESG-related risks and opportunities and proactively disclose relevant information. This proactive strategy improves corporate reputation and strengthens stakeholder relationships, fostering trust and loyalty (Kowalczyk & Kucharska, 2020). Investors generally perceive companies that disclose sustainability information more positively and maintain stronger stakeholder relationships (Ammer et al., 2020).

The second hypothesis, as shown in Table 6, indicates that CEO education as a moderating variable does not exhibit a significant effect. This is evidenced by a p-value greater than 0.05, suggesting insufficient empirical support for moderation. Statistically, the findings indicate that CEO education does not significantly moderate the relationship between managerial ability and ESG disclosure. These results persist despite conventional assumptions that highly educated CEOs may be better equipped to understand and promote ESG initiatives (Ghardallou, 2022). Research by Zhang & Huang (2024) similarly finds that CEO education does not inherently strengthen the association between managerial competence and the level of ESG-related disclosure. This lack of moderation underscores the need for further investigation into the determinants of ESG disclosure and the potential

gap between formal education and the practical implementation of sustainability strategies (Jámbor & Zanócz, 2023).

Table 6. *WLS and Collinearity Hypothesis 2*

	Coefficient	p-value		VIF
Const	75.6217	1.31E-20	***	
Managerial Ability	1.6852	0.0843	*	2.408
CEO Education	6.32113	0.0081	***	1.716
Managerial Ability x CEO Education	0.48598	0.686		2.909
Number of Employee	-4.33011	5.40E-08	***	1.166
Number of Director	1.98442	4.80E-06	***	1.07
ROA	10.6115	0.3294		1.28
CFO	-14.3871	2.63E-16	***	1.059
dt_2	4.96099	0.0135	**	1.623
dt_3	8.33593	0.0007	***	1.626
dt_4	12.814	0.0002	***	1.708
dt_5	12.5929	3.96E-05	***	1.636
Heteroskedasticity	0			
Adjusted R-Squared	0.532873			
p-value (F)	2.75E-26			

One plausible explanation for these findings lies in the multifaceted nature of managerial capability, which encompasses a wide range of skills and experiences extending beyond formal education. As noted by Sørensen & Lindholst (2024), managerial capability includes not only the tertiary degrees held by executives but also strategic reasoning, leadership acumen, risk management skills, and stakeholder engagement. These competencies are often developed through experiential learning rather than formal education alone. Evidence suggests that exceptional managers can master ESG disclosure practices regardless of formal educational background, owing to extensive experience and accumulated managerial expertise (Kao et al., 2024). Furthermore, the effect of CEO education appears to be intertwined with contextual factors such as industry dynamics, regulatory environments, and stakeholder pressures (Qaderi et al., 2024).

### Discussion

Results from testing the initial hypothesis show that a firm’s managerial competence strongly impacts ESG disclosure. This implies that managers with high-level skills tend to take the initiative to reveal ESG metrics within their firms. This finding is consistent with the results of Ferrara (2022) and Chen et al. (2019), both of whom provided evidence that skilled managers substantially influence ESG disclosure. In addition, managers who possess exceptional managerial skills will recognize that the certainty of sustainability reporting is associated with the likelihood of future corporate infractions (Du & Wu, 2019).

Outcomes from the second hypothesis demonstrate that managerial aptitude does not significantly influence ESG disclosure. As the second hypothesis is disproved, it is clear that

CEO education, as a moderating factor, does not strengthen the relationship between managerial competence and ESG disclosure; thereby, the hypothesis is rejected. The RBV theory supports that a manager's skills impact several company outputs, and this outcome is consistent with this theory. However, this is not the case here since, unlike many other cases, managerial ability is not purely a product of education; rather, it is shaped by several factors, such as experience. According to Hettler et al. (2024), CEO education does not strengthen the relationship between managerial skills and ESG disclosure; however, the results presented in Table 5 suggest that CEO education impacts the level of ESG disclosure offered. The variable regarding CEO education indicates that the level of statistical significance is below 5%, thus affirming a strong relationship between the level of ESG disclosure and the education obtained by the CEO of the respective company.

This aligns with the prior work of Oware & Awunyo-Vitor (2021). It was noted that accounting education and specialized work experience, particularly for leadership roles in accounting firms, had a notable positive relationship with ESG disclosure levels. These CEOs appear more willing to disclose information regarding the company's operations on ESG issues because of their deep insight into ESG factors and operations, especially within sustainability frameworks. In the context of educational qualifications, Amore et al. (2019) suggest that advanced degrees allow CEOs to foster greater corporate environmental stewardship and energy efficiency, increasing the sustainability of corporate actions. Still, the lack of comparability between these models poses challenges in evaluating the findings relative to earlier studies.

## **CONCLUSION**

The study focused on the effects of managerial skill on ESG disclosure practices and the CEO's education as a moderating factor. The findings show that a manager's capability strongly influences ESG disclosure. This means that managers with sound managerial skills are likely to increase environmental concern, resulting in voluntary positive ESG reporting. Enhanced ESG reporting or disclosure is triggered by extreme climate events, heightened social problems, and corporate social responsibility toward society. These phenomena mitigate market concerns regarding corporate transparency and showcase the firm's commitment to ESG and the public.

The current study indicates that the education level of the CEO does not alter the relationship between managerial competence and ESG disclosure. This implies that businesses do not utilize CEO education to enhance managerial skills directed at the company. This reasoning follows because managerial skills are not solely shaped by CEO education but also by other variables, such as experience. Conversely, education equips CEOs with competencies related to ESG disclosure. More educated individuals tend to have better professional and ESG-related knowledge due to their deeper understanding of ESG disclosure aspects, which are crucial for corporate sustainability. This study adds to the body of knowledge on the role of corporate governance and administrative structures in recruiting and selecting personnel with professionally adequate managerial skills, highlighting the growing need for such developments worldwide. Well-skilled managers understand that disclosing ESG issues is critical for business accountability and sustainability. However, it would be prudent for recruitment strategies to define and prioritize the competencies

required of managers by incorporating education as a criterion alongside a holistic assessment that includes skills, qualifications, and experience.

This research presents practical implications for corporations, investors, and policymakers. The findings may encourage companies to consider the educational background of CEOs when making recruitment decisions, especially in industries that highly prioritize ESG performance. This study contributes by examining the moderating effect of CEO education on the relationship between managerial competence and ESG performance, an area that remains underexplored in Indonesian literature. It offers an alternative perspective on the impact of leadership characteristics on a company's commitment to sustainable practices. This is particularly relevant as companies face increasing stakeholder demands to improve ESG performance and demonstrate corporate social responsibility. The study contributes to the growing body of knowledge on the antecedents and determinants of ESG performance, addressing existing gaps in the literature. Another contribution lies in understanding the interaction between managerial competence and sustainability initiatives, offering insight into whether and how highly educated CEOs can effectively leverage managerial skills to drive ESG improvements.

Future research should broaden the sectoral scope beyond manufacturing to include industries such as mining and services to evaluate the generalizability of findings regarding the influence of CEO education within the ESG framework. Cross-sector comparisons may indicate whether the moderating influence of CEO education differs according to environmental risk exposure or operational complexity. Additionally, extending the research period could help identify the long-term effects of ESG policies and CEO turnover dynamics. Researchers should also incorporate variables such as CEO tenure, international experience, and professional networks to enrich the moderation analysis.

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