

Analysis of CEO Characteristics on Sustainability Development in Mining Companies in Indonesia

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Abstract: - The National Energy Policy (KEN) and the Paris Agreement are strategic measures in Indonesia aimed at facilitating the shift towards the adoption of new, sustainable energy sources. Conversely, the sustainable development of firms in Indonesia remains a hotly debated and evolving topic. Multiple firms have incorporated sustainable development methods into their company operations, which include prioritizing environmental and social considerations, enhancing worker well-being, and practicing responsible resource management. The government is dedicated to mitigating greenhouse gas (GHG) emissions by using innovative and sustainable energy sources. Hence, investigating the correlation between corporate sustainability development and firm performance in the mining sector is intriguing, as the sustainable growth of mining companies plays a pivotal role in the government's successful implementation of KEN. The study will employ a descriptive quantitative approach by utilizing a panel data regression model to analyze the characteristics of CEOs in the mining industry. The study's findings indicate that the panel data model can offer a comprehensive framework for subsequent investigation of the correlation between CEO qualities and the sustainability development performance of companies in the Indonesian mining sector.

Key-Words: - Sustainability growth, CEO Attributes, Company Performance, Mining Industry.

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1 Introduction

According to [1], the Chief Executive Officer (CEO) holds the highest position inside an organization and is ultimately accountable for the day-to-day operations of the business. The CEO is perceived to possess the capacity to exert influence over the operations of the firm, hence impacting its performance in attaining organizational objectives, namely in maximizing the company's value, [2].

Sustainable development is a comprehensive method that incorporates economic, social, and environmental factors into the process of planning and decision-making. The topic of sustainable development in Indonesian companies is currently a subject of extensive discussion and ongoing development. Multiple firms have adopted sustainable development strategies in their company operations, which involve focusing on environmental and social considerations, prioritizing worker well-being, and practicing responsible resource management. Nevertheless, there are still companies that neglect these factors and prioritize solely economic considerations.

The CEO plays a vital role as a decision-maker in incorporating economic, environmental, and social factors into sustainable development strategies within the company's operations. Studying CEO qualities is crucial as they have a direct and indirect impact on their level of care for not just economic factors, but also environmental and social factors, [3].

[4], demonstrated that a CEO with a substantial ownership stake in the firm will exert significant influence on all aspects of the company's decision-making process. If the CEO possesses a substantial number of shares in the firm they oversee, they can exert influence over the selection of other board members, so elevating their status above that of other directors, [5]. The CEO's attributes, such as their educational background and experience, can also have an impact on the performance of the organization. A CEO with a strong educational background and extensive experience is more likely to possess superior managerial skills and the ability to effectively steer the company, even in adverse circumstances, ensuring its long-term sustainability, [6].

Moreover, the National Energy Policy (KEN) and the Paris Agreement serve as measures to facilitate the energy transition in Indonesia, specifically towards the use of novel and sustainable energy sources. The government is dedicated to diminishing greenhouse gas (GHG) emissions by utilizing novel and sustainable energy sources. The utilization of low-carbon technology or decarbonization in the energy industry is a strategy to attain this objective and incorporate sustainable development practices in all business operations. Hence, the objective of this study is to examine the CEO attributes about sustainable growth in energy firms, with a particular focus on the mining industry in Indonesia.

2 Literature Review and Hypothesis Development

2.1 Agency Theory

By agency theory, management and shareholders are each other's agents and principals. According to [7], an agency relationship arises when a principal appoints an individual as an agent to perform a service and assigns decision-making authority to the agent. When a manager assumes control of a firm, they are entrusted with the responsibility of advancing the financial well-being of shareholders, as mandated by the principal. Agency theory posits that firm management, acting as agents for shareholders, will prioritize their interests rather than acting as impartial and equitable representatives of shareholders. According to agency theory, there is a belief that management cannot be relied upon to prioritize the well-being of the public and shareholders. This lack of confidence leads to the emergence of agency difficulties, [8].

Agency problems, as defined by [9], are conflicts resulting from the division of responsibilities between the owner and management as corporate managers. This conflict emerges due to divergent interests amongst the parties involved. The shareholder, who is the main, aims to enhance the value of his shares, whereas the management seeks profits to satisfy personal interests, [10]. A key component of applying strong corporate governance is the interaction between the principal and the agent, [11].

