

# **DOES CORPORATE GOVERNANCE MODERATE INTELLECTUAL CAPITAL ON CORPORATE SUSTAINABILITY ACCOUNTING?**

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## **Abstract**

The impact of intellectual capital on corporate sustainability and governance as a moderating variable is investigated. This research uses the PLS method. This research is about banks on the IDX in 2019-2023. This study demonstrates that structural and physical capital positively and significantly impact firm sustainability. Firm sustainability is significantly impacted negatively by human capital. The sustainability of a firm is not considerably affected by relational capital. This research strengthens the resource-based view (RBV) theory in the context of the company's intellectual capital where it has unique resources and then creates a competitive advantage. This has practical implications so that companies are in a position to develop exceptional resources that competitors cannot copy, this is in keeping with the RBV view, which emphasises the importance of unique assets in creating competitive advantage.

**Keywords:** Intellectual Capital, Financial Sustainability, Corporate Governance

## **INTRODUCTION**

The advancement of global science and technology is accelerating, especially since the beginning of the fourth industrial revolution. The digital economy is a phenomenon that has emerged due to the fourth industrial revolution, which drives the advancement of information technology. This phenomenon describes significant changes in how digital transformation technology is used across various sectors, including the financial industry, which encompasses financial institutions such as banks and insurance companies (Javaid et al., 2024). The digital economy era encourages many companies to transition from labor to knowledge-based businesses (Zirar et al., 2023). Therefore, companies must continuously innovate to become

knowledge-based enterprises, whereas initially, businesses were valued based on tangible assets such as cash, buildings, etc. In the new era, businesses are evaluated based on intangible assets, namely human resources or customer relationships. This phenomenon is reinforced by numerous studies, such as the research by (Yao et al., 2019), which found that intangible assets in a company are more likely to play a role in achieving the company's progress (Gumbau-Albert, 2024). The urgency of this research is that intellectual capital, intangible assets, enhance a company's success, but it is still challenging to measure accurately because it is not recorded on the balance sheet and there are no established measurement standards. Although there are regulations regarding intangible assets in IFRS (International Financial Reporting Standards), no specific explicit standard still explains the measurement and recognition of intellectual capital (Purba et al., 2023). The current accounting system only considers physical assets, and traditional accounting struggles to identify and assess intellectual capital, resulting in a discrepancy between book value and market value (Hussinki et al., 2024). This creates uncertainty for companies in applying existing standards and assessing how they should report their intangible assets.

The resource-based view (RBV) theory states that companies can achieve competitive advantage through effective resource management, thereby supporting long-term sustainability. Intellectual capital refers to resources that are dynamic in nature, encompassing interactions between individuals and organizations, knowledge, as well as skills and networks. By optimizing intellectual capital, companies can create sustainable value (Florensia et al., 2022). There are three types of resources that a company possesses, namely human resources (knowledge, skills, experience), physical resources (raw materials, factories, technology, and equipment), and organizational resources (organizational structure), which can be referred to as organizational resources, the main intangible assets in a business (Agustia et al., 2021). A company that possesses valuable and rare resources, has capabilities that are not the same as its competitors, is not easily imitated, and cannot be replaced can achieve a sustainable competitive advantage and superior performance (J. Xu & Zhang, 2021). The RBV theory – resource-based view can be used as a foundation to understand intellectual capital, an intangible asset (Kero & Bogale, 2023) mention that when intellectual capital has been discovered. A company can utilize it effectively, then intellectual capital is not difficult to understand and is expected to create added value that benefits its sustainability.

Investors need other instruments to determine the health condition of a company, one of which is by looking at the company's sustainability. The concept of sustainability is the ability of a company to carry out its work programs continuously to achieve its goals, where the company is expected to (Assoratgoon & Kantabutra, 2023). A company's sustainability is proxied by the sustainable growth rate (SGR), which is a measure that can determine the continuity of a business. In this highly dynamic and competitive era, the resources owned are not maximized if the company only focuses on growth. Financial sustainability through the sustainable growth rate (SGR) indicates that the company can fund its business operations with internal funds without seeking external funding sources (Mukherjee & Sen, 2019). As the concept of intellectual capital evolves, many researchers are trying to find accurate measurements of intellectual capital. Pulic, as explained in (Ulum, I., 2008) shows that the VAIC method does not assess this directly, but measures the efficiency of value added from the company's intellectual capabilities (Bayraktaroglu et al., 2019). The main components of the VAIC method are VACA, VAHU, and STVA. Then (Ulum et al., 2014) studied intellectual capital and designed the VAIC method, which was modified and is known as M-VAIC (modified value added intellectual coefficient), adding the element of relational capital efficiency.

This research uses the corporate governance moderation variable because it plays a crucial role in ensuring the effective management of intellectual capital to support the company's sustainability. In the context of intellectual capital, corporate governance serves as a framework that enhances accountability and transparency, especially in reporting intangible assets that are often difficult to measure and not recorded in financial statements. Good governance helps reduce the disparity between a business's market value and book value, thereby increasing investor confidence. Furthermore, corporate governance can mitigate risks related to the management of intangible assets, ensuring that strategic decision-making is conducted according to principles that support long-term sustainability. Based on the resource-based view (RBV) theory, valuable, rare, inimitable, and non-substitutable assets can provide a sustainable competitive advantage.

