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CEOs Accounting Background and ESG Disclosure: Empirical Evidence of Indonesian Listed Companies

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ABSTRACT

The main objective of this study is to provide empirical evidence that educational background and accounting experience of CEOs have a relationship with environmental, social, and governance (ESG) disclosure. Data was gathered from all listed companies on the Indonesia Stock Exchange from 2010 to 2020. 533 firms that published sustainability reports were selected as the sample for the research. The results indicate that CEOs with an educational background in accounting and work experience in accounting field, especially those who have worked at BIG4 accounting firms, have a significantly positive relationship with ESG disclosure. This means that CEOs who are well-versed in accounting are more sensitive to environmental issues and therefore, more likely to disclose more information about ESG. The findings suggest that CEOs with an accounting background are more environmentally conscious and can play a crucial role in expanding ESG disclosure.

Latar Belakang CEO Akuntansi dan Pengungkapan ESG: Bukti Empiris dari Perusahaan yang Terdaftar di Bursa Efek Indonesia

ABSTRAK

Penelitian ini bertujuan untuk memberikan bukti empiris bahwa latar belakang pendidikan dan pengalaman akuntansi para CEO memiliki hubungan dengan pengungkapan environmental, social, and governance (ESG). Data penelitian dikumpulkan dari seluruh perusahaan yang terdaftar di Bursa Efek Indonesia dari tahun 2010 hingga 2020. 533 perusahaan yang menerbitkan laporan keberlanjutan dipilih sebagai sampel penelitian. Hasilnya menunjukkan bahwa CEO dengan latar belakang pendidikan akuntansi dan pengalaman kerja di bidang akuntansi, khususnya yang pernah bekerja di kantor akuntan BIG4 memiliki hubungan positif yang signifikan dengan pengungkapan ESG . Ini berarti bahwa CEO yang berpengalaman dalam akuntansi lebih sensitif terhadap isu-isu lingkungan dan oleh karena itu, lebih mungkin mengungkapkan lebih banyak informasi tentang ESG. Hasil penelitian ini mendukung pemilihan CEOs dengan latar belakang pendidikan akuntansi yang umumnya lebih memiliki tingkat kesadaran yang lebih baik dalam pengungkapan ESG.

1. Introduction

In carrying out its business activities, the company not only focuses on profits but also has to look at the impact of the company's operational activities. Scholtens (2008) believe that firm’s survival is primarily determined by the correlation between the entity with society and environment. In 2017, Indonesian government issued the financial services authority regulation number 51 /POJK.03/2017 concerning the implementation of sustainable finance for financial services institutions, issuers, and public companies. Having sustainability report, companies are experienced to communicate their financial and non-financial performance. Disclosure issue regarding sustainability reports has grown and become one of the important things for every organization since it provides comprehensively going concern aspect in term of economic, social and governance issue for all stakeholders (EY, 2013; Tarigan & Semuel, 2015).

In recent years, ESG score has become a new trend for investors in determining their investment decisions. Although this problem exists in few years ago, the fact is there is no explicit written guidelines from Indonesian government related to ESG disclosure. It has not required ESG reporting as one of the regulations for companies to be listed on the stock exchange even though the sustainability development goals are already established (Sustainability Stock Exchange, 2015). Since early 2020, sustainability disclosure has become a mandatory thing for listed companies to do. This issue becomes important since it need concern of management to implement items that need to be listed on sustainability disclosure.

The company's sustainability reporting depends on how the Chief Executive Officer (CEO) address these issues. The concern of CEO provide direction to his subordinates to do what the CEO want. The personal characteristics of corporate executives need to be explored as mentioned from previous research that the measurement of executive characteristics represent corporate governance quality (Flammer et al., 2019; Hao et al., 2019). The previous research in CEO characteristic discusses many variables such as the tenure (Wu et al., 2005), work experience (Barker and Mueller, 2002; Wijethilake et al., 2018), political connections (Cailou et al., 2020), hubris (Galasso and Simcoe, 2011; Arena et al., 2018), and other individual characteristics of CEOs, including gender and age. These variables have been confirmed to have correlation with corporate environmental innovation (Galbreath, 2019; Lewis et al., 2014).