2.2 CEO Characteristics

The educational qualifications of the board of commissioners and directors have a cognitive attribute that might impact their capacity to make

business decisions and effectively manage the company, [12]. [5], asserted that education level has a crucial role in determining career advancement and salary. Having a high degree of education is important for managers as it enhances their status and enables them to make optimal judgments, [13]. According to [14], there is a positive correlation between the level of education one pursues, specifically about their line of work, and the extent of their intellectual experience. An individual who possesses this cognitive encounter typically exhibits proficiency in executing their tasks effortlessly. Moreover, individuals with a higher level of education are more likely to actively engage in decision-making processes and possess the skills necessary to effectively manage a company, [14].

The CEO possesses an educational background that aligns with the topic of study he has studied throughout his life, [6]. The CEO's decision-making and policy formulation are informed by their relevant educational background. The educational background of the CEO might indirectly impact the company's success by influencing their knowledge and abilities, [12].

There is a divergence of views about the selection of a CEO, whether it originates from within the company or from external professional circles, [5]. Furthermore, he explained that the promotion of an employee to the position of CEO inside a firm is attributed to their exceptional skills and superiority in comparison to other managers. The empirical study conducted by [15], found that CEOs who have been promoted from inside the firm and are also on the board of directors had a greater level of company-specific experience. As a result, they can make judgments that are more effective and efficient.

2.3 Company Sustainability Growth Performance

As per the Global Reporting Initiative (GRI), a sustainability report is a comprehensive account of an organization's economic, environmental, and social consequences, encompassing both good and negative contributions. It is readily available for public access. The GRI content index is used to assess the disclosure of sustainability reports. The GRI index serves as a navigational aid that indicates the utilization of GRI Standards, the extent of disclosures made, and the specific locations within reports or other sources where these disclosures can be located. According to the GRI-101 sustainability reporting standard, there are three types of disclosure summaries: general disclosure, management understanding, and topic-specific

disclosure. The disclosure of certain topics is categorized into three primary domains: economic, environmental, and social. Based on the content of these disclosures, 148 content indices can be used as a basis for generating the GRI content index (SRDI). The GRI content index can be calculated using the following formula.

$$SRDI = \frac{\text{jumlah pengungkapan yang diungkapkan}}{\text{jumlah pengungkapan yang diharapkan untuk diungkapkan}}$$

2.4 Hypothesis Development

The theory of agency interests posits that when a manager who is also the owner of a firm assumes leadership, the corporation is more likely to align its actions with the company's objectives. According to [16], ownership is a significant means of exerting power, as it relates to the wealth of the CEO and shareholders. This, in turn, reinforces strong performance incentives, as suggested by [8]. Research conducted by [12], demonstrated that companies with a CEO who holds a significant number of shares are likely to have a greater market value. This finding suggested that the inclusion of the CEO in the share ownership structure can effectively mitigate agency conflicts. This assertion is further supported by empirical research conducted by [15], which found a positive correlation between the level of CEO power and the performance of the company. This is demonstrated by the company's success, particularly its sustainable growth performance, which can be further enhanced by concentrating decision-making power in the hands of the CEO. Based on the aforementioned description, the subsequent hypothesis is formulated.

H1: The level of power held by the CEO has a beneficial impact on the sustained growth performance of the organization.

Each company's CEO possesses a distinct educational background due to the absence of specific regulations regulating the educational prerequisites for assuming the role of CEO. CEOs with a graduate education in management, economics, or business are anticipated to enhance managerial functions and effectively make informed judgments to enhance company performance, particularly about sustainable growth.

Several empirical studies have investigated the impact of CEO background on positive performance. These studies have consistently found a strong and significant positive correlation between CEO's educational background and firm performance. [17], discovered through their

empirical investigation that there exists a favorable correlation between the educational background of a CEO and the performance of the company. Education is a crucial factor that the CEO must possess to effectively make and execute choices for the firm. According to [3], the educational background of a CEO plays a significant part in enhancing corporate success. This is because the CEO's degree of education can demonstrate their connections and abilities, which eventually influence the firm's performance. From this description, we have derived the following hypothesis.

H2: The CEO's educational background positively impacts the company's sustainable growth.

An employee who possesses exceptional skills and consistently demonstrates outstanding performance within a company may be promoted to the position of CEO, as stated by, [15]. CEOs who are promoted from inside the firm, as opposed to hiring CEOs from external sources, tend to enhance the company's performance more effectively. This is attributed to the belief that internal CEOs possess greater expertise and knowledge about the organization.

