



The Attention Trap: Busy and Star CEOs' Influence on Carbon Emissions

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Abstract. *This study investigates how busy CEO and star CEO shape corporate carbon emission disclosure (CED) practices in Indonesia. Using a sample of 743 firms listed on the Indonesia Stock Exchange (IDX) for the period 2020 to 2023, the analysis applies panel data regression, supported by robustness tests, including coarsened exact matching (CEM) and generalized least squares (GLS) to verify the stability of the results. The results indicates that both busy CEO and star CEO have a significant positive impact on CED, as firms led by such CEO tend to adopt more transparent and comprehensive CED practices. These findings are consistent with upper echelons theory, which posits the characteristics, experiences, and visibility of CEO shape firms' strategic decision. By analyzing the role of busy CEO and star CEO, the study offers new evidence on how these characteristics are associated with firms' CED practices.*

Abstrak. Penelitian ini mengkaji bagaimana peran *busy* CEO dan *star* CEO memengaruhi praktik pengungkapan emisi karbon perusahaan di Indonesia. Dengan menggunakan 743 sampel perusahaan yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2020 hingga 2023, analisis dilakukan dengan menggunakan regresi data panel serta beberapa uji *robustness*, yaitu *coarsened exact matching* (CEM) dan *generalized least squares* (GLS) untuk memverifikasi konsistensi hasil. Temuan penelitian menunjukkan bahwa kedua *busy* CEO dan *star* CEO memiliki pengaruh positif dan signifikan terhadap pengungkapan emisi karbon, yang membuktikan bahwa perusahaan yang dipimpin oleh CEO dengan karakteristik tersebut cenderung melakukan pelaporan karbon yang lebih transparan dan komprehensif. Hasil ini sejalan dengan teori *upper echelons* yang menyatakan bahwa karakteristik, pengalaman, dan visibilitas CEO memengaruhi keputusan strategis perusahaan. Dengan menyoroti peran *busy* CEO dan *star* CEO, penelitian ini memberikan bukti empiris baru mengenai hubungan karakteristik CEO dengan praktik pengungkapan emisi karbon di Indonesia.

Keywords:

*Busy CEO; Carbon
Emission Disclosure;
Star CEO*

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Introduction

Carbon emissions have become the primary driver of climate change (Dong et al., 2022), which has become an urgent global issue and poses a serious threat to sustainability (Choudhry et al., 2023). This issue has raised concerns over environmental, prompting a growing awareness of the need to balance economic growth, ecological integrity, and social well-being (Kumari, et al., 2025). This has led stakeholders to develop higher expectations for greater disclosure as a form of accountability and transparency regarding the company's environmental impacts (Camilleri, 2015). Thus, disclosure serves as a mechanism for demonstrating firm's transparency regarding its environmental impacts, while also shaping the perceptions of investors, stakeholders, and regulator (Romadhina & Probohudono, 2025)

According to the Global Carbon Project (2023), Indonesia has been identified as the eighth-largest contributor to global emissions and ranks among the top three emitters in Asia. However, many companies still perceive CED as optional rather than mandatory (Ulfa & Ermaya, 2019). As a result, the reporting practices lack standardized guidelines, leading to inconsistencies in disclosure across firms (Saraswati et al., 2021).

CED plays a critical role in promoting corporate transparency and accountability regarding environmental performance (Comello et al., 2023). CED provides stakeholders with a clearer insight of a firm's contributions to climate change and serves as a key component of broader environmental management strategies (Alsaifi et al., 2022). Such disclosure strengthens corporate credibility, supports firm performance, and investors' decision making (Zhang & Liu, 2020). In addition, CED enables firms to identify major emission sources, establish measurable reduction goals, and align their operations with evolving environmental regulations and policy requirements (Onat et al., 2025).

Given the urgent needs of transparency and sustainability, which affects a firm's reputation and relationships with stakeholders, corporate leaders hold a crucial role in determining how effectively firms respond to these expectations (García-Sánchez et al., 2020). Among them, CEO holds a central position, as they possess the authority to shape strategic decisions related to social and environmental activities within the firm (Al-Shaer et al., 2023). Their decision directly influences whether firms adopt proactive CED practices, integrate sustainability into core business strategies, or merely comply at a minimal level, therefore making CEO become key actors in steering firm responses to evolving sustainability pressures (Larraufie & Poulain, 2025).

In this research, the relationship between CEO and CED are interpreted through upper echelons theory proposed by (Hambrick & Mason, 1984), which argues that CEO characteristics, values, and experiences significantly influence strategic decisions that determine the firm's outcomes and performance. Therefore, examining CEO characteristics provide a theoretical approach to understanding variation in CED practices. Previous studies have also shown that various CEO characteristics such as educational background (Khalid et al., 2022; Wan et al., 2023), gender (Tang & Sari, 2022; Caby et al., 2024; Houqe et al., 2024; (Ludya & Dewi, 2024), expatriate background (Mardini & Elleuch Lahyani, 2021), and narcissism (Suparman et al.,

2024) can influence firms' performance, including carbon emission performance and disclosure practices.

While prior studies have examined the influence of various CEO characteristics on carbon emission performance and disclosure, certain CEO characteristics remain underexplored yet offer valuable insights, particularly busy CEO and star CEO. Busy CEO defined as CEO who hold multiple directorships in other companies (Harymawan et al., 2019). Such CEO often gain access to broader professional networks, diverse managerial experiences, and strategic insights that may enhance corporate decision making (Fayad et al., 2025). Existing research shows that directors with multiple board positions often contribute to stronger corporate outcomes, including stronger firm performance and enhanced corporate value, although excessive directorships may reduce their effectiveness (Lu et al., 2013). Prior research also found that busy CEO are positively associated with higher financial reporting quality, driven by their motivation to maintain a strong professional reputation (Harymawan et al., 2022). Collectively, these insights suggest that the broader experience, network, and reputation concerns of busy CEO may influence their approach to transparency related practices, including CED.

