Green Accounting, Corporate Governance and Firm Value in Southeast Asia Region

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Abstract
Objective – This study is to investigate the relationship between green accounting, managerial ownership, institutional ownership, independent commissioners and audit committees on firm value of mining companies in Southeast Asia region including Indonesia, Malaysia, Thailand, the Philippines and Vietnam.

Design/Methodology – The method used is OLS with 500 samples of mining company observation data in the Southeast Asia for the 2016-2020 periods. GMM estimation is to address the potential endogeneity of the multiple variables used in the estimation, unobserved heterogeneity, and autocorrelation, which cannot be resolved with a fixed effect.

Results – This study found that institutional ownership has positive significant effect on the firm value. Independent commissioners and audit committees have negative significant relationship with firm value of mining companies in the Southeast Asia, while green accounting and managerial ownership have no effect on the firm value.

Research Limitations/Implications – There is no availability of data to access company’s annual reports from several countries and the annual reports of several countries are not made in English, educational background and social relations are not considered in measuring the independent board of commissioners and the audit committee. The results of this study can be used by company management in providing information about the percentage required for institutional ownership as a consideration in making decisions to increase company value.

Novelty/Originality – The researcher’s knowledge, this is the first research to investigate green accounting on firm value in mining company in the Southeast Asia region which is included in emerging markets.

Keywords: Green Accounting, Corporate Governance, Firm Value, Southeast Asia Region, Mining Company

1. Introduction
The negative effects of environmental degradation caused by industrialized nations will inevitably affect a nation’s economy. Given the substantial environmental pollution it generates, the mining sector must become environmentally conscious and pledge to safeguard the environment. In order to accomplish this, the organization must implement environmental management protocols in adherence to relevant regulations, thereby enabling the provision of remedies for environmental challenges. Companies have voluntarily disclosed these environmental management activities in reports and accounts about environmental costs, called green accounting (Endiana et al., 2020). Environmental cost reduction becomes a managerial priority because green accounting can provide information about the extent to which a company might contribute to the environment and the quality of human life and influence decisions that will influence the company’s future (Kusumaningtias, 2013). Implementing green accounting
practices is anticipated to cultivate public confidence in the organization, eliciting a favorable response from the public to inspire investor loyalty.

On the other hand, international accords were established to safeguard the environment, exemplified by the Kyoto Protocol, an accord established in 1997 during the United Nations Framework Convention on Climate Change. This international agreement, which has been in effect since 2005 and is comprised of the commitments of 166 countries, including Southeast Asia, is a pledge by each nation to reduce greenhouse gas emissions. As a result, regulators must implement effective policies to govern environmental management activities, particularly in sectors like mining that significantly contribute to environmental contamination.

The Southeast Asian region is anticipated to have been adversely affected by climate change in recent years. According to the findings presented in The Economics of Climate Change in Southeast Asia: A Regional Review, published by the Asian Development Bank in 2009, four Southeast Asian nations—Indonesia, the Philippines, Thailand, and Vietnam—experience the negative consequences of climate change (Ali Ahzar, 2018). Over 50 per cent of the world’s population resides on this continent, which has to assume some responsibility for the effects of climate change. Present an environmental performance index for Southeast Asian nations, assigning varying scores to pollution indices (Sibuea et al., 2021).

<table>
<thead>
<tr>
<th>Country</th>
<th>Rating</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>78</td>
<td>45.4</td>
</tr>
<tr>
<td>Filipina</td>
<td>111</td>
<td>38.4</td>
</tr>
<tr>
<td>Indonesia</td>
<td>116</td>
<td>37.8</td>
</tr>
<tr>
<td>Vietnam</td>
<td>139</td>
<td>33.4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>68</td>
<td>47.9</td>
</tr>
<tr>
<td>Laos</td>
<td>130</td>
<td>34.8</td>
</tr>
<tr>
<td>Kamboja</td>
<td>139</td>
<td>33.6</td>
</tr>
<tr>
<td>Myanmar</td>
<td>179</td>
<td>25.1</td>
</tr>
</tbody>
</table>

Table 1. presents the evidence that Southeast Asian nations significantly contribute to environmental change. Downar et al. (2021) argues that there is a proliferation of appeals from diverse stakeholders emphasizing the significance of green accounting to enhance corporations’ environmental performance. Furthermore, implementing green accounting practices is imperative for preserving and promoting environmental consciousness (Sukmadilaga et al., 2023). Green accounting facilitates the enhancement of stakeholder trust and confidence, thereby contributing to the overall valuation of the organization. Green accounting is crucial for determining how businesses safeguard the environment (Wagner & Suteki, 2019). It allows organizations to discern and quantify expenditures and investments linked to environmental preservation and understand the advantages and drawbacks of prospective investments and the corresponding expenses. This enables organizations to enhance their operational endeavors, facilitates corporate decision-making (Yook et al., 2017), and renders organizations more competitive while augmenting firm value (Chiou et al., 2011).

