Green Intellectual Capital, Financial Performance, and Good Corporate Governance

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Abstrak

This study aims to determine the impact of green intellectual capital on financial performance. Researchers employ good corporate governance as a moderating element in studies that examine the impact of green intellectual capital on financial performance. Companies listed on the Indonesia Stock Exchange (IDX) that participated in the PROPER assessment for the 2019-2022 term are the secondary data sources for this research. Investors can pay attention to companies that reveal more information than is required by law as a prerequisite, allowing them to receive as much information as they need to decide whether to continue investing or start investing in lucrative companies or not.

Abstract

Penelitian ini bertujuan untuk melihat pengaruh modal intelektual hijau terhadap kinerja keuangan. Peneliti menggunakan tata kelola perusahaan sebagai variabel moderasi dalam penelitian yang menguji dampak modal intelektual hijau pada kinerja keuangan. Perusahaan yang terdaftar di Bursa Efek Indonesia (BEI) yang mengikuti penilaian PROPER periode 2019-2022 adalah sumber data sekunder penelitian ini. Investor dapat memperhatikan perusahaan yang mengungkapkan lebih banyak informasi daripada yang diwajibkan oleh undang-undang sebagai prasyarat, sehingga investor dapat mengumpulkan informasi sebanyak yang diperlukan untuk memutuskan apakah akan terus berinvestasi dan mulai berinvestasi pada perusahaan yang kelihatannya menguntungkan atau tidak.
Introduction

The ability of a corporation to create profits might describe its financial performance (Wati et al., 2023). The Central Statistics Agency (2023) recorded 4.32% growth in gross domestic product from the third quarter of 2023 to the third quarter of 2022. This figure of growth sends an optimistic signal to the economy as a whole. The economy's growth rate will fall to -3.2% in 2022. With economic development slowing, the performance of Indonesian businesses is in the spotlight. The government is still making several efforts and initiatives to help businesses expand and perform better. However, the actual performance of the company is evaluated in ways other than financial or profit terms. As time passes, commercial competition compels organizations to adapt the tactics they utilize to run their businesses (Ousama et al., 2019). Competitive ability stems not only from the possession of material assets but also the organization's management and people resources (Olarewaju & Msomi, 2021; Suripto & Lucas, 2023). As a result, companies have prioritized not just physical capital but also intellectual capital (Soewarno & Tjahjadi, 2020; Wahyuni et al., 2023).

Intellectual capital can boost a company's financial performance and provide it with a competitive advantage (Nguyen & Nghiem, 2023). This remark, however, contradicts research (Cindiyasari et al., 2022), which found no association between intellectual capital and financial performance. The concept of intellectual capital was subsequently broadened and applied to the environment, resulting in the creation of a new concept known as green intellectual capital (Erinos & Yurniwati, 2018). Green intellectual capital is implemented at the personal and organizational levels through high environmental knowledge and abilities (Sukirman & Dianawati, 2023). The Ministry of Industry of the Republic of Indonesia awarded PT Semen Indonesia the 2022 Green Industry Certification and Award in the Best Performance category through its eight factories, which prioritizes efforts for efficiency and effectiveness in sustainable resource use in every factory operational activity as a form of responsibility towards the environment and stakeholders. PT Semen Indonesia shows how green intellectual capital may assist firms in improving their performance. Green intellectual capital is also thought to be capable of adding value to businesses by transmitting information inside organizations that is sustainable in terms of laws, technology, and best practices, as well as beginning activities to achieve sustainability goals that improve company performance (Sukirman & Dianawati, 2023).

Good corporate governance is just as vital as green intellectual capital. The presence of good corporate governance has a significant positive impact on the amount of green intellectual capital information supplied in annual reports by issuers (Shahzad et al., 2023; Sukirman & Dianawati, 2023). Continuous and consistent execution of good corporate governance will have an impact on a company's financial performance (Shahdadi & Poudat, 2023). Previous study indicates that good corporate governance is directly related to a firm's financial performance. The better the corporate governance of a corporation, the better its financial performance (Wati et al., 2023). Countries that implement efficient corporate governance regulations have more intensive business growth and a stronger ability to attract capital investment than those that do not (Alexandra et al., 2023). Contrary to this assertion, Yaseen et al. (2023) discovered that, while corporate governance has a considerable influence but has no direct impact on company performance, it does have a significant beneficial effect on company performance through the efficiency of the company's intellectual capital. In terms of value, returns on equity, and financial performance measures, firms with good governance beat businesses with
poor governance (Shahdadi & Poudat, 2023).