On the other hand, star CEO refers to executives who have received awards or public recognition from reputable business magazines or institutions, reflecting high visibility, media attention, and reputational capital (Malmendier & Tate, 2009; Chandra et al., 2024; Cho & Choi, 2024). Prior research shows that such recognition is often followed by improvements in future firm performance (Mohebbi et al., 2024). Other studies further find that after receiving a prestigious media award, CEO tend to engage more actively in externally oriented CSR activities that are more visible to the public, to maintain and enhance their elevated reputation (Yin et al., 2024). The increased scrutiny and visibility associated with their status increase both internal and external pressures to act transparently, particularly in areas such as CED (Ye et al., 2024). As a result, firms led by star CEO may engage in proactive environmental initiatives and adopt more extensive disclosure practices, positioning CED as part of the strategy.

Building on prior evidence, these findings indicated that the effect of both characteristics may extend beyond financial outcomes and influence firms' sustainability practices as well. Despite their relevance, empirical evidence linking busy CEO and star CEO to CED remains scarce. This study seeks to address this gap by investigating other CEO characteristics that may influence CED, a topic that especially relevant in emerging economies such as Indonesia, where carbon emission levels remain high, while sustainability reporting is largely voluntary and regulatory enforcement remains limited. This study contributes to the growing literature on CEO characteristics and CED in Indonesia, by highlighting the significant role of CEO in driving transparency and accountability in sustainability reporting. The findings provide valuable insights for stakeholders, including investors and regulators seeking to strengthen sustainability governance and align executive behaviour with environmental accountability.

The role of busy CEO on carbon emission disclosure.

According to the upper echelons theory (Hambrick & Mason, 1984), CEO characteristics and experience influence strategic decisions that determine the firm's outcomes and performance. Busy CEO refers to an executive who holds multiple directorships (Harymawan et al., 2019), allowing them to gain access to broader professional networks, diverse managerial experiences, and strategic insights that may enhance corporate decision making (Fayad et al., 2025). CEO who holds multiple external positions are often exposed to varied governance practices, sustainability initiatives, and reputational expectations, which can create pressure to implement

higher standards of corporate transparency, including sustainability disclosure (Lu et al., 2024). This exposure can strengthen their awareness and ability to recognize the strategic relevance of environmental transparency and aligns their decision making. Busy CEO often benefit from extensive networks, which facilitate access to best practices, environmental expertise, and advanced reporting framework (Britton, 2018). Through repeated interactions in multiple boardrooms, they encounter higher levels of stakeholder scrutiny and reputational monitoring, which can reinforce the importance of credible sustainability actions, including comprehensive CED (Bravo-Urquiza & Reguera-Alvarado, 2025).

Empirical evidence aligns with this perspective. A study conducted in the United States found a positive relationship between busy CEO and firms' ESG performance, suggesting that their broader involvement, experience, and reputation contribute to improved sustainability outcomes (Cooper & Uzun, 2022). Similarly, evidence from Saudi Arabia also found a positive association between busy CEO and enhanced ESG performance (Al Naim & Alomair, 2024). This evidence implies that busy CEO may be more likely to adopt transparency practice to maintain or enhance their social and professional standing. However, concerns remain that the excessive external roles might impose time constraints and managerial overload, potentially limiting their capacity (Fayad et al., 2025). Based on these findings, the hypothesis can be formulated:

H1. Busy CEO positively associated with carbon emission disclosure.

The role of star CEO on carbon emission disclosure.

Star CEO are executives who have received awards or public recognition from reputable business magazines or institutions, reflecting high visibility, media attention, and reputational capital (Malmendier & Tate, 2009; Cho & Choi, 2024). This recognition not only elevates their personal status, but also strengthens the firm's external legitimacy, positioning star CEO as influential figures whose actions are closely monitored by stakeholders and the media (Fombrun & Shanley, 1990). From the perspective of upper echelons theory (Hambrick & Mason, 1984), star CEO leverage their visibility, reputational resources, and professional experiences to shape strategic decisions, including those related to sustainability and disclosure practices. The heightened attention and scrutiny associated with their status increase both internal and external pressures to act transparently, particularly in areas such as CED (Ye et al., 2024).

Previous studies have found that star CEO have a positive impact on ESG performance, influenced by their heightened confidence and legitimacy pressures (Li et al., 2023). Similarly, research on highly reputed CEO, such as celebrity CEO, demonstrates enhanced firms' transparency, accountability, and sustainability practice, thereby positively impacting ESG performance (Chandra et al., 2024). Building on these findings, it is expected that firms led by star CEO are more likely to engage in greater levels of carbon disclosure. Therefore, the hypothesis can be formulated:

H2: Star CEO positively associated with carbon emission disclosure.