Green accounting determines the ecological systems and resources of the planet concerning human activities. In addition to considering financial implications, its application incorporates expenses associated with environmental conservation. The implementation of green accounting practices has the potential to impact profits by reducing overall production costs, including insurance and capital expenditures. The company’s value is influenced by its capacity to distribute dividends, which is directly proportional to the level of profit generated (Lusiana et al., 2022). According to research by Lestari et al. (2021), Erlangga et al. (2021), and Dewi et al. (2020), green accounting
has a substantial positive impact on firm value. This indicates that an increase in the implementation of green accounting is likely accompanied by a corresponding rise in firm value. As a result, additional research is required on green accounting, particularly as it relates to mining companies, given that green accounting is an industry participant-implemented component of the solution to climate change.

In addition, governance on considerable value must be established in the Southeast Asian region, in addition to the significance of green accounting research on firm value. Farooque, Omar Al, Tony van Zijl (2010) argue that governance and institutional structures in developing nations are typically quite distinct. Conducting research on the relationship between ownership structure and firm value is crucial, as the findings will offer fresh insights into the evolution of governance arrangements specific to Southeast Asia or into the applicability of internationally validated models, albeit in distinct socio-economic contexts, to developing economies, where their efficacy is anticipated to be comparable and that there is a need for greater representation of developing countries in the corporate governance research literature, specifically with regard to managerial and institutional ownership.

Managerial ownership relates to the ownership of shares by the management of a corporation, which comprises the board of commissioners and directors. Management will feel more accountable for the organization’s performance as an internal entity, which will increase the value of the company. According to Ifada et al. (2021), the presence of managerial ownership motivates managers to disclose more information regarding social responsibility. This becomes a strategic approach to managing a company for the benefit of shareholders, while also influencing societal norms that affect the reputation and value of the organization. This aligns with the findings of Gao et al. (2020), who discovered that managerial ownership has the potential to enhance the value of a company. This finding contradicts the conclusions drawn by Trafalgar et al. (2019) and Ilmi et al. (2017), who concluded that managerial ownership has no impact on firm value.

The monitoring function will ensure that shareholders' welfare is protected. A sufficient number of substantial investors in the capital market will prevent opportunistic management conduct through institutional ownership's regulatory function (Widianingsih, 2018). Increased institutional ownership will result in increased company monitoring, which will consequently lead to the disclosure of all company activities. Following this, the organization will cultivate a favorable perception among stakeholders, augment its market worth, and facilitate long-term business growth. Investing considerations encompass institutional ownership as well, as it contributes to the increased value of the company (Trafalgar & Africa, 2019). As institutional ownership increases in value, control over the company becomes more stringent, ensuring that management adheres to the objectives of the organization and ultimately augments the value of the company. This is consistent with the findings of Ratnawati et al. (2018) and Doğan (2020), who postulated that the presence of institutional ownership positively impacts firm value and that the value of the firm will increase proportionally to the number of shares held by institutional owners. In contrast, the research of Astuti et al. (2018) and Setyabudi (2021) concluded that institutional ownership has no obvious effect on firm value.

In order to establish an effective internal control and monitoring system, an organization must appoint independent commissioners who have no tendency to conspire with management in an attempt toappropriate the company's wealth (Eugene F. Fama and Michael C. Jensen, 1983). According to agency theory Fama and Jensen (1983), the implementation of board independence successfully mitigates managerial opportunism. Independent Commissioners serve as an intermediary in overseeing the decisions made by company managers due to their greater independence and objectivity regarding the competing interests of majority and minority shareholders. A higher proportion of independent commissioners is expected to carry out supervisory duties, advise directors effectively, and add value to the company (Nugroho & Agutia, 2017).
line with this, research by Subanidja et al. (2016) and Putri et al. (2020) also states that independent commissioners affect firm value. This is in contrast to the research of Gosal et al. (2018), which shows that independent commissioners do not affect firm value.

Shareholders appoint a board of directors to monitor decision-making within the company because the board of directors provides solutions to organizational problems by monitoring and advising executives on essential decisions regarding the company (Baldenius et al., 2014). The purpose of board monitoring or advice is to protect shareholder interests through the provision of an impartial and autonomous evaluation of the decisions made by company executives in an effort to minimize conflicts of interest (Fama and Jensen, 1983). An audit committee should be established by the board of directors in an effort to increase efficiency. The audit committee’s role is of the utmost importance due to the fact that its input enables the organization to conduct business operations more effectively when making decisions (Agyemang-Mintah & Schadewitz, 2018). The audit committee supports and enhances the board of commissioners’ ability to carry out its supervisory responsibilities within the organization. The reliability of the financial statements regarding the transparency of the company’s management obligations can be ensured if the audit committee executes its duties accurately. This can eventually raise the value of the company by attracting the interest of the capital market (Mukhtaruddin et al., 2014). Putri et al. (2020) also supports the idea that the audit committee affects firm value. This is in contrast to the research of Gosal et al. (2018), which states that the audit committee does not affect firm value.