The Ministry of the Environment held PROPER (Public Disclosure Program for Environmental Compliance), a corporate Performance Assessment Program in Environmental Management, in 2002 to encourage improved firm compliance in sustainable environmental management. Overall, the findings of the 2021-2022 PROPER assessment predict that gold will rise, but it will also fall due to the introduction of many new enterprises that will manage the environment in compliance with existing norms. With a score of 28.2 out of 100, Indonesia is rated 164th out of 180 nations in the Yale University and Columbia University Environmental Performance Index (EPI) in 2022. In comparison to the EPI in 2021, which was 37.8, Indonesia saw a drop. This drop illustrates Indonesia’s deteriorating environmental management, one of which is due to a lack of pollution control. Environmental concerns are an essential issue for Indonesia to address while assessing the negative effects of environmental management, which are becoming more visible presently. When environmental management in Indonesia is poor, the economy and the poor suffer.

This will be the initial study in Indonesia to analyze the relationship between green intellectual capital and corporate financial performance, with good corporate governance serving as a moderating variable and actual evidence gathered from recent Indonesian issuers. While Yaseen et al. (2023) describes the relationship between good corporate governance and firm performance using intellectual capital as a mediating, this study delves deeper into how good corporate governance serves as a moderating variable between green intellectual capital and corporation financial performance. Rahayu & Ramadhanti (2019) and Fatimah & Setiany (2023) use the intellectual capital disclosure index to assess the company’s intellectual capital disclosure. The contrast is that corporate governance is regarded as having the most influence, and intellectual capital acts as a mediator. According to the findings, corporate governance does not affect company performance when intellectual capital is used as a mediator. However, if green intellectual capital influences the company's financial performance with good corporate governance as a moderator, the implications will be different. This research intends to assist Indonesian businesses in understanding how to improve financial performance by enhancing good corporate governance and green intellectual capital.

**Theoretical Framework and Hypothesis Development**

The core of agency theory is the agency relationship between one party (referred to as the principal) and another party who executes the assignment (referred to as the agent) (Rundjan & Susanti, 2023). Effective corporate control occurs when managers act in the best interests of shareholders (Haris et al., 2019). Shareholders play the position of principal in a company, while managers play the function of agent, working on behalf of and in the interests of shareholders (Alexandra et al., 2023). According to agency theory, firms with high agency costs will actively evaluate their governance systems, revealing more voluntary disclosures, including green intellectual capital, to lower their costs (Alexandra et al., 2023; Wira et al., 2023). This agency theory relationship happens when a corporation delegates authority to the board of directors and audit committee to oversee and make decisions regarding the company's financial performance (Wati et al., 2023).

According to signal theory, investors will invest when firms send out positive signals through their reports (Suripto & Lucas, 2023). Investors, on the other hand, will not invest if the company sends out unfavorable signals in its reports. Due to information asymmetry, however, both parties will be unable to perceive each other's attributes and will make incorrect
selections (Sukirman & Dianawati, 2023). The usage of the green intellectual capital variable is supported by signal theory. Green intellectual capital can improve a company's image and reputation among stakeholders by promoting the company's care for the environment (Wei et al., 2023). In this instance, green intellectual capital disclosure is a signal offered by the corporation to stakeholders in its annual report for decision-making to improve corporate performance (Sukirman & Dianawati, 2023). As a result, green intellectual capital is regarded as having the potential to boost the company's financial performance (Sukirman & Dianawati, 2023; Wei et al., 2023).

1.1 Hypothesis Development

1.1.1 Relationship of Green Intellectual Capital to Financial Performance

Green intellectual capital is expected to benefit both externally and internally (Erinos & Yurniwi, 2018). Externally, green intellectual capital can promote a company's environmental concern and, as a result, boost the company's image and reputation among stakeholders (Sukirman & Dianawati, 2023). Then, internally, green intellectual capital can assist businesses in reducing environmental costs, increasing staff awareness and understanding, and developing environmentally friendly company processes and technologies (Sukirman & Dianawati, 2023; Wei et al., 2023). Green intellectual capital enables firms to meet strict international environmental regulations, meet expanding consumer environmental consciousness, and generate value for the business (Sukirman & Dianawati, 2023). This can occur through knowledge transfer inside a corporation that is sustainable in terms of rules, technology, best practices, and activities to meet sustainability goals (Erinos & Yurniwi, 2018).