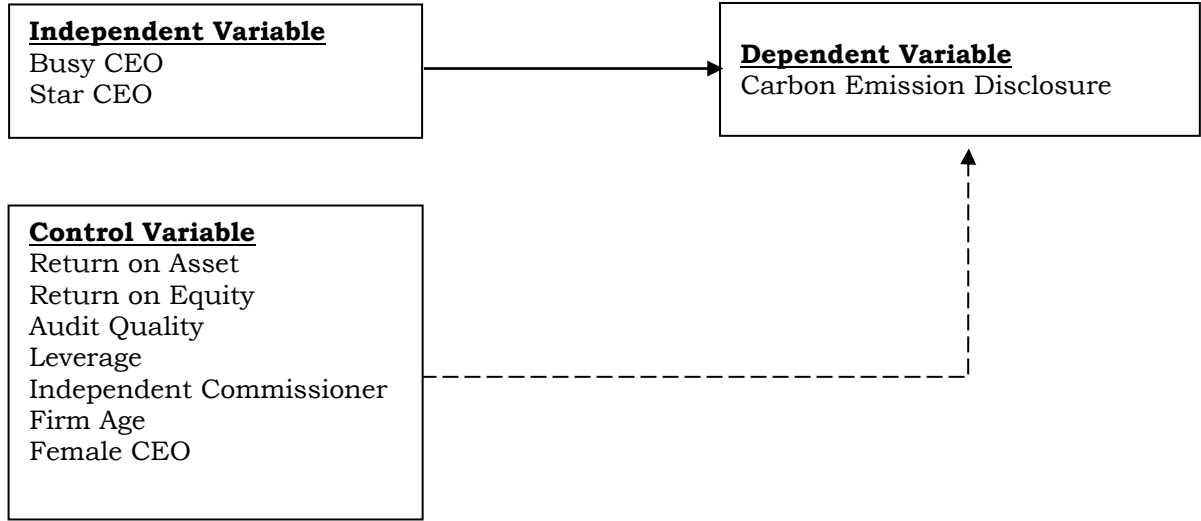


Figure 1. Research Model
Source: Research Data, 2025

Research Method

The study employs a quantitative method, with an initial sample of 3,201 observations from a total of 798 companies listed on the Indonesia Stock Exchange (IDX) for the period 2020–2023. The sample includes firms across multiple industries, excluding 412 observations from the financial sector due to the unique and distinct nature of their accounting and reporting practices. Furthermore, 1,136 observations with incomplete data during the specified period were removed, resulting in a final sample of 1,653 observations. Table 1 summarizes the sample selection process. Table 2 shows the distribution of observations by industry and year, while Table 3 and Table 4 present the yearly distribution of firm with busy CEO and star CEO respectively. The following regression model is employed to examine the effects.

$$CED_{it} = \beta_0 + \beta_1 CEOBUSY_{it} + \beta_2 CEOSTAR_{it} + \beta_3 ROA_{it} + \beta_4 ROE_{it} + \beta_5 BIG4_{it} + \beta_6 LEV_{it} + \beta_7 INDCOM_{it} + \beta_8 FAGE_{it} + \beta_9 CEOFEM_{it} + YEAR\ FE + SIC\ FE + \varepsilon_{it}$$

Where:

- CED_{it} = number of carbon emission items disclosed by companies
- $\beta_1 CEOBUSY_{it}$ = dummy variable, score 1 if CEO holds two or more other directorships, and 0 otherwise
- $\beta_2 STARCEO_{it}$ = dummy variable, score 1 if CEO has received prominent CEO awards, and 0 otherwise
- $\beta_3 ROA_{it}$ = net income divided by total assets
- $\beta_4 ROE_{it}$ = net income divided by total equity
- $\beta_5 BIG4_{it}$ = dummy variable, score 1 if audited by big 4 auditors, and 0 otherwise
- $\beta_6 LEV_{it}$ = the natural log of total debt divided by equity
- $\beta_7 INDCOM_{it}$ = the natural log of the number of independent commissioners
- $\beta_8 FAGE_{it}$ = the natural log of the number of years of operation since its inception
- $\beta_9 CEOFEM_{it}$ = dummy variable, score 1 if the CEO is a female, and 0 otherwise
- $YEAR\ FE$ = year fixed effect to control for year specific factors

SIC FE = standard industrial classification fixed effect to control for industry specific factors
 ε_{it} = error

The dependent variable, CED, is measured by counting the number of CED items reported by each firm based on the seven indicators required under the Global Reporting Initiative (GRI) 305 standard. The CED data were obtained from the ESGI database. The independent variables in this study are busy CEO and star CEO. Busy CEO is measured as a dummy variable with a value of 1 if the CEO holds two or more additional directorships, and 0 otherwise (Harymawan et al., 2019). Star CEO is also measured as a dummy variable with a value of 1 if the CEO has received prominent CEO awards, and 0 otherwise (Cho & Choi, 2024). The awards considered are limited to those issued by reputable Indonesian publications, including Warta Ekonomi, Iconomics, IDN Financials, and SWA magazine. Busy CEO data was manually collected from firms' annual reports, while star CEO data was verified using the award records published by the selected magazines.

Table 1. Sample Selection Criteria

Criteria	Total
Indonesian publicly listed companies on the IDX from 2020 to 2023	3,201
Companies in the financial sector	(412)
Missing Data	(1,136)
Number of samples used as research objects	743
Total final sample	1,653

Source: Research Data, 2025

Table 2. Distribution of Data by Industry and Year

SIC		Year				Total
		2020	2021	2022	2023	
SIC 1	Energy	20	49	62	73	204
SIC 2	Basic Materials	17	31	81	92	221
SIC 3	Industrials	6	11	46	59	122
SIC 4	Consumer Non-Cyclicals	24	35	104	119	282
SIC 5	Consumer Cyclicals	9	21	117	131	278
SIC 6	Healthcare	9	12	27	33	81
SIC 8	Property and Real Estate	9	27	64	76	176
SIC 9	Technology	1	5	25	37	68
SIC 10	Infrastructure	17	20	51	63	151
SIC 11	Transportation & Logistics	3	2	29	36	70
Total		115	213	606	719	1,653

Source: Research Data, 2025

Table 3. Distribution of Data by Busy CEO and Year

Year	NON-BUSYCEO = 0	BUSYCEO = 1	Total
2020	35	80	115
2021	72	141	213
2022	198	408	606
2023	245	474	719
Total	550	1,103	1,653

Source: Research Data, 2025

Table 4. Distribution of Data by Star CEO and Year

Year	NON-STARCEO = 0	STARCEO = 1	Total
2020	92	23	115
2021	203	10	213
2022	562	44	606
2023	656	63	719
Total	1,513	140	1,653

Source: Research Data, 2025

Table 5. Variable Definition

Variables	Measurement	Data Source
Dependent Variable		
Carbon Emission Disclosure (CED)	Number of carbon emission item disclosed by companies	ESGI
Independent Variable		
Busy CEO (BUSYCEO)	Dummy variable, score 1 if CEO holds two or more other directorships, and 0 otherwise	Annual Report
Star CEO (STARCEO)	Dummy variable, score 1 if CEO has received prominent CEO awards, and 0 otherwise	Warta Ekonomi, Iconomics, IDN Financials, and SWA Magazine
Control Variable		
Return on Asset (ROA)	Net income divided by total assets	Annual Report
Return on Equity (ROE)	Net income divided by total equity	Annual Report
Audit Quality (BIG4)	Dummy variable, score 1 if audited by big 4 auditors, and 0 otherwise	Annual Report
Leverage (LEV)	The natural log of total debt divided by equity	Annual Report
Independent Commissioner (INDCOM)	The natural log of the number of independent commissioners	Annual Report
Firm Age (FAGE)	The natural log of the number of years of operation since its inception	Annual Report
Female CEO (CEOFEM)	Dummy variable, score 1 if the CEO is a female, and 0 otherwise	Annual Report