Economic conditions in Southeast Asian countries have experienced significant growth over several decades, and investors tend to seek higher returns from regional stock markets (Asni & Agustia, 2021). From the background and research gap above, the researcher concludes that green accounting, managerial ownership, institutional ownership, independent commissioners and audit committees provide inconsistent results on firm value. Southeast Asian mining companies are selected as samples for this research due to the fact that mining and energy sectors have the potential to stimulate a nation’s economic growth. The availability of energy processed by the mining sector creates the growth rate of a country’s economic driver (Israel et al., 2018). The capital market is an analytical instrument about the performance and financial condition of the company, so the capital market is an instrument to obtain sources of funds or alternative financing from investors. Environmental issues are no longer new, which is interesting to study globally. In developing nations, where environmental consequences are becoming more apparent and where technology-driven industry participants sometimes ignore environmental impacts, it is imperative that scholars examine the relationship between corporate governance, green accounting, and firm value in Southeast Asia. This investigation will determine whether mining companies in the region have adequate knowledge to implement green accounting practices and the degree to which the governance system influences firm value growth.

Therefore, this study provides new findings that will fill the gap in the literature on green accounting and governance structure on firm value in mining companies in the Southeast Asian region. This study further validates negative findings and corroborates positive results reported in prior research. Thus, academics and policymakers in the Southeast Asian region benefit from the study's contribution to the understanding of how green accounting practices and corporate governance structures impact the value of the firm. The next section of this study is organized as follows: Literature Review, Theoretical Frameworks and Hypothesis Development, Research Method, Results, Discussion, and Conclusion.
2. Literature Review, Theoretical Framework, and Hypothesis Development

2.1 Effect of Green Accounting on Firm Value

As defined by Yanto (2018), stakeholders comprise both internal and external entities that have a positive rapport and have the ability to directly or indirectly influence an organization. The constraints above imply that companies must pay attention to stakeholders because they are parties that influence and are influenced either directly or indirectly by the company's activities and policies. Green accounting is one of the company's strategies for disclosing the environmental costs incurred by the company in meeting the demands of stakeholders. Consider that the organization must consider its stakeholders. In that case, the company will lose legitimacy (Adams, 2002), so the existence of green accounting information will have a positive impact on the company, which will ultimately increase the company's value. According to Ifada et al. (2021), legitimacy theory is concerned with social covenants. Legitimacy facilitates the examination of the relationship between businesses and their surroundings. Miotto et al. (2020) state that organizations or companies keep attempting to equalize the perception that the actions taken by an entity are actions that are desirable, appropriate, or follow the system of norms, values, and beliefs that apply in society with social values in the company's environment and business activity system. Legitimacy is achieved when the operations of the organization align with the societal and environmental value systems (Donovan, 1999). The company has voluntarily disclosed its activities in accordance with societal expectations through the use of green accounting and environmental disclosure. The company can sustain operations and expand by effectively managing the concerns and priorities of its stakeholders. By effectively managing the concerns and priorities of its stakeholders, an organization can secure sustainability support that enables it to augment its market share, sales, and profits (Li et al., 2018).

There is a notion that a company's value and investor interest may increase proportionally to the quality of its green accounting implementation, as this demonstrates the company's environmental consciousness. This finding is consistent with the research conducted by Dewi et al. (2020), Lestari et al. (2021), and Erlangga et al. (2021). The results of this study prove that the application of green accounting has a significant positive effect on firm value. There is a positive correlation between the level of green accounting implementation and the value of the firm. However, there are different results in the research of Kartika et al. (2019), where green accounting disclosures have been shown to weaken financial performance on firm value. In line with the above predictions, we postulate the following hypotheses as follows:

\[ H_1. \text{Green accounting has a positive effect on firm value} \]

2.2 Effect of Managerial Ownership on Firm Value

Managerial ownership, as defined by the proportion of company shares owned in relation to the total number of outstanding shares, signifies that management (including directors and managers) assumes the role of a company shareholder (Ilmi et al., 2017). The results of research conducted by L. S. Dewi et al. (2019), Ifada et al. (2021), Nasution et al (2020), Widianingsih (2018), and Yusra et al. (2019) found that managerial ownership has a positive effect on firm value. However, contrary to research by Ilmi et al. (2017), managerial ownership does not affect firm value. Similarly, the research of Bagus et al. (2020) indicates that managerial ownership has a substantial adverse impact on the value of a company. Hence, the following hypotheses are designed:

\[ H_2. \text{Managerial ownership has a positive effect on firm value} \]

2.3 Effect of Institutional Ownership on Firm Value

Institutional ownership can reduce agency conflicts because, in company activities, institutions will supervise management, thereby minimizing earnings management. The maintenance of institutional ownership is anticipated to have a
positive impact on company performance, thereby fostering a stronger relationship between capital providers and managers (Chabchib et al., 2019). Consistent with the findings of Lukman et al. (2020) and Pangemanan et al. (2018), the value of a company is substantially impacted by institutional ownership. Based on the description above, the following hypothesis can be formulated:

\[ H_3. \text{ Institutional ownership has a positive effect on firm value} \]

2.4 Effect of Independent Commissioners on Firm Value

An Independent Commissioner is the number of commissioners in a company who come from independent parties. Increasing the proportion of independent commissioners serving on the board of commissioners will result in more efficient oversight and coordination operations within the organization. Corporate governance revolves around the autonomous board of commissioners, which is responsible for upholding the principle of accountability, supervising managers in their company management, and guaranteeing corporate strategy (Widiatmoko, 2020). This is consistent with the findings of Putri et al. (2019), who discovered that the presence of independent commissioners increases the value of a company. An increased percentage of independent commissioners is associated with a more valuable organization (Suhadak et al., 2019). Similar conclusions are reached by Khaira Afiani et al. (2019) and Indriastuti et al. (2020) regarding the substantial positive impact of independent commissioners on firm value. Consistent with existing literature, we hypothesize that:

\[ H_4. \text{ Independent commissioners have a positive effect on firm value} \]