Specifically, this study wants to elaborate characteristics of CEOs in terms of education and working experience in the accounting field, which are associated with sustainability disclosure (ESG) due to some reasons. First, these variables serve the boarder perspective of sustainability literature by providing new drivers for corporate ESG from education and experience aspects. Former studies have typically identified the factors of environmentally production and the sustainable development in enterprises by considering the perspective of formal institutional factors, such as environmental regulations (Vona et al., 2018; Barbieri, 2015) and informal social capital, with detailed in term of public environmental demands (Eriksson, 2004). This study explores the area by develop variable into addressing ESG disclosure. Zhang & Zhu (2019) stated that ESG disclosure resulting from increased CEO education allows companies to produce the minimum level of cost and environmentally friendly models. Second, this study elaborates education and work experience perspective.

Recent research confirms the role of financial performance of corporation (such as leverage and profitability), firm structure (Aiello et al., 2019), and specific model of CEO characteristics, regarding variable of gender (Galbreath, 2019), work experience (Wijethilake et al., 2018), and also overconfidence factors (Arena et al., 2018). However, CEOs' educational and working experience have received relatively little attention. On of the relevant study by Amore et al. (2019) stated that there is significant impact of CEO education on corporate environmental decision-making as measured by energy efficiency with sample in Denmark companies. This study slightly differences as it explores the influence ofs CEO's education and work experience in accounting field. There is empirical evidence that found CEO with accounting background dominates the executive position since they almost participate indirectly in the business process. Accounting as a business communication require person who want to deep understanding in business process. Manner (2010) states the characteristic of CEOs with non-economic/ business/accounting educational backgrounds as conservative, less focused on profit, and are not concerned with personal interests because they own strength point in financial aspects. This challenge them on how balancing financial and non-financial aspect that captured by ESG issue in sustainability report.

Several studies have estimated the economic impact of CEO education (Boyallian & Ruiz-Verd, 2018; Wang & Yin, 2018). The correlation between CEO education and environmental impact have also been explored, while most studies have taken it as a control variable in analyzes of corporate social responsibility (CSR) (Borghesi et al., 2014; Gupta et al., 2021). Given the facts above, this research focuses on the integration of economic as a financial aspect with social, environment and governance as a non-financial aspect that translated into ESG disclosure and how the CEO's educational background affect it.

Using research by public firms in Indonesia Stock Exchange during 2010-2020, there is 533 samples of companies that publish sustainability reports were obtained. The result of this research show that the background of the CEO, whose education comes from accounting and his work experience in the accounting field, has a significant positive relationship with ESG disclosure. Furthermore, these results explain that CEOs with an accounting background are sensitive to environmental changes by disclosing more sustainability reporting. This is because CEO is aware that it is important to protect the environment and not only pursue profit.

The study has several key implications for regulators and policymakers who are concerned with sustainability reporting in companies. First and foremost, the study highlights the importance of considering the educational background of CEOs, particularly in accounting, when it comes to ESG (environmental, social, and governance) disclosure. The results show that CEOs with an education in accounting and experience in the field, especially those who have worked at BIG4 accounting firms, have a significantly positive impact on ESG disclosure. Furthermore, the study contributes to the broader research on environmental innovation by adding a new perspective from the perspective of executive education. This helps to broaden our understanding of the various factors that drive ESG disclosure in companies, and highlights the role that CEOs can play in this regard. Finally, the results of this study are of great interest to other researchers who are exploring how the characteristics of top management, such as education and experience, can affect ESG disclosure. The findings provide a starting point for further research in this area, and suggest that CEOs with an accounting background have a positive impact on ESG disclosure.

The rest of this paper is organized as follows. Section 2 provides a brief literature review and hypothesis development. Then, Section 3 introduces the research method. Next, section 4 discusses the results of this study. And lastly, section 5 provides the conclusion of this study.

2. Literature review and hypothesis development

Upper Echelon theory assumes that companies must consider reflection on personal values and cognitive bias (rationality of opinions) so that they are able to produce strategies and make effective decisions (Hambrick & Mason, 1984; Hambrick, 2007). Therefore, executive characteristics are a determinant of strategy selection, and it can be said that executive characteristics determine the results to be achieved by the company. Executive characteristics are divided into two, namely psychological and observable. Psychological characteristics are the cognitive basis, values, and perceptions of executives. While observable characteristics can be determined based on executive demographics such as age, tenure, functional background, education, socioeconomic roots, financial position, and group characteristics.

Hambrick and Mason (1984) show that the Upper Echelon theory is played by the personal characteristics of a CEO in decision-making and, thus, in determining the competitive position of their company. CSR activity is one of the decisions that must be discretionary by a CEO so that the values and personality will affect preferences and priorities in carrying out CSR activities (Chatterjee & Hambrick, 2007). Other factors influencing the CEO's desire to carry out CSR activities come from personal experience (Thomas & Simerly, 1994) and educational background (Slater & Dixon-Fowler, 2010).

