The role of audit committee expertise and sustainability performance in the Indonesian mining industry

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Abstract. The worldwide concern about climate change has compelled the corporation to revamp its strategy to align with sustainability. The corporate governance structure significantly impacts sustainability performance. The previous study examines the impact of audit committee characteristics on sustainability performance, and the study's findings remain inconclusive. This study analyses the impact of specific attributes of the audit committee to forecast its effect on sustainability performance. Audit committee expertise is crucial in exerting influence on sustainability performance. However, the study's findings indicate that competence within the audit committee has yet to impact the sustainability performance of the Indonesian mining industry.

1 Introduction

Business activities have been entrusted with challenges such as climate change, pollution, greenhouse gas emissions, and other detrimental environmental impact. It is anticipated that corporations will disclose their sustainability performance to relevant parties. Previous studies have established that board governance mechanisms determine the quality of sustainability activities disclosed in a company's sustainability report [1]. Stakeholders and academic scholars commonly exhibit mistrust, lack of confidence, and skepticism towards companies [2], which challenges the underlying assumptions of agency and stakeholder theories [3,4] proposed by Freeman (1984) and Jensen and Meckling (1976). In such situations, companies allegedly utilize Sustainability Reporting (SR) to shape their corporate image by presenting exaggerated sustainability claims that may not align with reality. This practice serves to justify their business activities. Therefore, companies must own a scenario that more authentically adheres to Sustainability Reporting (SR) regulations and standards.

Within the sustainability framework, it is challenging to generalize about the relationship between corporate governance and financial reporting when it comes to sustainability reporting. This situation is primarily due to the unique characteristics of sustainability reporting, such as its extensive scope of subjects, the diverse nature of its contents, and the
Sustainability Corporate Governance (SCG) is essential in influencing management behavior. As a system to control and direct companies sustainably, SCG must be supported by experienced personnel with sufficient vision and competence regarding sustainability practices. The audit committee is one of the parts which holds a significant role within the corporate governance framework. The audit committee is recognized as a representation of the sustainability corporate governance (SCG) structure due to the results found in the initial investigation conducted by researchers, which indicate that only a handful of firms in Indonesia had a dedicated body responsible for the implementation of sustainability initiatives, such as a sustainability committee. The responsibility for incorporating sustainability practices in most corporations in Indonesia is assigned to the audit committee.

Based on that situation, according to previous research, committee audit expertise as one characteristic must be examined to ensure its role in contributing to the implementation of sustainability [7]. However, the contribution of the audit committee expertise to the sustainability performance is still unclear. Therefore, this research aims to examine the contribution of the audit committee expertise to the sustainability performance and focus on mining industries because mining companies face significant sustainable development challenges as extractive industries, particularly concerning environmental and social issues. Hence, mining businesses must be sincerely dedicated to fulfilling their sustainability obligations [8].

2 Literature review and hypothesis development

2.1 Corporate Governance Structure and Sustainability Performance

Corporate sustainability has been crucial since Sustainable Development Goals (SDGs) became a global commitment to a better future [9,10]. The advantages of corporate sustainability programs encompass the capacity to establish a competitive edge, bolster the company's standing within society, and cultivate positive perceptions among consumers and society at large. Finally, corporate sustainability will create value for the organization by integrating sustainability into operational processes, significant cost reduction and improvement [11].

Implementing sustainability practices and activities within the company can be attributed to establishing a sustainable culture, which is deeply ingrained in the organizational approach and driven by top-level leadership. One illustrative instance of the growing significance of sustainability inside the organization may be observed by establishing its three guiding principles. In this context, the critical elements of utmost importance are people, the planet, and economic prosperity [12].

Corporate governance mechanisms are essential to implementing sustainability strategies and achieving sustainability performance. Previous research has indicated that the corporate governance structure plays a crucial role in establishing the necessary corporate mechanisms for effectively implementing sustainability initiatives [13,14]. This study contributes to the current body of literature by examining the influence of specific corporate governance structures on several aspects of sustainability performance, as outlined by the GRI framework, particularly within the context of the mining industry in Indonesia.

To enhance comprehension of the influence of corporate governance (CG) features on corporate sustainability, this study investigates the impact of audit committee characteristics on sustainability performance. The picking of this issue was motivated by the observation that none of the existing empirical studies have comprehensively examined the three dimensions of sustainability performance, particularly in the context of the mining sectors in Indonesia.
Prior research examines the interconnection between board characteristics and sustainability performance [15,16] and uses board size, board independence, CEO duality, women on the board, and board meetings per year. A further investigation examines the features of audit committees (AC) and their impact on transparency in sustainability reports. This study considers factors such as the size of the AC, the independence of AC members, and the frequency of AC meetings [16–19]. The study's findings indicate that the size of the audit committee, the independence of its members, and the frequency of its meetings significantly influence the level of sustainability report disclosure. Due to the scarcity of comparable studies within the mining sector, particularly in Indonesia, the researchers deem it imperative to undertake this research inside the Indonesian setting.