2.5 Effect of Audit Committee on Firm Value

The audit committee’s principal responsibility is to provide support to the board of commissioners in the execution of its supervisory role regarding the operations of the company. The audit committee’s existence is an endeavor to enhance the management of the organization, specifically in terms of oversight. Purwaningtyas (2011) states that the audit committee acts as an intermediary between the board of commissioners, management, and other external parties. According to studies conducted by Sukmono et al. (2016) and Indriastuti et al. (2020), the audit committee has a significant and positive impact on the value of the organization. A similar conclusion was reached by Djashan et al. (2020), namely that the audit committee exerts a substantial influence on the value of the firm. Based on this explanation, the hypothesis can be formulated:

\[ H_5. \text{ Audit committee has a positive effect on firm value} \]

3. Research Method

This study uses secondary data by collecting annual reports of mining companies from the stock exchanges of each country in the Southeast Asian region such as the Indonesia Stock Exchange (IDX), Malaysia Stock Exchange, Stock Exchange of Thailand/SET, Philippine Stock Exchange and Hanoi Stock Exchange. The sampling method is purposive sampling method. Based on the data obtained by 117 companies, a total of 100 issuers predetermined criteria with a total of 500 observations. The annual reports are collected through several sources such as downloading from website. The following details are the results of the research sample:

<table>
<thead>
<tr>
<th>Sample Criteria</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining sector companies in BEI</td>
<td>43</td>
</tr>
<tr>
<td>Mining sector companies in BEM</td>
<td>21</td>
</tr>
<tr>
<td>Mining sector companies in Stock Exchange of Thailand</td>
<td>14</td>
</tr>
<tr>
<td>Mining sector companies in Philippine Stock Exchange</td>
<td>23</td>
</tr>
<tr>
<td>Mining sector companies in Hanoi Stock Exchange</td>
<td>16</td>
</tr>
<tr>
<td>Total Company</td>
<td>117</td>
</tr>
</tbody>
</table>
Total annual reports that are not available: 17
Sample companies that meet the criteria: 100
Year of observation: 5
Total observation: 500

Using a significance level of 0.05 (=5%), a t-test was carried out to ascertain each independent variable's potential (partial) capacity to explain the behavior of the dependent variable. The hypothesis is accepted if the significance value is 0.05, and it is rejected if the significance value is more than 0.05. Additionally, we used a system GMM estimation for dynamic panels to get around potential endogeneity of the various variables used in the estimation, unobserved heterogeneity, and autocorrelation, which cannot be resolved with a fixed effect.

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Definitions</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Firm Value (Y)</td>
<td>The selling price that investors are willing to pay</td>
<td>Tobin’s Q: (\frac{\text{MVE} + \text{DEBT}}{\text{TA}})</td>
</tr>
<tr>
<td></td>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Green Accounting (X₁)</td>
<td>Green Accounting measurement indicators based on environmental disclosure based on the Global Reporting Initiative (GRI). The Green Accounting Index is used to measure the extent of green accounting disclosures that have been made by companies in their annual reports. The disclosure index is divided into 6 parameters, namely Governance Structure and Management System (A1), Credibility (A2), Environmental Performance Indicators (A3), Environmental Expenditures (A4), Vision and Strategy (A5), and Environmental Initiatives (A6) and 41 items indicators.</td>
<td>Green Accounting Disclosure Index: (\text{Total disclosure of green accounting made} \div \text{Total disclosure that should be made})</td>
</tr>
<tr>
<td>2.</td>
<td>Managerial Ownership (X₂)</td>
<td>The portion of the company's stock owned by management, including directors and commissioners, who actively participate in corporate decision-making.</td>
<td>Managerial ownership: (\frac{\text{Percentage of shares owned by managerial}}{\text{Number of shares}})</td>
</tr>
<tr>
<td>3.</td>
<td>Institutional Ownership (X₃)</td>
<td>Ownership of stock in a company held by organizations like banks, insurance companies, investment firms, and other organizations.</td>
<td>Institutional Ownership: (\frac{\text{Percentage of shares owned by institutions}}{\text{Number of shares}})</td>
</tr>
<tr>
<td>4.</td>
<td>Independent Commissioners (X₄)</td>
<td>The number of commissioners in a firm who represent independent parties, are unattached and unbound, and have no other connection to the business.</td>
<td>Board of Commissioners: (\frac{\text{Number of board commissioners outside the company}}{\text{Size of board commissioners}} \times 100%)</td>
</tr>
</tbody>
</table>
A committee that the board of commissioners independently established to improve control of the business’ operational activities.

### Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Profitability</td>
<td>Net profit earned by the company. In this study, profitability is proxied by Return on Asset (ROA).</td>
</tr>
<tr>
<td>2. Company Size</td>
<td>Reflection of the total assets and capital owned by a company and the size is classified into small, medium and large.</td>
</tr>
</tbody>
</table>

Return on Asset (ROA):

\[
\text{Net profit after tax} \div \text{Total assets}
\]

Size = Ln (Total Assets)

The Global Reporting Index (GRI)-based environmental disclosure is used to gauge how far businesses have advanced green accounting. The governance structure and management system (A1), credibility (A2), environmental performance indicators (A3), environmental spending (A4), vision and strategy (A5), and environmental initiatives (A6) are the six elements that make up the disclosure index (Braam et al., 2016). Using a dummy variable with values of 1 if and 0 if not, content analysis is used to retrieve the data. The dummy variable's ultimate outcome is then scored. Managerial ownership refers to the percentage of shares held by management of the company, including directors and commissioners, who actively engage in corporate decision-making. Calculating managerial ownership involves dividing the number of outstanding shares by the proportion of shares held by managers (Ilmi et al., 2017). The term institutional ownership refers to the ownership of company shares by organizations, such as insurance companies, banks, investment firms, and other organizations. The ratio of the number of institutional shares owned to the total number of outstanding shares serves as a proxy for institutional ownership.

The number of commissioners in a firm who are independent, unrelated to the company in any way, and who represent independent parties are known as independent commissioners. Based on the ratio of independent commissioners to all commissioners, the number of independent commissioners is calculated. In order to improve oversight of the business' operational activities, the board of commissioners independently established the Audit Committee. It's also important to take into account the composition of the audit committee. How effective the audit committee can be depends on how many people are on it, as the audit committee's effectiveness can also be assessed based on how many people are on it. The number of audit committees owned by the corporation serves as a proxy for the audit committee (Putri et al. 2020). In this study, ROA serves as the control variable. The company's profitability is measured by its net profit. Profitability is approximated in this study by Return on Assets (ROA), which is calculated by dividing net profit after tax by total assets. In this study, firm size is defined as the sum of all assets and capital held by a company, and is divided into three categories: small, medium, and large, which are represented by Ln total assets (Lumapow et al., 2017).

### Results and Discussion

#### 4.1 Results

#### 4.1.1 Descriptive Statistics

Descriptive statistics are descriptions of the research variables. The dependent variable in this study is firm value; the independent variables are green accounting, managerial ownership, institutional election, independent board of commissioners, and
audit committee; while control variables are ROA and size. The results of descriptive statistics can be seen in table 4.

According table 4, the average for firm value is 1.302, and the median is 0.480. The minimum value implies that there are companies that have a low firm value. The maximum value implies that there are still companies that have not implemented environmental-related information or green accounting for mining companies in the Southeast Asia region, while the highest value is 0.902, which means that there are companies that provide complete information about the environment or green accounting. The managerial ownership variable shows an average value of 0.055 and a median of 0.002, for the minimum value is 0 which means that there is no managerial ownership within the company and the highest value is 0.685 or around 69% which means that there is institutional ownership in the company with a large enough percentage, namely 69%. As for institutional ownership, the minimum value is 0 meaning that there are companies that do not have institutional ownership in them and the maximum value has a value of 0.1 which means that there is institutional ownership of 10% institutional ownership in the company and the average value is 0.711.

Managerial ownership has an average of 0.389, while for the minimum value the number of independent commissioners is 1 person in the company while the maximum number is 2 people. For the audit committee variable, the average value is 3.246 with a minimum score of 2 audit committee members within the company and a maximum of 6 audit committee members within the company. For the ROA control variable, the maximum value is 0.737 and the minimum is -3.921 or there are companies that experience losses during the observation period, which is around minus 39% and the average value is 0.008. For the variable company size, the average value is 7,472 and the minimum value of company size is 4,218 and the maximum value of the company is 20,259.

4.1.2 Pearson Correlation

Table 5. provides information about the correlation between the explanatory variables used in the panel data regression analysis. In general, the matrix shows that the correlation between variables is not strong which implies that there is no multicollinearity problem between variables. Sufian & Zulkhibri, (2015) stated that multicollinearity is a problem when the correlation is above 0.80, which is not the case here.

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Firm Value</th>
<th>(2) Green Accounting</th>
<th>(3) Managerial Ownership</th>
<th>(4) Institutional Ownership</th>
<th>(5) Independent Commissioners</th>
<th>(6) Audit Committee</th>
<th>(7) ROA</th>
<th>(8) Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>1.000</td>
<td>-0.075</td>
<td>-0.038</td>
<td>0.152</td>
<td>-0.185</td>
<td>-0.073</td>
<td>-0.159</td>
<td>-0.197</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td>1.000</td>
<td>-0.127</td>
<td>0.156</td>
<td>0.156</td>
<td>0.152</td>
<td>0.143</td>
<td>0.519</td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
<td>1.000</td>
<td>-0.429</td>
<td>-0.062</td>
<td>0.081</td>
<td>0.061</td>
<td>-0.038</td>
</tr>
<tr>
<td>(4)</td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td>1.000</td>
<td>0.178</td>
<td>0.062</td>
<td>-0.182</td>
</tr>
<tr>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.051</td>
<td>0.002</td>
<td>0.003</td>
</tr>
<tr>
<td>(6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>(7)</td>
<td></td>
<td></td>
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<td></td>
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<td>(8)</td>
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</tr>
</tbody>
</table>
The equation of the green accounting and corporate governance regression model on firm value is as follows:

\[
FV = 3.17 + 0.344GA + 0.462MOWN + 2.05INSTOWN - 2.551INDCOM - 0.596AUDCOM - 2.928ROA - 0.069SIZE + \epsilon
\]