Source: Research Data, 2025

Results and Discussion

Table 6 presents the descriptive statistics of the variable used in this study. The mean CED score is 2.201, indicating that firms disclose fewer than half of the indicators required. The minimum value of 0 and the maximum value of 7 indicate that some firms disclose all indicators, while others do not disclose any. Regarding the independent variables, 66.73% firms are led by busy CEO, while only 8.47% are led by star CEO, suggesting that multiple directorships are more common than award-winning CEO in the sample. For the control variables, the mean return on asset and return on equity are 0.023 and 0.134, indicate modest profitability levels. The mean leverage of 0.569 indicates moderate debt usage, though the wide range

reflects substantial differences in capital structure. Firms have a mean of 1.603 independent commissioners, consistent with governance requirements, and mean FAGE of 3.260 reflecting a relatively mature sample. Additionally, 28.68% of firms are audited by Big-4 auditors, and only 7.62% of firms are led by female CEO.

Table 6. Descriptive Statistics

	Mean	Median	Minimum	Maximum
CED	2.201	2.000	0.000	7.000
ROA	0.023	0.032	-9.498	4.693
ROE	0.134	0.064	-19.472	72.356
LEV	0.569	0.635	-598.445	190.307
INDCOM	1.603	1.000	0.000	5.000
FAGE	3.260	3.401	0.693	4.762
Frequency	0		1	
BUSYCEO	33.27%		66.73%	
STARCEO	91.53%		8.47%	
BIG4	71.32%		28.68%	
CEOFEM	92.38%		7.62%	

Source: Research Data, 2025

Table 7 presents the pearson correlation analysis in this study. The findings indicate several significant associations among the variables. The coefficient between CED and busy CEO is 0.075, which indicates a weak but statistically significant positive relationship at the 1% level ($p < 0.01$). This suggests that firms led by busy CEO tend to disclose slightly higher levels of CED. A stronger positive correlation of 0.226 is observed between CED and star CEO at the 1% significance level, implying that firm with star CEO disclose more carbon related information.

Five out of seven control variables also show positive and significant correlations with CED at the 1% level ($p < 0.01$), namely return on asset ($r = 0.145$), return on equity ($r = 0.068$), audit quality ($r = 0.270$), independent commissioner ($r = 0.328$), and firm age ($r = 0.175$). These results indicate that firms with stronger financial performance, those audited by big 4 auditors, firms with higher number of independent commissioners, and with longer operating histories tend to disclose more carbon related information, suggesting that financial, organizational, and governance influence firms CED practice.

Table 7. Pearson Correlation

	CED	BUSYCEO	STARCEO	ROA	ROE	BIG4	LEV	INDCOM	FAGE	CEOFEM
CED	1.000									
BUSYCEO	0.075*** (0.002)	1.000								
STARCEO	0.226*** (0.000)	0.086*** (0.000)	1.000							
ROA	0.145*** (0.000)	0.018 (0.475)	0.089*** (0.000)	1.000						
ROE	0.068*** (0.006)	-0.013 (0.604)	0.071*** (0.004)	0.522*** (0.000)	1.000					
BIG4	0.270*** (0.000)	0.030 (0.216)	0.278*** (0.000)	0.193*** (0.000)	0.141*** (0.000)	1.000				
LEV	0.022 (0.382)	-0.009 (0.708)	0.025 (0.306)	-0.022 (0.375)	-0.355*** (0.000)	0.018 (0.474)	1.000			
INDCOM	0.328*** (0.000)	0.051** (0.040)	0.310*** (0.000)	0.092*** (0.000)	0.078*** (0.001)	0.374*** (0.000)	0.088*** (0.000)	1.000		
FAGE	0.175*** (0.000)	-0.011 (0.658)	0.122*** (0.000)	0.076*** (0.002)	0.044* (0.075)	0.212*** (0.000)	0.098*** (0.000)	0.286*** (0.000)	1.000	
CEOFEM	0.014 (0.559)	-0.063** (0.010)	0.027 (0.268)	0.029 (0.244)	0.029 (0.244)	0.035 (0.159)	0.002 (0.930)	-0.024 (0.338)	0.011 (0.669)	1.000

p-values in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Research Data, 2025

A t-Test was conducted to examine differences in firm characteristics between firms led by busy CEO or star CEO and those without. By comparing the mean values of key variables, the t-test helps determine whether CEOs' characteristics are associated with substantial differences in firms CED practices. For busy CEO, the results presented in Table 8 indicate that firm with busy CEO disclose more carbon emission information (CED mean = 2.316) than firm with non-busy CEO (CED mean = 1.973), with a significant difference ($t = -3.047$, $p < 0.01$). This indicates that CEO holding multiple directorships are associated with higher level of CED practices, while the absence of busy CEO associated with lower CED. No significant differences were found for return on asset, return on equity, audit quality, leverage, or firm age. However, firms with busy CEO show slightly higher number of independent commissioner (INDCOM mean = 1.624 compared to 1.540; $t = -2.056$, $p < 0.05$) and a lower proportion of female CEO (CEOFEM mean = 0.064 compared to 0.100; $t = 2.576$, $p < 0.05$).