2.2 Hypothesis development

It is imperative to establish the veracity of the assertions about the interconnectedness among various dimensions of sustainability and their respective significance regarding the associations between the characteristics of an audit committee and sustainability dimensions. The previous research examines the audit committee as a component of the company's organizational structure, indicating its significant involvement in supporting the sustainability initiative[17–19]. This study also investigates the audit committee's role within Indonesian corporations as the entity responsible for sustainability performance.

Empirical findings suggest that a larger AC may be more effective due to its potential to foster a broader range of knowledge and experiences. This fact, in turn, can enhance the efficacy of the regulating mechanism that influences corporate social responsibility (CSR) disclosure [20], but contrary to Jizi et al. [21] an AC size does not affect CSR disclosure. This inconclusive finding [20] supports this study to propose the hypothesis as follows:

**Hypothesis 1** Audit committee size impacts the sustainability performance of a firm.

- **H1a** Audit committee size impacts economic sustainability performance.
- **H1b** Audit committee size impacts environmental sustainability performance.
- **H1c** Audit committee size impacts social sustainability performance.
- **H1d** Audit committee size impacts governance sustainability performance.

A study in bank industries in Australia found that gender diversity positively influences the level of CSR disclosure [20]. Because of the different sector characteristics, we propose the hypothesis in Indonesian mining industries as the following:

**Hypothesis 2** Audit committee gender impacts the sustainability performance of a firm.

- **H1a** Audit committee gender diversity impacts economic sustainability performance.
- **H1b** Audit committee gender diversity impacts environmental sustainability performance.
- **H1c** Audit committee gender diversity impacts social sustainability performance.
- **H1d** Audit committee gender diversity impacts governance sustainability performance.

Frequency meetings also found in previous research as one variable that impacts CSR performance [20]. However, another research found no connection between the AC meetings frequency and voluntary ethics disclosure level [22]. The inconclusive findings trigger an examination and propose the hypothesis as the following:

**Hypothesis 3** The number of committee audit meetings impacts the sustainable performance of firms.

- **H3a** The number of audit committee meetings impacts the economic SP of a firm.
- **H3b** The number of audit committee meetings impacts the environmental SP of a firm.
- **H3c** The number of audit committee meetings impacts the social SP of a firm.
- **H3d** The number of audit committee meetings impacts the governance SP of a firm.

Combining audit committees with financial skills can enhance the resolution of issues that may challenge management and external auditors regarding financial transparency [23]. However, prior research found a negative association between AC financial expertise and sustainability reporting [18], and in this study, we propose the hypothesis as follows:
Hypothesis 4 Audit committee expertise impacts the sustainable performance of firms.

- H4a Audit committee expertise impacts economic sustainability performance.
- H4b Audit committee expertise impacts environmental sustainability performance.
- H4c Audit committee expertise impacts social sustainability performance.
- H4d Audit committee expertise impacts governance sustainability performance.

Following prior research, the variable use of company size and age as control variables are positively associated with corporate sustainability reporting [18]; in this study, we use firm size, firm age, and sustainability report age as control variables to re-examine those variables.

2.3 Data and analysis

The study sample comprised 22 Indonesian mining companies listed on the Indonesian Stock Exchange/IDX. The final sample consists of 36 reports issued by selected firms over two years, specifically from 2020 to 2021. It should be noted that the number of sustainability reports has been unbalanced data across the years. Following the approach employed by Plumlee et al. (2015), we utilize a two-stage manual content analysis methodology to quantify the data [24]. According to the GRI information structure, we used the ESGI Airlangga University dataset to measure sustainability performance. All the observed variables are summarized in Table 1.

Table 1. Measurement of dependent, independent, and control variables.