[18], demonstrated that an experienced CEO can be identified by the presence of loyal and long-serving employees who have consistently performed well for the company. Consequently, companies that appoint such employees as CEOs are more likely to experience improved performance compared to companies that do not. The CEO is an external hire, specifically chosen for their expertise in driving the company's long-term and environmentally responsible expansion. In addition, according to [19], employee elevation to the position of CEO signifies that the CEO possesses greater authority in comparison to other executives. The hypothesis derived from the aforementioned description is as follows.

H3: The CEO's professional background has a beneficial impact on the company's ability to maintain and improve its growth over time.

3 Research Methods

The study utilizes secondary data collected between the years 2018 and 2022. The population for this study consists of all Mining Sector firms that are officially listed on the Indonesia Stock Exchange (BEI) during the research period from 2018 to 2022. The sample for this study includes Mining Sector

BUMN companies that have maintained consistent listing on the BEI from 2018 to 2022.

The study will employ the panel data regression analysis technique, which combines cross-sectional and time series data. Panel data refers to a type of data where multiple observations are collected on various participants and examined over some time. To evaluate the validity of hypothesis (1), hypothesis (2), and hypothesis (3), the following Equation (1) model will be utilized.

$$PKP_{it} = \beta_0 + \beta_1 SHM_{it} + \beta_2 PDDKN_{it} + \beta_3 PKRJ_{it} + e_{it}$$

where:

PKP_{it} = ratio of company sustainability growth performance in company i and year t

B_0 = constant

SHM_{it} = ratio of CEO share ownership in company i and year t

$PDDKN_{it}$ = ratio of CEO education level at company i and year t

$PKRJ_{it}$ = ratio of CEO work experience at company i and year t

e_{it} = residual value

3.1 Panel Data Regression

Panel data regression involves the utilization of four distinct models. The models mentioned include the pooled ordinary least squares (OLS) model, the fixed effects least squares dummy variable (LSDV) model, the fixed effects within-group model, and the random effects model, [20]. The model selection process involves conducting a model specification test to determine the appropriate model to utilize. There are two types of specification tests: fixed effects and random effects.

The specification test tries to ascertain the appropriate panel data analysis model by employing the Chow Test, Hausmann Test, and Lagrange Multiplier (LM) Test, as outlined by [20]. Additionally, to validate the linear regression model

as an estimating tool, this study will conduct a traditional assumption test. In addition, the constructed model will undergo testing to determine its viability. This will involve doing both a simultaneous significance test (F test) and an individual parameter significance test (t test) to evaluate each hypothesis that has been formulated.

4 Results and Discussion

An overview or description of the data is provided by descriptive statistical analysis. The descriptions displayed will encompass the minimum, maximum, average (mean), and standard deviation for each variable. This study focuses on analyzing mining businesses that are publicly traded on the Indonesia Stock Exchange (BEI) between the years 2018 and 2022. According to the conducted sampling, a total of 40 companies were acquired, resulting in 200 observations. The variables employed in this study encompass the company's sustainable growth performance (GRI) as the dependent variable, while the independent variables consist of CEO characteristics, including CEO strength (SHM), CEO educational background (PPDKN), and work experience (PKRJ). The subsequent data displays the descriptive statistics for all research variables, as shown in Table 1.

Table 1 shows that the company's sustainable growth performance (GRI) averages 20.88% with a minimum value of 0% and a maximum value of 100%; CEO power as measured by share ownership (SHM) averages 4.7% with a minimum value of 0% and a maximum value of 61%; 96.5% of CEOs have a college education background (PPDKN); and 60% have work experience (PKRJ) from staff members of the company.

Table 1. Results of Descriptive Statistical Analysis

| | GRI | SHM | PPDKN | PKRJ |
|--------------|----------|----------|-----------|-----------|
| Mean | 0.208850 | 0.047300 | 0.965000 | 0.600000 |
| Median | 0.000000 | 0.000000 | 1.000000 | 1.000000 |
| Maximum | 0.980000 | 0.610000 | 1.000000 | 1.000000 |
| Minimum | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Std. Dev. | 0.295950 | 0.118655 | 0.184241 | 0.491127 |
| Skewness | 0.979801 | 2.935409 | -5.060405 | -0.408248 |
| Kurtosis | 2.525350 | 11.07710 | 26.60770 | 1.166667 |
| Jarque-Bera | 33.87776 | 830.8835 | 5497.952 | 33.56481 |
| Probability | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Sum | 41.77000 | 9.460000 | 193.0000 | 120.0000 |
| Sum Sq. Dev. | 17.42964 | 2.801742 | 6.755000 | 48.00000 |
| Observations | 200 | 200 | 200 | 200 |