As a result, green intellectual capital can assist firms in carrying out economic operations that support environmental protection while also providing the firms with a competitive advantage (Sukirman & Dianawati, 2023). The ability of a corporation to make, sell, and distribute goods or services is no longer its major source of competitive advantage in today's economy (Alabood et al., 2023; Rundjan & Susanti, 2023; Nguyen & Nghiem, 2023; Wahyuni et al., 2023). Competitive advantage can be gained by utilizing the company's internal resources, specifically assets, both tangible and intangible (Asutay & Ubaidillah, 2023; Ousama et al., 2019; Wira et al., 2023; Xu & Liu, 2020). As a result, green intellectual capital has a favorable impact on firm performance (Hussain et al., 2023; Pangestu & Muharam, 2023; Xu & Liu, 2020). Green intellectual capital has a favorable impact on a company's financial performance (Erinos & Yurniwi, 2018; Sukirman & Dianawati, 2023). The findings revealed that intellectual capital had a favorable impact on firm performance (Nguyen, 2023; Olarewaju & Msomi, 2021; Soewarno & Tjahjadi, 2020; Suripto & Lucas, 2023; Xu et al., 2023). Intellectual capital improves corporate performance, especially accounting-based performance as measured by return on assets (Haris et al., 2019; Weqar et al., 2021). As a result of their findings, the researchers propose the following hypothesis:

H1: Green intellectual capital has a favorable impact on financial performance

1.1.2 The Relationship Between Green Intellectual Capital, Good Corporate Governance, and Financial Performance

The amount of resources invested in a business determines how well it performs (Shahdadi & Poudat, 2023). Green intellectual capital and good corporate governance will be offered as company support (Shahzad et al., 2023). According to agency theory, management is responsible for running the corporation using the resources available to do so in the best interests of stakeholders (Alexandra et al., 2023; Sukirman & Dianawati, 2023). This leads to the conclusion that green
Intellectual capital is a type of resource that may be handled by good corporate governance (board of directors, audit committee) as the person in charge of operating the business (Wei et al., 2023; Yaseen et al., 2023). Green intellectual capital and good corporate governance have an impact on the financial performance of a company (Sukirman & Dianawati, 2023). Good corporate governance is also closely related to green intellectual capital, so green intellectual capital has a favorable impact on the company's financial performance when combined with good corporate governance as a moderation (Sukirman & Dianawati, 2023; Wei et al., 2023). As a result, researchers develop hypotheses:

H2: Green intellectual capital and financial performance can be moderated by good corporate governance

**Research Methods**

In this study, which is processed with WarpPLS 5.0, partial least squares are utilized as a data analysis approach. The following regression model was used by the researchers:

$$FPM = \gamma_1 \text{GIC} + \gamma_2 \text{GCV} + \gamma_3 (\text{GIC} \times \text{GCV}) + \zeta_1$$

This study was conducted utilizing secondary data sources for the years 2019 to 2022. Non-probability sampling with a purposive sample strategy was used to acquire research data from companies listed on the Indonesia Stock Exchange (BEI) that participated in the PROPER assessment. Four years of data multiplied by the sample size of fifteen companies resulted in 60 observations.

**Table 1. Company Sample**

<table>
<thead>
<tr>
<th>No.</th>
<th>Criteria</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Firms listed on the Indonesia Stock Exchange (IDX) from 2019 to 2022</td>
<td>833</td>
</tr>
<tr>
<td>2</td>
<td>Firms that are not PROPER participants in the 2019-2022 period</td>
<td>(771)</td>
</tr>
<tr>
<td>3</td>
<td>Firms with missing annual report and sustainability report data for the 2019-2022 fiscal year</td>
<td>(43)</td>
</tr>
<tr>
<td>4</td>
<td>Firms that have not been listed on the IDX consecutively from 2019 to 2022</td>
<td>(4)</td>
</tr>
<tr>
<td></td>
<td>Number of firms that meet the research sample requirements</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>The number of research years (2019-2022)</td>
<td>4 years</td>
</tr>
<tr>
<td></td>
<td>Number of completed yearly reports (15 x 4 years)</td>
<td>60</td>
</tr>
</tbody>
</table>

Source: Processed Data (2023)

**Table 2. Variable Explanation**

<table>
<thead>
<tr>
<th>Variable Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: Financial performance (Wahyuni et al., 2023; Xu et al., 2023) = Net profit after taxes / total assets</td>
</tr>
<tr>
<td>Moderating Variable: Good corporate governance (Shahzad et al., 2023) = The number of directors on the board</td>
</tr>
<tr>
<td>Audit committee (Shahzad et al., 2023) = Σ Audit committee</td>
</tr>
<tr>
<td>Independent Variable: Green intellectual capital (Huang &amp; Kung, 2011) = n / k</td>
</tr>
</tbody>
</table>
Results and Discussion