Table 6. shows the results of the correlation regression between green accounting, corporate governance and firm value. The results of the study state that green accounting, managerial ownership has no effect on firm value, which means H1 and H2 are not supported, while institutional ownership has a significant positive relationship with firm value, which means H3 is supported. The independent board of commissioners and audit committee variables have a significant negative relationship with firm value, which means that H4 and H5 are not supported.

<table>
<thead>
<tr>
<th>Firm Value</th>
<th>Coef.</th>
<th>St. Err.</th>
<th>t-value</th>
<th>p-value</th>
<th>[95% Conf Interval]</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Accounting</td>
<td>0.344</td>
<td>1.139</td>
<td>0.30</td>
<td>0.763</td>
<td>-1.893</td>
<td>2.582</td>
</tr>
<tr>
<td>Managerial Ownership</td>
<td>-0.462</td>
<td>1.351</td>
<td>0.34</td>
<td>0.733</td>
<td>-2.193</td>
<td>3.116</td>
</tr>
<tr>
<td>Institutional Ownership</td>
<td>2.05</td>
<td>0.773</td>
<td>2.65</td>
<td>0.008</td>
<td>0.532</td>
<td>3.568</td>
</tr>
<tr>
<td>Independent Commissioners</td>
<td>-2.551</td>
<td>1.501</td>
<td>-1.70</td>
<td>0.9</td>
<td>-5.501</td>
<td>3.98</td>
</tr>
<tr>
<td>Audit Committees</td>
<td>-0.596</td>
<td>0.278</td>
<td>-2.15</td>
<td>0.032</td>
<td>-1.142</td>
<td>-0.05</td>
</tr>
<tr>
<td>ROA</td>
<td>-2.928</td>
<td>0.736</td>
<td>-3.98</td>
<td>0</td>
<td>-4.373</td>
<td>-1.482</td>
</tr>
<tr>
<td>Size</td>
<td>-0.069</td>
<td>0.035</td>
<td>-1.99</td>
<td>0.047</td>
<td>-1.138</td>
<td>-0.001</td>
</tr>
<tr>
<td>Constant</td>
<td>3.17</td>
<td>1.145</td>
<td>2.77</td>
<td>0.006</td>
<td>0.921</td>
<td>5.419</td>
</tr>
</tbody>
</table>

Mean dependent var | 1.302 | SD dependent var | 3.547 |
R-squared | 0.096 | Number of obs | 500 |
F-test | 7.389 | Prob > F | 0.000 |
Akaike crit. (AIC) | 2649.21 | Bayesian crit. (BIC) | 2682.933 |

Table 7. GMM Result

<table>
<thead>
<tr>
<th>Firm Value</th>
<th>Coef.</th>
<th>St. Err.</th>
<th>z</th>
<th>p-value</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Value (-1)</td>
<td>1.15368</td>
<td>0.0264714</td>
<td>43.58</td>
<td>&lt;0.0001</td>
<td>***</td>
</tr>
<tr>
<td>Green Accounting</td>
<td>0.371578</td>
<td>0.306515</td>
<td>1.212</td>
<td>0.2254</td>
<td></td>
</tr>
<tr>
<td>Managerial Ownership</td>
<td>0.0896820</td>
<td>0.344612</td>
<td>0.2602</td>
<td>0.7947</td>
<td></td>
</tr>
<tr>
<td>Institutional Ownership</td>
<td>0.448674</td>
<td>0.212190</td>
<td>2.114</td>
<td>0.0345</td>
<td></td>
</tr>
<tr>
<td>Independent Commissioners</td>
<td>0.771310</td>
<td>0.414029</td>
<td>1.863</td>
<td>0.0625</td>
<td></td>
</tr>
<tr>
<td>Audit Committees</td>
<td>-0.0587416</td>
<td>0.0702012</td>
<td>-0.8368</td>
<td>0.4027</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>-2.55893</td>
<td>0.702084</td>
<td>-3.645</td>
<td>0.0003</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>-0.0191502</td>
<td>0.00975617</td>
<td>-1.963</td>
<td>0.0497</td>
<td></td>
</tr>
<tr>
<td>Constanta</td>
<td>-0.461725</td>
<td>0.33197</td>
<td>-1.394</td>
<td>0.1633</td>
<td></td>
</tr>
</tbody>
</table>

Sum squared resid | 1022.002 | S.E. of regression | 1.941445 |
Number of instruments = 17
Test for AR(1) errors: z = -1.56577 [0.1174]
Test for AR(2) errors: z = 1.40448 [0.1602]
Sargan over-identification test: Chi-square(8) = 6.05703 [0.6408]
Wald (joint) test: Chi-square (8) = 8926.11 [0.0000]