Educational background can influence the selection of strategies and actions that will be taken by top executives (Finkelstein, Hambrick & Cannella, 2009). Hambrick and Mason (1984) state that the higher the degree of education a person has, the more capable the person is of dealing with external changes and complex environmental conditions. This is because the formal educational background can reflect one's cognitive abilities, especially thinking that is more open-minded and educational background is related to one's level of acceptance to innovate (Finkelstein et al., 2009) so that one can deal with external changes and complex environmental conditions (Finkelstein et al., 2009) (Hambrick & Mason, 1984). In addition, education can form an individual's values and beliefs in behaviour (Frank, Gilovich & Regan, 1993).

Manner (2010) argues that CEOs with educational backgrounds in economics/business/ accounting have a significant negative relationship to the level of CSR performance. Manner (2010) states that CEOs with non-economic/business/ accounting educational backgrounds are less focused on profit and are not concerned with personal interests. Lessons on ethics and social responsibility in economics learning are still lacking (Arce, 2004), so the level of CSR performance will be low. Previous research (Arlow, 1991) also stated that educational backgrounds in non-economic/business/accounting have higher ethical values. Ethics is a human reflection on what is done and done over a long period, which will affect a person's behaviour (Bertens, 2007).

In this study, we believe CEOs with an accounting education background will positively affect ESG disclosure. This is based on previous research that explores research on majors that CEOs have studied that have a relationship with CSR disclosure (Zhou et al., 2021). Therefore, our first research hypothesis is made as follows.

H_1: CEOs who have an accounting education background have a significantly positive relationship with ESG disclosure.

The focus of the CEO with an economic/ business/accounting education background is to gain profit and prioritize personal interests so that he considers CSR activities only as a burden for the company. Moser and Martin (2012) state that CSR activities can burden the company's shareholders. McWilliams and Siegel (2001) found that companies that carry out CSR activities will have a higher burden than companies that do not carry out CSR activities. However, the profit level between the companies will be the same if the company carefully considers the cost-benefit analysis. McWilliams and Siegel (2001) require decision-makers to use cost-benefit analysis in determining CSR activities that maximize profits and meet the needs of stakeholders.

We believe CEOs with at least experience working in accounting have environmental sensitivity. Moreover, one accounting field often related to accounting is work in accounting firms such as BIG4. For that, we make the second hypothesis of this study as follows.

H_2: CEOs who have a working experience in BIG4 firms have a significantly positive relationship with ESG disclosure.

3. Research method

Research samples

This study uses a sample of all companies listed on the Indonesia Stock Exchange from 2010-2020 that published a Sustainability Report. After reducing the sample with many missing data because not many companies disclose SR, we get a final sample of 533. The sample selection criteria can be seen in table 1 below. We chose the 2010-2020 period for data collection because many sustainability reports in Indonesia have started to be published, and the number has continued to increase since 2010. We limit the sampling time to 2020 because, in 2021, public companies in Indonesia are required to publish a sustainability report. Therefore, so that the data criteria are equal and do not cause bias due to existing regulations, we limit the sample to 2020 only.

Table 1. Sample selection criteria

Selection Criteria	Total
Initial observations from 2010-2020	6,789
Excluded	
Firms with missing ESG data	(4,585)
Firms with missing CEO characteristics data	(1,176)
Firms with missing control variables data	(495)
Final observations (N)	**533**

Measurement of independent variables

In measuring the independent variables, we use two proxies: education and work experience. CEO education originating from accounting (CEOACCOUNT) is measured by a dummy variable of 1 if the CEO's major education while studying at the undergraduate or postgraduate level is accounting, 0 otherwise. Furthermore, the CEO's experience in accounting (CEOBIG4) is measured by a dummy of 1 if the CEO has worked in BIG4 accounting firms, and 0 otherwise. In measuring ex-auditor executives, especially CEOs, we follow previous research (Ngelo et al., 2022b).

Measurement of dependent variables

The dependent variable, ESG disclosure, is measured using the Global Reporting Initiatives (GRI) sustainability report guidelines, which are widely used in ESG and sustainability research. The GRI guidelines changed four times during the study period, from GRI G3, GRI G3.1, GRI G4, to GRI Standard, which means that the sustainability reports of the sample companies may vary in terms of the guidelines used. The ESG reporting variable was measured by the number of items disclosed in the sustainability reports, divided by the total items provided by each GRI guideline. For instance, GRI G3 had 123 items, GRI G3.1 126 items, and GRI G4 had 150 items. In the case of GRI Standard, there are two options available - core and comprehensive. The number of items for the core option varied for each firm, as they were allowed to choose the most relevant items based on their current situation. The comprehensive option had 147 items. Based on the methodology outlined by Harymawan et al. (2021b), the study assumes that the firm will use the GRI guideline applied during the observation year, unless they state otherwise.