According to the Goodness of Fit Model output, the model in the study has a pretty excellent fit, with P values for Average Path Coefficient (APC) < 0.001, Average R-squared (ARS) < 0.001, and Average Adjusted R-squared (AARS) < 0.001 with APC value = 0.131, ARS value = 0.165, and AARS value = 0.134. Similarly, the Average block VIF (AVIF) value is 1.016 and the Average Full Collinearity VIF (AFVIF) value is 1.140, both of which are < 3.3, indicating that multicollinearity between indicators and exogenous variables is not present.

The Adjusted R-squared coefficient for financial performance is 0.843 indicating that green intellectual capital explains 84.3% of the variation in financial performance, with the remaining 15.7% explained by variables outside the model.

The resulting Q-squared value for each dependent/endogenous variable is greater than zero, indicating that the model has predictive relevance. The R² value for direct influence is 0.815 or 81.5%, and the R² value increased to 0.837 or 83.7% after the indirect influence, implying that the presence of good corporate governance (moderating variable) will be able to boost the association between green intellectual capital and financial performance.

Table 3 supports hypothesis 1 (H1), demonstrating that green intellectual capital has a considerable beneficial effect on financial performance. At p-value 0.05, hypothesis H2 (GCV*GIC → FPM) is significant, demonstrating that good corporate governance can moderate the association between green intellectual capital and financial performance.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variable Connections</th>
<th>Path Coefficient</th>
<th>P-value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 GIC → FPM</td>
<td>0.022*</td>
<td>0.049</td>
<td>Accepted</td>
<td></td>
</tr>
<tr>
<td>H2 GCV*GIC → FPM</td>
<td>0.259*</td>
<td>0.016</td>
<td>Moderation</td>
<td></td>
</tr>
</tbody>
</table>

*p<0.05

Source: Processed Data, 2023
Green intellectual capital has a positive effect on financial performance. The first hypothesis proposed in this study is accepted. This is supported by research carried out by (Alabood et al., 2023; Asutay & Ubaidillah, 2018; Haris et al., 2019; Nguyen, 2023; Olarewaju & Msomi, 2021; Ousama et al., 2019; Rundjan & Susanti, 2023; Soewarno & Tjahjadi, 2020; Sukirman & Dianawati, 2023; Suripto & Lucas, 2023; Nguyen & Nghiem, 2023; Weqar et al., 2021; Wira et al., 2023; Xu et al., 2023; Xu & Liu, 2020) also demonstrate that the presence of green intellectual capital leads to higher corporate financial performance. If a firm manages its intellectual capital components properly, green intellectual capital can have a direct impact on its assets. Companies that can compete and have a competitive advantage over their competitors have a higher profit potential and a more positive image in the viewpoints of investors. According to signal theory, green intellectual capital can increase a company's environmental care and thus improve the company's image and reputation from the perspective of stakeholders, which has an impact on its financial performance.

The moderating influence of good corporate governance might enhance the association between green intellectual capital and company financial performance. This is supported by research carried out by (Shahdadi & Poudat, 2023; Shahzad et al., 2023; Sukirman & Dianawati, 2023; Wei et al., 2023). Green intellectual capital is a one-of-a-kind resource that can give a company a competitive advantage, allowing it to improve its performance and contribute value to the corporation. According to agency theory, good corporate governance provides more information, particularly green intellectual capital disclosure, to lessen the risk of information asymmetry between management and stakeholders, potentially cutting agency costs and boosting firm performance.

Conclusions and Suggestions

Green intellectual capital has a beneficial impact on financial performance, according to the findings of the study and tests. Green intellectual capital and financial performance can be moderated by good corporate governance. Green intellectual capital and good corporate governance in a corporation will both have a positive impact on financial performance. Green intellectual capital in a firm is a resource that promotes environmental impact prevention and reflects the company's competitive advantage in the environmental domain. Green intellectual capital is said to be capable of boosting a company's competitive edge by using pollution avoidance tactics through product management, which reduces production costs and enhances the company's financial performance.

This study has limitations because it focuses solely on the moderation of strong corporate governance depending on the number of directors on the board and audit committees. The next study will evaluate the moderation of good corporate governance using the nationality diversity of the directors. It is suggested that future studies use observations over a longer period and a representative sample or population to see if the findings of this study hold.

Daftar Pustaka