For star CEO, as presented in Table 9, the differences are more pronounced. Firms led by star CEO disclose substantially more carbon emission information (CED mean = 3.807) compared to non-star CEO (CED mean = 2.053), with a significant difference ($t = -9.434$, $p < 0.01$). These firms also exhibit significantly higher financial performance (ROA = 0.069 compared to 0.031; $t = -3.611$, $p < 0.01$), (ROE = 0.0142 compared to 0.062; $t = -2.909$, $p < 0.01$), greater audit quality (BIG = 0.077 compared to 0.249; $t = -11.758$, $p < 0.01$), higher number of independent commissioner (INDCOM = 2.393 compared to 1.522; $t = -13.270$, $p < 0.01$), and firm age (FAGE = 3.528 compared to 3.238; $t = -5.004$, $p < 0.01$). No significant difference was found for leverage or proportion of female CEO. Overall, both results indicate that both busy CEO and star CEO are associated with higher level of carbon emission information.

Table 8. t-Test on Busy CEO

BUSYCEO				
	NON-BUSYCEO	BUSYCEO	Coef	t-value
CED	1.973	2.316	-0.343***	-3.047
ROA	0.031	0.036	-0.004	-0.715
ROE	0.075	0.066	0.008	0.519
BIG4	0.267	0.296	-0.029	-1.236
LEV	1.015	0.971	0.044	0.374
INDCOM	1.540	1.624	-0.084**	-2.056
FAGE	3.273	3.258	0.015	0.443
CEOFEM	0.100	0.064	0.036**	2.576

Source: Research Data, 2025

Table 9. t-Test on Star CEO

STARCEO				
	NON-STARCEO	STARCEO	Coef	t-value
CED	2.053	3.807	-1.754***	-9.434
ROA	0.031	0.069	-0.037***	-3.611
ROE	0.062	0.142	-0.079***	-2.909
BIG4	0.249	0.700	-0.451***	-11.758
LEV	0.969	1.170	-0.202	-1.024
INDCOM	1.522	2.393	-0.871***	-13.270
FAGE	3.238	3.528	-0.290***	-5.004
CEOFEM	0.074	0.100	-0.026	-1.108

Source: Research Data, 2025

Focusing on busy CEO, the results in Table 10 show a consistently positive and significant association with CED across all model specifications. The coefficient varies between 0.229 to 0.241, with the strongest effect observed in Model 4. This pattern implies that firms led by CEO who hold multiple directorships tend to provide more extensive CED. In line with upper echelons theory (Hambrick & Mason, 1984), the characteristic, values, and professional experiences of CEOs shape their strategic decisions, including sustainability disclosure.

Research in United States and Asia firms further reinforces these findings. Cooper & Uzun (2022), examining busy outside directors in U.S. firms, show that CEO involvement, experience, and reputation contribute to higher ESG reporting quality. Another research in U.S. firms also support the finding that board busyness strengthens sustainability performance, as directors with broader external engagement bring deeper knowledge, wider networks, and greater accountability pressure, ultimately improving ESG outcomes (Tijani & Ahmadi, 2022). Similarly other research on Japanese firms also demonstrates that the knowledge, experience, external resources, and strategic insights of busy outside directors positively influence the level of CED, although the effect diminishes for directors aged 75 and above (Endo, 2025). A study on Saudi Arabian firms also shows that board busyness significantly enhances ESG disclosure, underscoring the role of regulatory environments in strengthening governance that promote transparency (Al Naim & Alomair, 2024). Together, these cross-country findings highlight a consistent pattern that supports the empirical evidence on this study, supporting the argument of upper echelons theory that posits CEO characteristics such as busy CEO shape firms' strategic decision making, including their CED practices.

Similarly, in Table 10, the presence of a star CEO shows a consistently positive and significant association with CED across all model specifications. The coefficient ranges from 0.799 to 0.878, indicating that firms led by CEO who have received awards and gained public recognition, high visibility, and media attention are more likely to disclose carbon related information. These results also align with upper echelons theory, as the elevated reputation and visibility of star CEO influence their strategic decision (Hambrick & Mason, 1984).

Evidence from previous studies further supports this finding. Research on Indonesian firms show that high visibility CEO significantly improve ESG performance by strengthening transparency, accountability, and alignment with societal expectation (Chandra et al., 2024). Similar findings from studies on Chinese firms indicate that star CEO positively improve ESG performance, driven by their confidence and high visibility, which generates stronger pressure compelling them to engage more actively in sustainability initiatives (Li et al., 2023). Additional evidence also demonstrates that award-winning CEO in Chinese firms contribute to higher ESG reporting quality, with financial constraints and media coverage acting as key mediating channels (Chen et al., 2025). Collectively, these studies align with this study, indicating that star CEO operates as a driver of CED practices.

Table 10. Regression Analysis

	(1) CED	(2) CED	(3) CED	(4) CED
BUSYCEO	0.229** (2.18)	0.233** (2.25)	0.236** (2.26)	0.241** (2.35)
STARCEO	0.799*** (3.89)	0.816*** (4.03)	0.863*** (4.30)	0.878*** (4.48)
ROA	1.925*** (4.21)	1.686*** (3.61)	1.467*** (3.18)	1.136** (2.40)
ROE	-0.276	-0.212	-0.243	-0.166

	(-1.49)	(-1.13)	(-1.35)	(-0.91)
BIG4	0.609***	0.685***	0.587***	0.667***
	(4.70)	(5.38)	(4.56)	(5.30)
LEV	-0.020	-0.015	-0.023	-0.018
	(-0.86)	(-0.65)	(-0.97)	(-0.78)
INDCOM	0.613***	0.657***	0.589***	0.634***
	(7.64)	(8.16)	(7.44)	(8.03)
FAGE	0.222**	0.247***	0.158**	0.186**
	(2.88)	(3.21)	(2.02)	(2.37)
CEOFEM	0.106	0.112	0.179	0.185
	(0.56)	(0.60)	(0.95)	(1.00)
_cons	0.069	-1.094***	0.556*	-0.614*
	(0.27)	(-3.23)	(1.89)	(-1.72)
Year FE	No	Yes	No	Yes
SIC FE	No	No	Yes	Yes
r2	0.158	0.175	0.182	0.202
r2_a	0.154	0.169	0.173	0.192
N	1653	1653	1653	1653

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Research Data, 2025

To ensure the robustness of the main regression results, a coarsened exact matching (CEM) test was conducted using coarsened variables of characteristics to increase the number of matches and maximize sample size and statistical power (Blackwell et al., 2009). The use of CEM aims to reduce bias in the analysis by aligning firms led by busy CEO or star CEO and those that are not. The matched sample provides cleaner comparison, strengthening the validity of the estimated effect of CEO characteristics on CED.