Source: EViews 10 (data analyzed)

4.1 Panel Data Linear Regression Analysis

After conducting regression estimation using the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM), and selecting the regression equation estimation model through the Chow Test, Hausman Test, and Lagrange Multiplier Test, it is recommended to use the Fixed Effect Model (FEM) for panel data linear regression equations. The estimating model derived from the Fixed Effect Model (FEM) is expressed as follows.

$$\text{GRI} = -0.24757 - 0.61616 \cdot \text{SHM} + 0.29875 \cdot \text{PPDKN} + 0.32879 \cdot \text{PKRJ}$$

The results of the equation with the panel data linear regression above show that the company's sustainability growth performance as proxied by GRI has a constant value of -0.24757, meaning that if the other independent variables have a value equal to zero, then GRI has a value of -0.24757. The regression coefficient of CEO characteristics based on CEO strength proxied by share ownership

(SHM) is -0.61616, meaning that for every 1% increase, it has no effect on GRI assuming other factors are constant or *ceteris paribus*, while the regression coefficient of CEO characteristics is proxied by background education (PPDKN) of 0.29875, meaning that every 1% increase will affect GRI increasing by 29.875% assuming other factors remain constant or *ceteris paribus* and the CEO attribute regression coefficient proxied by work experience (PKRJ) is 0.32879, meaning that each increase is 0.32879. 1% then GRI will increase by 32,879% assuming other factors remain constant or *ceteris paribus*.

4.2 Hypothesis Testing

Hypothesis testing consists of a simultaneous significance test (F test), coefficient of determination (R^2), and individual parameter significance test (t-test) with panel data regression estimation using the Fixed Effect Model (FEM) as in Table 2.

Table 2. Regression Analysis Results

Dependent Variable: GRI

Method: Panel Least Squares

Date: 08/21/23 Time: 17:16

Sample: 2018 2022

Periods included: 5

Cross-sections included: 40

Total panel (balanced) observations: 200

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|--------|
| C | -0.247572 | 0.132213 | -1.872520 | 0.0630 |
| SHM | -0.616156 | 0.434741 | -1.417294 | 0.1584 |
| PPDKN | 0.298750 | 0.128433 | 2.326122 | 0.0213 |
| PKRJ | 0.328787 | 0.083840 | 3.921586 | 0.0001 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|-----------------------|-----------|--------------------|----------|
| Root MSE | 0.143936 | R-squared | 0.762271 |
| Mean dependent var | 0.208850 | Adjusted R-squared | 0.698675 |
| S.D. dependent var | 0.295950 | S.E. of regression | 0.162456 |
| Akaike info criterion | -0.608892 | Sum squared resid | 4.143530 |
| Schwarz criterion | 0.100246 | Log likelihood | 103.8892 |
| Hannan-Quinn criter. | -0.321915 | F-statistic | 11.98609 |
| Durbin-Watson stat | 1.571527 | Prob(F-statistic) | 0.000000 |

Based on Table 2, the results of the Regression Analysis, it is known that the F-Statistics value is 11,986 with a Prob value. (F-Statistic) of $0.000 < 0.05$, the conclusion is drawn that the independent variable has a significant effect simultaneously on the dependent variable. Then, the Adjusted R Square value is 0.6987, so it can be concluded that the influence of the independent variable on the dependent variable simultaneously is 69.87% while the remaining 30.13% is influenced by other variables outside the research.

4.3 Discussion

The CEO strength variable (SHM) has a calculated t value of -1.417294, which is associated with a significant value of 0.1584. The observed p-value (0.1584) above the predetermined significance level (0.05), suggests that the CEO power variable (SHM) does not have a statistically significant impact on the company's sustainable growth performance (GRI). These data lead to the conclusion that H1 in this study is rejected.

This study demonstrated that CEO power derived from share ownership has been empirically found to have no impact on the sustainable growth performance of the company. This can be attributed to the presence of preventive measures in the form of sound corporate governance, which necessitates adherence to key principles such as transparency, accountability, responsibility, independence, and fairness. All firms listed on the Indonesia Stock Exchange are required to adhere to this governance, which includes reporting on sustainability performance, namely corporate social responsibility.

The concept of corporate governance arose from agency theory, which explores the presence of an agency relationship between the principal (owner/investor) and the agent (manager/management). To ensure the smooth functioning of this contractual relationship, the owner delegates decision-making authority to the manager. The concept of agency interests equality posits that when a manager, who also happens to be the owner of the company, assumes leadership, the organization is more likely to operate in alignment with its objectives. According to [16], ownership is a significant means of power that relates to the wealth of the CEO and shareholders. This, in turn, enhances strong performance incentives, as noted by [8].