This study uses GMM (Generalized Method Moment) as shown in table 7. to eliminate bias and endogeneity problems. The results of the GMM test gave consistent results with the main results except for the audit committee. Therefore, it can be concluded from these results that the main results of this study can be said to be moderate and strong. The purpose of using the GMM is to overcome the potential endogeneity of the several variables used in the estimation, unobserved heterogeneity, and autocorrelation, which cannot be solved with a fixed effect. This model combines
the first part of the dependent variable as a covariate and the effect of the unobserved independent variable as an unobserved effect. Because of the inherent correlations between the effects of the independent variables and the dependent variable that are lagged, estimates of typical fixed effects or random effects will be incoherent. Arellano et al. (1991) used a GMM estimator known as GMM divergence for the model to avoid this problem. In the GMM difference model, the lagging exogenous variable is used as an instrument for the first differentiated lagging dependent variable. However, Manuel Areliano (1995) and Blundell et al. (1998) have shown that this lagging variable should yield more information about initial differences. Blundell et al. (1998) expanded on the work of Manuel Areliano (1995) to construct a system estimator that takes advantage of additional moment conditions at first difference and grade, with first difference lagging behind the sequences used as instruments in degree equations.

In this work, the correlation issue between the dependent variable and the GMM estimator's current errors was resolved by using the GMM (Generalized Approach of Moments) analysis method (Albawwat et al., 2015). Endogeneity is the regulated using a GMM strategy using dynamic panel analysis (Leong et al., 2021). To make sure the GMM analysis is valid and reliable, few things need to be tested. First, any serial correlation is looked for using the Arellano-Bond Test. If the crucial condition is met, the validity and instrument specification are certified to be correct. AR (2) checks the residual in this instance to make sure there are no correlations on the changed errors (Odeh et al., 2020). Thus, this investigation utilized AR (2). The AR (2) p-value ought to be higher than 5%. The Sargan test seeks to evaluate the entire instrument's validity with regard to the over-identification limitation, and the p-value provided should be greater than 5%. The Wald test then looks at whether there is a meaningful relationship between the dependent and independent variables.

4.2 Discussion

4.2.1 Green Accounting and Firm Value

Hypothesis 1 shows that green accounting does not affect firm value, and H1 is not supported. This indicates that the organization failed to effectively market environmental expenses to potential investors, despite the fact that its environmental stewardship initiatives may prevent future losses due to the environmental expenses' long-term effect on the firm value. There must be more to make a solid reason to attract investor confidence. The separation of environmental costs and performance from the financial statements reported in the sustainability report makes it difficult for positive perceptions to arise from stakeholders (Erlangga et al. 2021). As required by regulators, certain businesses have yet to disclose environmental-related information. This necessitates a greater emphasis on the impact of green accounting on firm value (Sulistiawati & Dirgantari, 2017), particularly among Southeast Asian mining companies. Moreover, corporations' implementation of environmental disclosures, such as green accounting, serves a purely symbolic purpose to satisfy investor and regulatory expectations. As a result, greater attention to detail and comprehensiveness are required when providing these environmental disclosures. The findings presented in this study are consistent with those of Erlangga et al. (2021) and Sulistiawati et al. (2017).

4.2.2 Managerial Ownership and Firm Value

The results of H2 state that managerial ownership has no influence on firm value in the Southeast Asian region, and H2 is not supported. The findings are consistent with those of Tambalean et al. (2018) and Yulius Jogi Christiawan et al. (2007), who concluded that managerial ownership has no effect on firm value. The sense of proprietorship that managers have over the organization does not contribute to an improvement in company performance. This may be the result of a minority stake held by managers in the company. The absence of substantial ownership hinders management from enhancing its performance to the level that the organization...
anticipates (Tambalean et al., 2018). According to Angela et al. (2022), managerial shareholders can take opportunistic actions that can encourage management to act according to their personal interests. These opportunistic actions are smoothing earnings, so they do not focus on firm value.

4.2.3 Institutional Ownership and Firm Value
The institutional ownership variable significantly positively affects firm value in the Southeast Asia region, and H3 is supported. Agency conflicts can be mitigated through institutional ownership as it ensures that management is subject to oversight by institutions in order to prevent earnings management practices. The maintenance of company performance is enhanced through institutional ownership, thereby enabling the regulation of the relationship between capital providers and administrators (Chabachib et al., 2019). The monitoring function will ensure that shareholders' welfare is protected. Through institutional ownership as a regulator where investors who are large enough in the capital market will inhibit management opportunistic behavior (Widianingsih, 2018). Increased institutional ownership will result in heightened company monitoring, which will consequently lead to the disclosure of all company activities. This will subsequently contribute to the development of a sustainable company, instill confidence in stakeholders, and augment the value of the organization. When making investment decisions, institutional ownership is a significant determinant due to the elevated valuation of the company that results (Trafalgar & Africa, 2019). The firmer the control over the company, which results from greater institutional ownership value, the more likely management is to act in accordance with company objectives, thereby increasing the value of the company. This research hypothesis supports agency theory, which states that pressure from institutional ownership is needed to motivate managers to maximize firm value. Institutional ownership can monitor company management more than other types of ownership (Jo & Na, 2012). Therefore, as institutional shareholders, they have the power to monitor managers.