Table 11 presents the results for busy CEO, where Panel A shows that the matching process successfully paired 1,619 observations (540 non-busy CEO and 1,079 busy CEO), leaving only a few unmatched cases, indicating a well-balanced sample. Panel B presents the post-matching regression results, showing that the coefficient of busy CEO remains significant and positive ($\beta = 0.272$, $t = 2.569$), confirming that firms led by busy CEO continue to disclose higher levels of carbon emission information after controlling for selection bias. Similarly, Table 12 presents the result for star CEO, where 1,450 observations were successfully matched (1,318 non-star CEO, 132 star CEO), ensuring comparability between both groups. The coefficient of star CEO also remains significant and positive ($\beta = 0.841$, $t = 4.331$), indicating that firms led by CEO who have received awards and gained public recognition maintain a higher level of CED.

In both results, several control variables, including return on equity, audit quality, independent commissioner, and firm age, remain significant and positive, supporting the stability of the results. Overall, the CEM results reinforce the robustness, consistency, and reliability of the main regression findings.

Table 11. Coarsened Exact Matching on Busy CEO

PANEL A: Matching Summary		
	NON-BUSYCEO = 0	BUSYCEO = 1
All	550	1,103
Matched	540	1,079
Unmatched	10	24

PANEL B: Matching Summary	
	(1) CED
BUSYCEO	0.272** (2.569)
ROA	1.971*** (3.602)
ROE	-0.172 (-0.792)
BIG4	0.690*** (5.571)
LEV	-0.011 (-0.453)
INDCOM	0.665*** (9.270)
FAGE	0.240*** (2.994)
CEOFEM	0.113 (0.587)
_cons	-0.084 (-0.313)
r2	0.150
r2_a	0.145
N	1619

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Research Data, 2025

Table 12. Coarsened Exact Matching on Star CEO

PANEL A: Matching Summary		
	NON-STARCEO = 0	STARCEO = 1
All	1513	140
Matched	1318	132
Unmatched	195	8
PANEL B: Matching Summary		
	(1)	
	CED	
STARCEO	0.841***	
	(4.331)	
ROA	2.159***	
	(3.299)	
ROE	-0.361	
	(-1.361)	
BIG4	0.666***	
	(5.034)	
LEV	-0.029	
	(-1.013)	
INDCOM	0.608***	
	(7.952)	
FAGE	0.310***	
	(3.627)	
CEOFEM	0.497	

	(1.247)
_cons	-0.081
	(-0.295)
r2	0.172
r2_a	0.167
N	1450

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Research Data, 2025

Presented in Table 13, generalized least squares (GLS) regression was also performed to account for potential heteroskedasticity and serial correlation in the panel dataset, ensuring more efficient and unbiased coefficient estimates (Wooldridge, 2010). The GLS results confirm the robustness of the main findings, supporting both proposed hypotheses. The results show that busy CEO ($\beta = 0.181$, $t = 59.71$, $p < 0.01$) and star CEO ($\beta = 0.847$, $t = 83.17$, $p < 0.01$) have strong positive and significant effects on CED. Among the control variables, return on asset, audit quality, independent commissioner, firm age, and female CEO are all positive and significantly associated with CED.

Table 13. Generalized Least Squares

	(1) CED
BUSYCEO	0.181*** (59.71)
STARCEO	0.847*** (83.17)
ROA	0.946*** (65.13)
ROE	-0.145*** (-19.86)
BIG4	0.640*** (119.66)
LEV	-0.017*** (-18.97)
INDCOM	0.607*** (239.35)
FAGE	0.152*** (98.41)
CEOFEM	0.186*** (47.19)
_cons	-0.414*** (-5.45)
Year FE	Yes
SIC FE	Yes
F	
p	.
r2_p	
r2_a	
N	1508

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Source: Research Data, 2025

Conclusion and Suggestion

This study examined the relationship between busy CEO and star CEO on CED. The findings reveal that both busy CEO and star CEO significantly positively affect the level of CED, without driven by temporal or sectoral variation. Firms led by busy CEO who hold multiple directorships have access to broader professional networks, diverse managerial experiences, and strategic insights, which enhance their ability to respond to stakeholder expectations and promote greater transparency in carbon reporting. Likewise, firms led by star CEO who received awards and gained public recognition, high visibility, and media attention show a higher level of CED, reflecting the influence of personal reputation. Robustness tests using coarsened exact matching (CEM) and generalized least squares (GLS) confirm consistency and reliability of these findings. Guided by upper echelons theory, this study highlights that CEO characteristics play a crucial role in shaping the extent of CED. The positive effects of busy CEO and star CEO align with the idea that CEO experience, external exposure, and recognition influence their judgement and commitment to sustainability transparency. The findings demonstrate the importance of aligning sustainability initiatives with disclosure practices and provide insights for regulators on strengthening policies that encourage accountability to enhance the quality of sustainability practices.

This study also has several limitations. CED is measured using a simple disclosure count that reflects the quantity rather than the quality of CED. As a result, firms providing extensive but less detailed disclosure may receive scores similar to those offering more detailed and substantive disclosure. In addition, both busy CEO and star CEO are captured using dummy indicators, which simplify complex CEO characteristics into binary classifications. The busy CEO measure only CEO who hold at least two additional directorships, without capturing the variation in strategic relevance, time commitment, or workload involved. Similarly, the star CEO relies solely on award recognition, which may not fully reflect broader differences in reputation, leadership influence, or professional achievements. Future studies could employ more detailed measures, such as content analysis based on qualitative disclosure for CED, the frequency of board meetings attended for busy CEO, and broader reputation metrics to provide a more comprehensive assessment of star CEO.