Control variables

We use several control variables following previous studies, such as (Zhou et al., 2021), to control the empirical model of this study. CEO age (CEOAGE) was used to control for the characteristics of other CEOs. Board size (BOARDSIZE) and independent commissioners (INDCOMSIZE) are used to control the company's governance characteristics. Furthermore, company characteristics such as firm size (FIRMSIZE) and level of leverage (LEV) are also used. Lastly are important financial ratios such as profitability (ROE) and cash ratio (CASHTA). We also control this study by looking at whether the company is audited with a BIG 4 accounting firm or not (BIG4). For more details regarding the operational definition of variables, see Table 2 below.

Table 2. Operational definition of variables

Variable	Explanations	Sources
Dependent:		
ESG	Environmental, social, and governance (ESG) disclosures by GRI index	Sustainability reporting
Independent:		
CEOACCOUNT	Dummy 1 if CEO certified in accounting fields, 0 otherwise	Annual report
CEOBIG4	Dummy 1 if CEO were experienced in BIG4 accounting firms, 0 otherwise	Annual report
Controls:		
CEOAGE	The number age of current CEO	Annual report
BOARDSIZE	Natural logarithm of board size in the company	Annual report
INDCOMSIZE	Percentage of independent commissioners to total commissioners	Annual report
FIRMSIZE	Natural logarithm of total assets	Osiris
LEV	Debt to total assets ratio	Osiris
ROA	Net income to total assets ratio	Osiris
CASHTA	Cash and equivalent to total assets	Osiris
BIG4	Dummy 1 if firms audited by BIG4, 0 otherwise	Annual report

Empirical model

The test carried out in this study was using multiple linear regression with the help of STATA 17 software to determine the relationship between the CEO's accounting background in terms of his educational background and his work associated with ESG disclosure. The empirical model of this research is as follows.

$$ESGit = \alpha + \beta 1CEOACCOUNTit + Controls + Industry\ FE + Year\ FE + \varepsilon \qquad (1)$$

$$ESGit = \alpha + \beta 1CEOBIG4it + Controls + Industry\ FE + Year\ FE + \varepsilon \qquad (2)$$

For an explanation of the definitions of the variables above, refer to table 2.

4. Results and discussion

Table 3 shows the distribution of the sample by industry and year. It can be seen that each year the number of companies publishing sustainability reports has increased from 37 in 2010 to almost doubled recently. Companies with SIC 1 are the companies that publish the most sustainability reports in this study, as many as 156.

Table 3. Sample distribution by industry and year

SIC	Year											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
0	3	2	4	4	4	5	5	4	5	9	5	50
1	11	11	12	14	14	14	15	15	15	20	15	156
2	7	6	7	7	10	10	10	9	10	12	12	100
3	4	6	6	5	6	7	6	7	8	9	3	67
4	6	6	8	9	9	9	9	8	9	8	6	87
5	3	3	3	3	3	3	3	3	2	5	5	36
6	0	0	0	0	0	0	0	0	0	0	5	5
7	2	2	2	2	2	2	2	1	1	1	2	19
8	1	1	1	1	1	1	1	0	0	2	4	13
Total	37	37	43	45	49	51	51	47	50	66	57	533

Descriptive statistics

Furthermore, Table 4 Panel A shows the descriptive statistics of this study. It can be seen that the average ESG disclosure of the companies used in this study is 0.510. This means that companies that have published SR in this study on average have disclosed ESG more than half. The maximum value of ESG disclosure is 1 because the form is an index so the maximum proportion is 100%.

Table 4. Results of descriptive statistics analysis

Panel A

	Mean	Median	Minimum	P25	P75	Maximum
ESG	0.510	0.520	0.105	0.304	0.663	1.000
CEOAGE	53.326	54.000	34.000	49.000	58.000	74.000
BOARDSIZE	11.373	12.000	4.000	9.000	13.000	23.000
INDCOMSIZE	0.373	0.333	0.000	0.333	0.429	3.000
FIRMSIZE	30.322	30.390	25.535	29.564	31.167	33.495
LEV	0.536	0.537	0.104	0.379	0.661	1.923
ROA	0.056	0.042	-1.072	0.008	0.093	0.657
CASHTA	0.117	0.103	0.001	0.049	0.165	0.590