In the words, as a small proportion in ownership for CEOs by only 4.7%, they cannot significantly influence the sustainability of company performances. As a result, this ownership position is

insufficient to push the CEO to align his activities with the goals of investors.

Contradictorily, [21], found that CEOs with a high percentage of ownership in a company relatively have a greater market value for their shares. Hence, agency conflict could be overcome by their involvement in the ownership structure. This assumption is substantiated by [15], which argues that there is a positive correlation between the level of CEO power and the firm performance, particularly its sustainable growth performance, which can be improved further when decision-making authority is concentrated in CEOs.

H1: CEO power has no positive effect on the company's sustainable growth performance.

The next variable is the level of CEO education (PPDKN) which statistically has a t-value of 2.326122 with a p-value of 0.0213. It indicates the results of this variable have a significant value which means PPDKN influence significantly on company's sustainable growth performance. Therefore, H2 cannot be rejected in this study.

In other words, the study reveals PPDKN influenced firm performance for its respective sustainable growth. It is based on the agency theory, which focuses on creating effective contract plans to align the interests of managers and owners, particularly in addressing conflicts of interest as agents for shareholders. The CEO is morally obligated to maximize the owners' profits and will be rewarded accordingly based on their contract. With higher education, the CEO gains a broader perspective, deeper understanding, more experience, and increased motivation, enabling them to effectively lead the company. This leads to improved managerial functions and the ability to make informed decisions that enhance company performance, particularly in terms of sustainable growth, which is influenced by evolving global conditions.

The present study's outcomes are consistent with the study of [5], which demonstrated a positive relationship between PPDKN and firm performance.

[3], asserts that a CEO's educational background has a major impact on improving organizational success. This is because a CEO's educational background can attest to their relationships and skills, which ultimately affect the company's performance.

H2: The CEO's educational background has a positive effect on the company's sustainable growth.

The calculation results of the CEO work experience variable (PKRJ) yielded a t-value of 3.921586, which was found to be statistically significant with a p-value of 0.0001. The p-value (0.0001) is lower than the predetermined significance level (0.05), indicating that the CEO's work experience variable (PKRJ) has a significant influence on the company's sustainable growth performance. These data support the hypothesis H3 in this investigation.

This research demonstrates that the CEO's work experience has a significant impact on the sustainable growth performance of the company. It is based on agency theory, which involves developing appropriate contractual plans to align the interests of managers and owners and mitigate conflicts of interest. As agents for shareholders, CEOs have a moral responsibility to maximize profits for owners and are compensated accordingly. Therefore, CEOs who are promoted from within the company tend to enhance the company's performance more effectively compared to CEOs recruited externally. This is because internal CEOs possess greater experience and knowledge about the company. Job promotion serves as a means of rewarding employee commitment and faithfulness by selecting the most qualified individuals by natural means. This process fosters a sense of ownership and accountability, which contributes to the ongoing growth of the organization.

The findings of this study are consistent with the research conducted by [22]. It demonstrated that a reliable and long-serving employee who has consistently done well is a key characteristic of an experienced CEO in China. Consequently, if such an individual is appointed as the CEO of a firm, there is a higher likelihood of improving the company's performance compared to organizations that lack this attribute. The CEO is an external hire, specifically chosen for their expertise in driving the company's sustainable growth. In addition, according to, [19], promoting an employee to the position of CEO signifies that the CEO possesses greater authority in comparison to other executives.

H3: CEO work experience has a positive effect on the company's sustainability growth performance.

5 Conclusion

This study aimed to analyze the characteristics of CEOs in mining companies listed on the Indonesia Stock Exchange from 2018 to 2022. It concentrated on the strengths, education level, and professional experience of the CEO and how these affected the

company's ability to grow sustainably. The study's conclusions show that the performance of the company's sustainable growth has not been proven to be impacted by the CEO's skill. However, the results demonstrate that the CEO's educational background and work experience have a positive influence on the company's sustainable growth performance.

The research is constrained by several restrictions. Firstly, it solely examines case studies of mining companies listed on the Indonesia Stock Exchange. Secondly, the research is restricted to a five-year observation period, specifically from 2018 to 2022. Lastly, the analysis is limited by the characteristics of the CEOs under investigation. Enhance the scope of firm observations by including other CEO attributes, and diverse industry sectors, and extending the duration of observation.

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