References

- Al-Shaer, H., Albitar, K., & Liu, J. (2023). CEO power and CSR-linked compensation for corporate environmental responsibility: UK evidence. In *Review of Quantitative Finance and Accounting* (Vol. 60, Issue 3). Springer US. <https://doi.org/10.1007/s11156-022-01118-z>
- Al Naim, A. S., & Alomair, A. (2024). Board Composition and Environmental, Social, and Governance Reporting: Impact of Foreign and Busy Directors in Saudi-Listed Firms. *Sustainability (Switzerland)*, 16(20). <https://doi.org/10.3390/su16208985>
- Alsaifi, K., Elnahass, M., Al-Awadhi, A. M., & Salama, A. (2022). Carbon disclosure and firm risk: evidence from the UK corporate responses to climate change. *Eurasian Business Review*, 12(3), 505–526. <https://doi.org/10.1007/s40821-021-00190-0>
- Blackwell, M., Iacus, S., King, G., & Porro, G. (2009). Cem: Coarsened exact matching in Stata. *Stata Journal*, 9(4), 524–546. <https://doi.org/10.1177/1536867x0900900402>
- Bravo-Urquiza, F., & Reguera-Alvarado, N. (2025). The role of multiple board directorships in sustainability strategies: symbol or substance? *Review of Managerial Science*, 19(3), 871–898. <https://doi.org/10.1007/s11846-024->

00778-6

- Britton, G. M. (2018). Organizations and Networks. *Co-Design and Social Innovation*, 21(2010), 131–151. <https://doi.org/10.4324/9781315642307-9>
- Caby, J., Coron, C., & Ziane, Y. (2024). How does gender diversity in top management teams affect carbon disclosure and its quality: Evidence from the technological industry. *Technological Forecasting and Social Change*, 199(December 2023). <https://doi.org/10.1016/j.techfore.2023.123077>
- Camilleri, M. A. (2015). Valuing Stakeholder Engagement and Sustainability Reporting. *Corporate Reputation Review*, 18(3), 210–222. <https://doi.org/10.1057/crr.2015.9>
- Chandra, B., Krisyadi, R., Anita, & Jessica. (2024). The Role of Celebrity CEO in Enhancing Corporate ESG Performance. *Global Financial Accounting Journal*, 8(2), 120–133. <https://doi.org/10.37253/gfa.v8i2.10137>
- Chen, Y., Wang, Z., & Ye, F. (2025). How do prestigious CEOs change corporate ESG initiatives? *International Review of Financial Analysis*, 104273.
- Cho, S. Y., & Choi, Y. (2024). Star CEOs: influence on competitor CEOs' risk-taking. *Management Decision*, 62(3), 815–839. <https://doi.org/10.1108/MD-11-2022-1606>
- Choudhry, T., Kayani, U. N., Gul, A., Haider, S. A., & Ahmad, S. (2023). Carbon emissions, environmental distortions, and impact on growth. *Energy Economics*, 126(August). <https://doi.org/10.1016/j.eneco.2023.107040>
- Comello, S. D., Reichelstein, J., & Reichelstein, S. (2023). Corporate carbon reporting: Improving transparency and accountability. *One Earth*, 6(7), 803–810. <https://doi.org/10.1016/j.oneear.2023.06.002>
- Cooper, E. W., & Uzun, H. (2022). Busy outside directors and ESG performance. *Journal of Sustainable Finance and Investment*, 1–20. <https://doi.org/10.1080/20430795.2022.2122687>
- Dong, Y., Zhao, Y., Zhang, J., & Liu, P. (2022). Development of a framework of carbon accounting and management on the township level in China. *Journal of Environmental Management*, 318(June), 115609. <https://doi.org/10.1016/j.jenvman.2022.115609>
- Endo, K. (2025). Busy Outside Directors and Carbon Disclosure: When Do Talented Directors Turn Out to Be Incompetent? *Business Strategy and the Environment*, 1–14. <https://doi.org/10.1002/bse.70237>
- Fayad, A. A. S., Khatib, S. F. A., Abbas, A. F., Ghaleb, B. A. A., & Mousa, A. K. A. (2025). The determinants and consequences of board multiple directorships. *Corporate Governance (Bingley)*, 25(2), 252–271. <https://doi.org/10.1108/CG-07-2023-0310>
- Fombrun, C., & Shanley, M. (1990). What's in a Name? Reputation Building and Corporate Strategy. *Academy of Management Journal*, 33(2), 233–258. <https://doi.org/10.5465/256324>
- García-Sánchez, I. M., Aibar-Guzmán, B., Aibar-Guzmán, C., & Azevedo, T. C. (2020). CEO ability and sustainability disclosures: The mediating effect of corporate social responsibility performance. *Corporate Social Responsibility and Environmental Management*, 27(4), 1565–1577. <https://doi.org/10.1002/csr.1905>
- Global Carbon Project. (2023). *Carbon Emissions*. <https://globalcarbonatlas.org/emissions/carbon-emissions/>
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.2307/258434>
- Harymawan, I., Nasih, M., Rahayu, N. K., Kamarudin, K. A., & Wan Ismail, W. A.