Panel B

	Dummy 1	Dummy 0	N	Percentage	Mean
CEOACCOUNT	50	483	533	9.38%	0.094
CEOBIG4	12	521	533	2.25%	0.023
BIG4	362	171	533	67.92	0.679

Panel B of the data presents a comparison between the average number of CEOs with an accounting education background and those with experience at BIG4 (a term used to refer to the four largest professional services firms in the world, which are Deloitte, PwC, EY, and KPMG). According to the data, the average number of CEOs with an accounting education is 0.094. This value is significantly lower compared to the average number of CEOs with experience at BIG4, which is 0.023. This comparison indicates that there is a scarcity of CEOs with an accounting education background. In other words, a very small proportion of CEOs have a background in accounting. It is also important to note that having experience at BIG4 is a strong indicator of having a background in accounting, as these firms are well known for providing accounting and consulting services. Therefore, it can be concluded that the majority of CEOs do not have a background in accounting, and those who do are likely to have acquired their experience through working at one of the BIG4 firms.

Pearson correlation

Table 5 above shows the Pearson correlation from this study and shows that CEOs with an accounting background and experience working at BIG4 have a univariately significant positive relationship with ESG disclosure. All control variables showed a univariately significant positive relationship with ESG, but LEV was negatively related, while INDCOMSIZE and BIG4 showed no relationship.

Table 5. Pearson correlation

		[1]	[2]	[3]	[4]	[5]
[1]	ESG	1.000				
[2]	CEOACCOUNT	0.097**	1.000			
		(0.026)				

[3]	CEOBIG4	0.076*	0.255***	1.000		
		(0.079)	(0.000)			
[4]	BIG4	0.068	0.042	0.104**	1.000	
		(0.116)	(0.334)	(0.016)		
[5]	AGE	0.188***	0.001	-0.002	-0.053	1.000
		(0.000)	(0.988)	(0.968)	(0.223)	
[6]	BSIZE	0.211***	0.053	-0.030	0.251***	0.127***
		(0.000)	(0.219)	(0.493)	(0.000)	(0.003)
[7]	INDCOMSIZE	-0.041	0.044	-0.009	-0.128***	0.031
		(0.349)	(0.307)	(0.845)	(0.003)	(0.472)
[8]	FIRMSIZE	0.234***	-0.002	-0.090**	0.209***	0.091**
		(0.000)	(0.971)	(0.038)	(0.000)	(0.036)
[9]	LEV	-0.159***	-0.120***	-0.058	-0.285***	-0.089**
		(0.000)	(0.005)	(0.184)	(0.000)	(0.041)
[10]	ROA	0.083*	-0.035	0.017	0.282***	-0.016
		(0.055)	(0.415)	(0.694)	(0.000)	(0.707)
[11]	CASHTA	0.108**	-0.110**	-0.003	0.162***	0.039
		(0.012)	(0.011)	(0.941)	(0.000)	(0.373)

		[6]	[7]	[8]	[9]	[10]	[11]
[6]	BSIZE	1.000					
[7]	INDCOMSIZE	-0.126***	1.000				
		(0.004)					
[8]	FIRMSIZE	0.593***	-0.025	1.000			
		(0.000)	(0.561)				
[9]	LEV	-0.167***	-0.010	0.075*	1.000		
		(0.000)	(0.824)	(0.084)			
[10]	ROA	0.178***	-0.086**	-0.066	-0.419***	1.000	
		(0.000)	(0.047)	(0.127)	(0.000)		
[11]	CASHTA	0.033	0.005	-0.024	-0.407***	0.284***	1.000
		(0.452)	(0.911)	(0.580)	(0.000)	(0.000)	

p-values in parentheses

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

Regression result

The regression that has been carried out to test CEOs with an accounting education background and work experience at BIG4 can be seen in Table 6. The table shows that CEOACCOUNT has a significant positive relationship with ESG (Coeff = 0.064, t = 2.15). This result indicates that CEOs who have an educational background from accounting majors will increase the ESG disclosure that the company will report.

Previous research examining the CEO's educational background in business or economics, engineering, and natural science has no significant impact on ESG performance (Kutzschbach et al., 2020). We capture the study's shortcomings because it only generally sees major in business or economics, engineering, and natural science. Therefore, we conducted this study specifically on the accounting major to clarify the differences caused by previous studies. It turns out that the accounting education background of a CEO has a significant positive relationship with the company's ESG. This certainly supports previous research that examines the CEO's educational background on ESG disclosure (E-Vahdati & Binesh, 2022).