4.2.4 Independent Board of Commissioner and Firm Value
Furthermore, the independent board of commissioners variable has a significant negative relationship with firm value in Southeast Asia, so H4 is not supported. An external board, known as the independent board of commissioners, is composed of directors appointed from outside the organization. A greater number of external independent directors may not significantly impact firm value, as their role is primarily to provide financial reports and not to reassure stakeholders of the company's legitimacy (Marco Allegri, 2013). Consequently, diminished oversight over company management may result from the independent board of commissioners' diminished reliance on external information. Al-Moataz et al. (2013) found that an increase in the quantity of independent commissioners results in diminished board oversight and reduced levels of corporate transparency.

4.2.5 Audit Committee and Firm Value
In conclusion, firm value is considerably diminished in the Southeast Asian region, where the audit committee variable has an adverse effect; therefore, H5 cannot be supported. The oversight conducted by the audit committee is suboptimal; therefore, the audit committee's presence does not have an effect on the value of the firm. This indicates that an increase in the audit committee’s membership corresponds to a decrease in the value of the company. This is because the audit committee's oversight and control functions over company management could be executed with greater efficiency and transparency, leading to the perception that the company's performance is inefficient. Additional research demonstrates that an increase in the quantity of audit committees within an organization positively correlates with the likelihood of a
company experiencing enhanced performance and potentially increasing its value (Yusmaniarti et al., 2019). The findings of this investigation are consistent with those of Rohmah (2019) and Samrotun et al. (2008).

5. Conclusion
This study investigates the correlation between green accounting and corporate governance on the value of firms. The sample comprises 500 observations of mining company in the Southeast Asian region, specifically Indonesia, Malaysia, Thailand, the Philippines, and Vietnam, throughout the period of 2016-2020. The author finds that green accounting, managerial ownership, independent boards of commissioners, and audit committees do not have a significant relationship with firm value, meaning that H1, H2, H4, and H5 need support. Furthermore, there is a strong and positive correlation between institutional ownership and firm valuation, confirming the hypothesis H3. This study enhances the existing body of knowledge on the impact of green accounting and corporate governance standards on the value of a company. The implication of this research is: The study findings indicate that green accounting does not exert a substantial impact on firm value. This is primarily due to the absence of mandatory regulations pertaining to environmental disclosures, such as green accounting, for companies operating in the Southeast Asian region. Consequently, the adoption of green accounting practices by companies is purely symbolic, intended for fulfilling regulatory and stakeholder demands. Therefore, it is imperative for the government to establish regulations regarding environmental disclosure policies to ensure their effectiveness. Furthermore, it is important to note that the level of ownership by managers does not have an impact on the overall worth of the company. Managerial ownership in mining businesses in Southeast Asia remains primarily concentrated on enhancing corporate profitability from a financial perspective. Simultaneously, regulators and investors exhibit significant interest in companies that prioritize climate change. Therefore, the disclosure of green accounting can facilitate the monitoring and regulation of managerial ownership in environmentally conscious enterprises.

Furthermore, the presence of regulators who are significant investors in the capital market and engage in institutional ownership can effectively prevent management's opportunistic behavior. Therefore, it is important for companies to enhance institutional ownership as these regulators will intensify their oversight, encouraging companies to disclose all their activities, particularly those related to environmental matters, through green accounting disclosures. This, in subsequently, will enhance the company's reputable image and subsequently increase its value. Fourth, Independent commissioners on boards appointed from outside the company are indicated to need help to carry out their functions effectively and efficiently, so a high proportion of independent commissioners cannot supervise and advise directors effectively and provide added value to the company. Hence, corporations must take into account the task of determining the number of independent commissioners. Fifth, a high proportion of audit committees is indicated to reduce firm value due to the audit committee's less than optimal and transparent role in carrying out supervisory and control functions on company management, which results in company performance being considered inefficient. Hence, corporations should reassess the determination of the quantity of audit committees, as having a high number of audit committees in a company only occasionally ensures an enhancement in company performance and a potential increase in company value. Indeed, many audit committees may need help to carry out their duties effectively.

The results of this study are helpful for policymakers, regulators, and practitioners. Policymakers and regulators have empirical information indicating that corporations perform symbolic environmental disclosures, such as green accounting. It is imperative to cooperate with authorities to establish stringent regulations for environmental disclosures, such as green accounting. Similarly, the implementation of
Corporate governance frameworks will motivate regulators and professionals to uphold strong corporate governance protocols. Several constraints exist in this study: Additional data is required to access annual reports of companies from many countries, and certain nations' annual reports are not available in the English language. When evaluating the audit committee, it is important to consider additional elements that can impact it, such as the educational qualifications of its members and their social connections. The research period needs to be longer to get maximum results. Several recommendations for further research can be derived from the previous limitations. It enables the segregation of OLS outcomes among countries such as Indonesia, Malaysia, Thailand, the Philippines, and Vietnam, allowing for distinct insights from the perspective of each country. From the research results, it can be seen that the green accounting variable is in the Southeast Asia region, so the results of this study cannot be generalized.

References