- (2022). Busy CEOs and financial reporting quality: evidence from Indonesia. *Asian Review of Accounting*, 30(3), 314–337. <https://doi.org/10.1108/ARA-11-2021-0203>
- Harymawan, I., Nasih, M., Ratri, M. C., & Nowland, J. (2019). CEO busyness and firm performance: evidence from Indonesia. *Heliyon*, 5(5), e01601. <https://doi.org/10.1016/j.heliyon.2019.e01601>
- Houqe, M. N., Opore, S., & Zahir-Ul-Hassan, M. K. (2024). Carbon emissions, female CEOs and earnings management. *International Journal of Accounting and Information Management*, 32(4), 593–621. <https://doi.org/10.1108/IJAIM-11-2023-0296>
- Khalid, F., Ye, Z., Voinea, C. L., Naveed, K., & Akram, R. (2022). Carbon disclosure project: Chinese chief executive officer background and corporate voluntary climate change reporting. *Carbon Management*, 13(1), 321–336. <https://doi.org/10.1080/17583004.2022.2083983>
- Kumari, V., Sharma, A. S., Devineni, L., Das, D. S., Survase, D. R. B., & Ghode, N. (2025). Environmental Sustainability Development, Protection and Restoration: Challenges for a Green Environment. In *International Journal of Environmental Sciences* (Vol. 11, Issue 22). <https://doi.org/10.64252/rcb1hk30>
- Larraufie, A.-F. M., & Poulain, M. (2025). From Sustainability Strategic Decision to Its Implementation: CEO Responsibilities, Constraints, and Solutions. *Advances in Strategic Management and Leadership*, 1–12. <https://doi.org/10.5772/intechopen.1009652>
- Li, M., Huang, M., Wang, D., & Li, X. (2023). Star CEOs and ESG performance in China: An integrated view of role identity and role constraints logics. *Business Ethics, the Environment and Responsibility*, 32(4), 1411–1428. <https://doi.org/10.1111/beer.12579>
- Lu, J., Yu, D., Mahmoudian, F., Nazari, J. A., & Herremans, I. M. (2024). The influence of board interlocks and sustainability experience on transparent sustainability disclosure. *Business Strategy and the Environment*, 33(5), 3769–3793. <https://doi.org/10.1002/bse.3678>
- Lu, X., Wang, J., & Dong, D. (2013). Busy boards and corporate performance. *China Finance Review International*, 3(2), 203–219. <https://doi.org/10.1108/20441391311330618>
- Malmendier, U., & Tate, G. (2009). Superstar CEOs. *Journal of Economics*, 124(4), 1593–1638. <http://www.jstor.org/stable/40506267>
- Mardini, G. H., & Elleuch Lahyani, F. (2021). Impact of foreign directors on carbon emissions performance and disclosure: empirical evidence from France. *Sustainability Accounting, Management and Policy Journal*, 13(1), 221–246. <https://doi.org/10.1108/SAMPJ-09-2020-0323>
- Mohebbi, T., Au, S.-Y., & Tremblay, A. (2024). Top CEO Awards and Firm Profitability. *SSRN Electronic Journal*, 1–34. <https://doi.org/10.2139/ssrn.4795379>
- Onat, N. C., Mandouri, J., Kucukvar, M., Kutty, A. A., & Al-Muftah, A. A. (2025). Driving Sustainable Business Practices With Carbon Accounting and Reporting: A Holistic Framework and Empirical Analysis. *Corporate Social Responsibility and Environmental Management*, 32(2), 2795–2814. <https://doi.org/10.1002/csr.3096>
- Romadhina, I. N. S., & Probohudono, A. N. (2025). Carbon Emission Disclosure in Business & Economics: A Bibliometric Exploration of Trends and Insight. *Journal of Economics and Business*, 8(1). <https://doi.org/10.31014/aior.1992.08.01.655>
- Salsabilla, C., Adrianto, F., & Alfarisi, M. F. (2024). Carbon Emissions Disclosure:

- Study of Companies Classified as Carbon-Intensive Industries on the Indonesian Stock Exchange. *Jurnal Informatika Ekonomi Bisnis*, 6, 388–393. <https://doi.org/10.37034/infeb.v6i2.874>
- Saraswati, E., Amalia, R. S., & Herawati, T. (2021). Determinants of Carbon Emission Disclosure in Indonesia Manufacturing Company. *Asian Journal of Economics, Business and Accounting*, 21(3), 1–9. <https://doi.org/10.9734/ajeba/2021/v21i330356>
- Suparman, M., Lim, T., Jurnal, T., Septiany, S., & Suhardjo, I. (2024). How Ceo Narcissism Shapes Firm Performance Over Time: Evidence From Indonesia. *Jurnal Bisnis Dan Akuntansi*, 26(2), 323–344. <https://doi.org/10.34208/jba.v26i2.2613>
- Tang, S., & Sari, A. W. (2022). Pengaruh dewan direksi wanita pada pelaporan tanggung jawab sosial perusahaan 2017 -2021. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, 5(3), 1441–1450. <https://doi.org/10.32670/fairvalue.v5i3.2188>
- Tijani, A., & Ahmadi, A. (2022). An empirical study of the relationship between the busy outside directors and indicators of ESG performance. *Decision Science Letters*, 11(3), 323–332. <https://doi.org/10.5267/j.dsl.2022.2.001>
- Ulfa, F. N. A., & Ermaya, H. N. L. (2019). Effect of Exposure Media, Environmental Performance and Industrial Type on Carbon Emission Disclosure. *Jurnal Ilmiah Akuntansi Universitas Pamulang*, 7(2), 149. <https://doi.org/10.32493/jiaup.v7i2.2320>
- Wan, Y., Hong, Z., Liu, W., & Cui, J. (2023). Executives' education: A catalyst for enhanced ESG disclosure. *Finance Research Letters*, 58(PB), 104429. <https://doi.org/10.1016/j.frl.2023.104429>
- Wooldridge, J. M. (2010). Econometric Analysis of Cross Section and Panel Data. In *The MIT Press*.
- Ye, F., Han, X., & Li, X. (2024). Constraints under the Halo: The Constraining Effect of Corporate Reputation on Corporate Social Responsibility Behavior. *Sustainability (Switzerland)*, 16(19), 1–26. <https://doi.org/10.3390/su16198405>
- Yin, J., Li, J., & Ma, J. (2024). The Effects of CEO Awards on Corporate Social Responsibility Focus. *Journal of Business Ethics*, 190(4), 897–916. <https://doi.org/10.1007/s10551-023-05411-2>
- Zhang, Y. J., & Liu, J. Y. (2020). Overview of research on carbon information disclosure. *Frontiers of Engineering Management*, 7(1), 47–62. <https://doi.org/10.1007/s42524-019-0089-1>