Furthermore, in the second column, it can be seen that CEOBIG4 has a significant positive relationship with ESG (Coeff = 0.135, t = 2.43). The comparison between the average number of CEOs with an accounting education background and those with experience at BIG4 companies has additional implications for environmental, social, and governance (ESG) disclosure in company reporting.

The results suggest that CEOs with experience at BIG4 companies are more likely to increase ESG disclosure in company reporting. This is because BIG4 firms have a reputation for providing accounting and consulting services that take into account the impact of a company's activities on the environment and society. Thus, CEOs who have worked at BIG4 companies are likely to have developed a strong understanding of the importance of ESG issues and the need for disclosure.

On the other hand, CEOs with an accounting education background are believed to have a sensitivity to the environment. This is because accounting education emphasizes the importance of holistic decision-making that balances financial performance with the impact of a company's activities on the environment and society. Therefore, CEOs with an accounting education background are more likely to prioritize ESG issues in their reporting and decision-making.

In summary, the comparison between the average number of CEOs with an accounting education background and those with experience at BIG4 companies highlights the potential for increased ESG disclosure in company reporting. This is due to the sensitivity to the environment and focus on holistic decision-making that is associated with both accounting education and experience at BIG4 companies (Li et al., 2022; Nguyen & Thanh, 2022; Oware & Awunyo-Vitor, 2021; Villalba-Ríos et al., 2022; Zhang et al., 2022; Zou et al., 2015).

There is no specific research that is specific to examine how the background of the work in the accounting firms, especially Big4 is related to ESG disclosure. However, this research can extend from a study conducted by Bose et al. (2022) on CSR Performance regarding CEO of the CEO of Committee/Board Interlocking. And also, research by Ngelo et al. (2022a) which shows that the background of the CEO auditor can influence company decision-making, especially the decision of CSR disclosure, because their audit experience is also related to the monitoring of the Mechanism of Voluntary Information, such as CSR disclosure.

In addition, auditors are practically accustomed to being asked to have a professional assessment when doing their work, so they are more aware and careful in terms of running a sustainable business by expressing CSR. In furtherance, auditors are familiar with the expectation of providing a professional evaluation as part of their duties. This experience and familiarity make them more conscious and diligent in ensuring that the business they are auditing is sustainable by making CSR disclosures. This heightened awareness and attention to sustainability helps to promote responsible business practices, which ultimately contribute to the growth and longevity of the organization. The role of auditors in promoting sustainability and CSR through their work highlights the importance of the relationship between auditors and the organizations they serve (LópezPuertas-Lamy et al., 2017; Morimoto et al., 2005; Pucheta-Martínez et al., 2019; Sun et al., 2017). Therefore, this study's results indicate that the study's first and second hypotheses are accepted.

Table 6. Regression results of executive directors' accounting background and ESG disclosure

	(1) **ESG**	**(2)** **ESG**
CEOACCOUNT	0.064**	
	(2.15)	

CEOBIG4		0.135**
		(2.42)
BIG4	0.045**	0.041**
	(2.42)	(2.21)
CEOAGE	0.002	0.002
	(1.51)	(1.43)
BOARDSIZE	0.008**	0.009**
	(2.41)	(2.58)
INDCOMSIZE	-0.095**	-0.093**
	(-2.58)	(-2.55)
FIRMSIZE	0.018**	0.020**
	(2.31)	(2.52)
LEV	0.003	-0.005
	(0.05)	(-0.11)
ROA	0.160**	0.156**
	(2.14)	(2.10)
CASHTA	0.199	0.197
	(1.40)	(1.38)
_cons	-0.296	-0.315
	(-1.38)	(-1.45)
Industry FE	Yes	Yes
Year FE	Yes	Yes
r2	0.357	0.358
r2_a	0.322	0.324
N	533	533

t statistics in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Additional analysis

Furthermore, we also conduct additional analysis to enrich the results of research studies and see more deeply the implications in the company's sub-sample. Therefore, we divide it into two categories of company samples audited by Big4 Audit Firms and the company's size.

Big4 vs. Non-Big4 firms sample

Table 7 can be seen when the sample of this research is applied based on the company audited by Big4 vs Non-Big4. In this sample, it turns out that the majority of companies that have issued Sustainability Reports are audited by Big4, a total of 362 compared to those other than Big4, namely 171. The results shown are also interesting. Can be seen in columns 1 and 2, which invested the CEO's educational background in accounting, showing the opposite results when Big4 did not audit the company. This indicates how important the audit firm's quality is in auditing the company.