<table>
<thead>
<tr>
<th>Name of Variable</th>
<th>Mnemonics</th>
<th>Role</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Sustainability Performance</td>
<td>EcSP</td>
<td>Dependent</td>
<td>ESGI Economic Disclosure Index</td>
</tr>
<tr>
<td>Environmental Sustainability Performance</td>
<td>EnSP</td>
<td>Dependent</td>
<td>ESGI Environmental Disclosure Index</td>
</tr>
<tr>
<td>Social Sustainability Performance</td>
<td>SSP</td>
<td>Dependent</td>
<td>ESGI Social Disclosure Index</td>
</tr>
<tr>
<td>Governance Sustainability Performance</td>
<td>GSP</td>
<td>Dependent</td>
<td>ESGI Governance Disclosure Index</td>
</tr>
<tr>
<td>Audit committee size</td>
<td>ACSIZE</td>
<td>Independent</td>
<td>Total number of the audit committee</td>
</tr>
<tr>
<td>Audit committee gender diversity</td>
<td>ACGEN</td>
<td>Independent</td>
<td>A binary variable takes value one if there exists a gender diversity and 0 otherwise.</td>
</tr>
<tr>
<td>Audit committee meeting</td>
<td>ACMEET</td>
<td>Independent</td>
<td>Number of audit committee meetings per year</td>
</tr>
<tr>
<td>Audit committee expertise</td>
<td>ACEXPERT</td>
<td>Independent</td>
<td>Percentage of audit committees which have economics/financial background</td>
</tr>
<tr>
<td>Firm Size</td>
<td>SIZE</td>
<td>Control</td>
<td>Log of total assets of the firm</td>
</tr>
<tr>
<td>Firm Age</td>
<td>AGE</td>
<td>Control</td>
<td>Age of the firm since its founding</td>
</tr>
<tr>
<td>SR Age</td>
<td>SR_AGE</td>
<td>Control</td>
<td>Age of the SR since the 1st SR launched</td>
</tr>
</tbody>
</table>
3 Results and Discussion

The classical assumption test and assessment of data normality were conducted to ascertain the suitability of the study data for subsequent analysis using multiple regression. The multiple regression test results are presented in Table 2.

**Table 2. Regression results of AC characteristics and sustainability performance (t-test).**

<table>
<thead>
<tr>
<th>Variables</th>
<th>EcSP</th>
<th>EnSP</th>
<th>SSP</th>
<th>GSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>0.022</td>
<td>0.007</td>
<td>0.001</td>
<td>0.003</td>
</tr>
<tr>
<td>ACSIZE</td>
<td>0.690</td>
<td><strong>0.010</strong></td>
<td>0.896</td>
<td>0.745</td>
</tr>
<tr>
<td>ACGEN</td>
<td>0.873</td>
<td>0.160</td>
<td>0.630</td>
<td>0.712</td>
</tr>
<tr>
<td>ACMEET</td>
<td>0.949</td>
<td>0.095</td>
<td>0.819</td>
<td>0.394</td>
</tr>
<tr>
<td>ACEXPERT</td>
<td>0.500</td>
<td>0.058</td>
<td>0.537</td>
<td>0.974</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.498</td>
<td>0.285</td>
<td>0.223</td>
<td>0.854</td>
</tr>
<tr>
<td>AGE</td>
<td>0.528</td>
<td>0.248</td>
<td>0.586</td>
<td>0.629</td>
</tr>
<tr>
<td>SR_AGE</td>
<td><strong>0.004</strong></td>
<td><strong>0.014</strong></td>
<td>0.526</td>
<td>0.334</td>
</tr>
</tbody>
</table>

Empirical results in Table 2 show that no variable is significantly related to economic SP, social SP, and governance SP. Only audit committee size was found to be significant with environment SP. Firm size and firm age were also insignificant as control variables—only sustainability reporting age significantly influenced the economic and environment SP. These results align with the early initiative on sustainability, which prioritizes economic and environmental issues as addressing stakeholder pressure over other bottom lines on sustainability reports [20,25]. This empirical observation indicates that the mining industry needs to prioritize sustainability activities adequately. The detrimental socio-environmental repercussions of the mining sector have led to the formation of anti-mining campaigns, films, and civil society protests, which is a predictable outcome [26].

4 Conclusion

Mining operators have the potential to employ various strategies to promote positive social outcomes for individuals and communities [26]. These strategies encompass grants and donations, directly supporting healthcare, education services, and other social needs. Creating employment opportunities through mining operations can contribute to poverty reduction and offer improved job prospects directly and through engagement with suppliers and contractors.

Furthermore, capacity development initiatives can be undertaken to bolster local businesses and support community-driven projects for local development. These efforts can also focus on strengthening the economic and managerial capacities of the region, facilitating economic diversification. Lastly, establishing partnership relations can ensure stakeholders’ involvement and equity participation in local mining projects. Suggestions for future research could be the use of other CG elements. The role of sustainability committees could be an interesting research question for sharpening empirical evidence in Indonesian companies on sustainability implementation.
References
5. T. Gerwing, P. Kajüter, and M. Wirth, The Role of Sustainable Corporate Governance in Mandatory Sustainability Reporting Quality (Springer Berlin Heidelberg, 2022)