While in column 3 and 4, which investigated the background of the CEO auditor, only showed significant positive on the sample of the company being audited by Big4. This indicates that the company's audit firm is important in ensuring financial information so that the demands related to ESG that should be fully disclosed are also not captured in the company that is not audited by Big4.

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Table 7. Regression results of executive directors' accounting background and ESG disclosure on Big4 vs. Non-Big4 firms' sample

	Big4	**Non-big4**	**Big4**	**Non-big4**
	(1)	**(2)**	**(3)**	**(4)**
	ESG	**ESG**	**ESG**	**ESG**
CEOACCOUNT	0.099***	-0.087*		
	(2.65)	(-1.92)		
CEOBIG4			0.135**	0.000
			(2.41)	(0.00)
_cons	-0.315	-0.672**	-0.303	-0.682**
	(-0.96)	(-2.11)	(-0.90)	(-2.10)
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
r2	0.327	0.604	0.325	0.596
r2_a	0.275	0.532	0.272	0.526
N	362	171	362	171

t statistics in parentheses
* p < 0.1, ** p < 0.05, *** p < 0.01

Big firms vs. small firms sample

Furthermore, we also examined further how the implications of this research were when the company's sample was divided into Big vs Small Firms. We divide the company sample into Big or Small based on the median value of the firm size. It turns out that the CEO with an accounting background does not have a significant relationship with ESG in a big or small company sample. Meanwhile, for CEOs who were previously experienced as auditors at BIG4 it turned out that the results remained consistent both in the samples of big or small companies. This result shows that in the context of company size, CEOs with work experience in the Firms audit have a relationship with ESG while educational backgrounds in the accounting field are not. Further, the results can be seen in Table 8 below.

Table 8. Regression results of executive of directors' accounting background and ESG disclosure on big firms vs. small firms' sample

	Big firm size	**Small firm size**	**Big firm size**	**Small firm size**
	(1)	**(2)**	**(3)**	**(4)**
	ESG	**ESG**	**ESG**	**ESG**
CEOACCOUNT	0.016	0.058		
	(0.32)	(1.26)		
CEOBIG4			0.172*	0.126**
			(1.96)	(2.30)
_cons	1.422***	-0.573	1.397**	-0.669
	(2.61)	(-1.24)	(2.53)	(-1.41)
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
r2	0.294	0.473	0.301	0.476
r2_a	0.215	0.413	0.222	0.417
N	267	266	267	266

t statistics in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01

Robustness test

Coarsened exact matching (CEM)

This paper used endogeneity tests to ensure endogeneity problems were minimized in the results. It is important to carry out endogeneity tests in order to gain confidence that this paper has met the necessary condition to obtain valid results (Roberts & Whited, 2013). This paper used Coarsened Exact Matching (CEM) analysis for additional observed variables, self-selection bias test. Table 9 reports the CEM regression result. This paper's CEM regression employs AGE, BIG4 BOARDSIZE, INDCOMSIZE, FIRMSIZE, LEV, ROA, and CASHTA for matched variables based on three strata. The results are similar to the main findings in Table 6. Thus, it can be confirmed the main findings did not change when using the matched approach.

Table 9. CEM regression result

	0	**1**	**0**	**1**
All	483	50	521	12
Matched	424	50	278	12
Unmatched	59	0	243	0

	(1)	**(2)**
	ESG	**ESG**
CEOACCOUNT	0.053*	
	(1.79)	
CEOBIG4		0.123**
		(2.14)
AGE	0.002	0.001
	(1.64)	(0.28)
BIG4	0.039*	0.000
	(1.93)	(0.00)
BOARDSIZE	0.009***	0.018***
	(2.76)	(2.74)
INDCOMSIZE	-0.093	-0.160
	(-1.26)	(-1.54)
FIRMSIZE	0.015*	0.015
	(1.66)	(1.00)
LEV	-0.120***	-0.191***
	(-2.64)	(-2.62)
ROA	0.217**	0.215
	(2.58)	(1.64)
CASHTA	-0.150	-0.454**
	(-1.03)	(-2.43)
Industry FE	Yes	Yes
Year FE	Yes	Yes
_cons	-0.169	-0.054
	(-0.68)	(-0.14)
r2	0.387	0.367
r2_a	0.350	0.304
N	474	290

t statistics in parentheses

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

Heckman's two-stage regression

Following Harymawan (2020), this paper used Heckman's Two-Stage Regression to overcome the problem of the potential sample-selection bias. This paper estimated the possibility of potential sample-selection bias problems since the firms have discretion to hire a CEO with accounting background or a CEO with working experience at

BIG 4 or not both. Following Heckman's (1979) two stage procedure, this paper estimated the probit model to predict factors related to CEO with accounting and BIG 4 background but not having a direct association with ESG disclosure. Referring to Harymawan et al. (2021a), this paper used the MEANCCOUNT and MEANCBIG variables as instrumental variable. MEANCCOUNT measures the percentage of CEO with accounting background in a year while MEANCBIG measures the percentage of CEO with working experience at BIG 4 in a year.

Through Heckman's two-stage analysis test, this paper included all control variables in both the first and second stages. The inverse mills ratio (MILLS) resulting from the first stage regression was included in the second stage regression with other variables. The results of the Heckman's two-stage regression are presented in Table 10. Models 1 show that the main variables of interest were positive and significant coefficients on the instrumental variables. Meanwhile, models 2 show the results of the second stage of regression. These results confirm the main findings in Table 6 after considering sample selection bias.

Table 10. Heckman's two-stage regression result

	First Stage	**Second Stage**	**First Stage**	**Second Stage**
	(1)	**(2)**	**(1)**	**(2)**
	CEOACCOUNT	**ESG**	**CEOBIG4**	**ESG**
MEANCCOUNT	0.107**			
	(2.21)			
MEANCBIG			1.647***	
			(6.05)	
CEOACCOUNT		0.060**		
		(2.04)		
CEOBIG4				0.124**
				(2.22)
AGE	-0.022*	-0.003	-0.017	0.002
	(-1.71)	(-1.05)	(-0.64)	(1.47)
BIG4	0.110	0.069***	6.228***	0.037**
	(0.48)	(2.91)	(4.88)	(1.98)
BSIZE	0.078*	0.024**	0.012	0.009***
	(1.82)	(2.52)	(0.22)	(2.75)
INDCOMSIZE	0.495	0.015	0.745	-0.088**
	(1.40)	(0.21)	(0.49)	(-2.41)
FIRMSIZE	0.001	0.020**	-0.584***	0.019**
	(0.01)	(2.50)	(-2.74)	(2.37)
LEV	-1.495***	-0.326*	-2.124*	-0.010
	(-2.61)	(-1.72)	(-1.86)	(-0.22)
ROA	-1.622	-0.184	-3.390**	0.157**
	(-1.12)	(-0.88)	(-1.99)	(2.10)
CASHTA	-1.545	-0.134	-4.134**	0.204
	(-1.15)	(-0.64)	(-2.14)	(1.43)
MILLS		0.252*		-0.003
		(1.71)		(-1.53)
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

_cons	-0.358	-0.543**	0.240	-0.269
	(-0.13)	(-2.04)	(0.04)	(-1.22)
r2_p	0.303		0.430	
r2_a		0.324		0.326
N	533	533	533	533

t statistics in parentheses
* p < 0.1, ** p < 0.05, *** p < 0.01

5. Conclusions

This paper aims to test the relationship between accounting CEOs with environmental, social, and governance (ESG) disclosures. The outcome of this study shows that there is a significantly positive relationship of CEOs who have an accounting background and ESG disclosures. This reinforces the argument that CEOs with an accounting background have a higher environmental sensitivity by disclosing more about ESG. Additionally, this study found that CEOs who have had prior experience working in BIG4 companies exhibit a significantly positive relationship with ESG disclosure. These findings suggest that a CEO's educational background in accounting and professional experience are significantly associated with increased ESG reporting.

Furthermore, this study also makes some theoretical contributions to the academic community. Firstly, it expands on previous research by considering the educational background and work experience of CEOs with an accounting background and their impact on ESG reporting. By exploring this relationship, it provides a more comprehensive understanding of the factors that influence ESG reporting.

Secondly, it contributes to the growing field of sustainability research by introducing a new driving variable from the CEO's perspective. The inclusion of CEO background and experience as a potential determinant of ESG reporting broadens the scope of sustainability research and provides new avenues for future research.

Thirdly, it adds to the limited existing literature on CEO backgrounds by focusing on their role in sustainability reporting. This study provides valuable insights into the relationship between CEO background and experience and ESG reporting, filling a gap in the literature on the topic.

Finally, this study provides valuable recommendations to policymakers, suggesting that they should consider firm heterogeneity in decision-making processes. The results of this study indicate that the CEO's background and experience play a significant role in ESG reporting, and thus, policymakers should take these factors into account when formulating regulations related to ESG disclosure. These findings can also be relevant to other economies with similar characteristics, providing valuable insights for policymakers in those regions.

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