Research on the impact of intellectual capital on sustainable finance has been extensively studied previously. (Mukherjee & Sen, 2019; J. Xu & Wang, 2018) show that intellectual capital is a crucial resource in creating value and a key factor in enhancing sustainable financial performance. However, (Agustia et al., 2021; Florensia et al., 2022) state that not all

components of intellectual capital can enhance sustainable financial performance. Similar research (Boediono & Lusmeida, 2022) shows that intellectual capital has no influence on sustainability in companies. The researcher is motivated to continue the research results, which differ, regarding the influence between these variables and making corporate governance a moderating variable. Corporate governance practices have been proven to support higher and more sustainable growth; moreover, implementing corporate governance also helps increase investor confidence and can protect investors in certain undesirable conditions. Good corporate governance is necessary to run business operations and ensure the company remains resilient and competes globally. When a company implements intellectual capital, corporate governance must ensure that managerial decisions can be trusted to advance the interests of shareholders (Arslan & Alqatan, 2020). Research (Boediono & Lusmeida, 2022) shows that governance significantly impacts business sustainability.

This research aims to advise company management not only to implement the measurement of tangible asset value but also to start measuring the value of intangible assets within the company. Furthermore, this research investigates the moderating function of governance in this relationship and provides empirical evidence for the potential impact of intellectual capital on sustainable financial performance. It is expected that by providing evidence that supports the resource-based view (RBV) theory, the research will contribute to the field of financial accounting.

## LITERATURE REVIEW

Intellectual capital is an intangible element that encompasses knowledge, skills, innovation, and the organization's relationships with external stakeholders, all of which contribute to creating long-term value for the company (Obeidat et al., 2021). When companies strive to integrate sustainability principles into reporting and management systems, intellectual capital becomes crucial in generating more meaningful, relevant, and strategic information in sustainability accounting (Bananuka et al., 2023). Intellectual capital has three main components: human, structural, and relational. The three are believed to be the main drivers of innovation and sustainable value creation (C.-J. Chen et al., 2009). In the context of sustainability reporting, companies with a high level of intellectual capital tend to be more adaptive to regulatory changes and stakeholder expectations, and are better able to present accurate and value-added sustainability accounting information (Wang, 2017).

However, although intellectual capital has great potential, its effectiveness in promoting corporate sustainability accounting practices is not automatic, but rather highly influenced by corporate governance that regulates how these resources are used and reported (Achim et al., 2023). Corporate governance (CG) is a control and guiding mechanism for company strategies, including sustainability. Effective corporate governance (CG) ensures that intellectual capital is utilized for achieving short-term profits and directed towards creating sustainable value in line with environmental, social, and governance (ESG) principles. In this framework, CG is a moderator that strengthens or weakens the relationship between intellectual capital and sustainability reporting. Several studies have found that companies with more independent boards of directors, active audit committees, and high institutional ownership can leverage intellectual capital to enhance the quality of sustainability reporting (Nguyen et al., 2020; Rezaee, 2016).

Moreover, good governance practices can minimize the risk of manipulation or window dressing in sustainability reporting and enhance transparency and accountability (Br Damanik, 2021). In this situation, governance functions structurally, culturally, and normatively, shaping values and reporting ethics consistent with long-term sustainability principles. Therefore, integrating intellectual capital and corporate governance practices becomes crucial in ensuring that corporate sustainability accounting is not merely symbolic, but reflects actual performance and contributes to the organization's legitimacy in the eyes of the public (Guthrie et al., 2006).

### **Human Capital in Corporate Sustainability**

Human capital is a key element in the corporate sustainability framework because it reflects the values of knowledge, skills, experience, and competencies possessed by individuals in the organization. Companies that strategically manage and develop human capital will have higher resilience and innovation capabilities in facing the challenges of a dynamic business environment, including adopting sustainability principles. Human capital is not only responsible for achieving productivity, but also acts as a catalyst in implementing ethical values, participatory leadership, sustainable innovation, and corporate social responsibility practices.

Human capital is an asset that plays a role in creating strategic value and long-term competitive advantage for companies, especially in the context of sustainability (Marr et al., 2004). Furthermore, knowledge management based on human capital development is directly

related to the successful implementation of innovative and sustainability strategies (Kianto et al., 2017). Research conducted by (Dewayanto et al., 2020) shows that human capital significantly affects corporate decision-making in implementing environmentally friendly strategies. This indicates that companies that encourage good employee training, empowerment, and career management are better prepared to respond to social and ecological issues. In addition, research by (Bontis et al., 2018) emphasizes that human capital contributes to creating an organizational culture that supports green innovation and resource efficiency, two essential aspects of sustainability.

Human capital is also a driving force in establishing good corporate governance practices oriented towards sustainability principles, as stated by (Arif et al., 2023) that financial literacy and employee awareness of social and environmental risks are the basis for making sustainable corporate investment decisions. In the energy and mining sector, research by (Haseeb et al., 2019) shows that training and strengthening human resource capacity strengthen operational resilience and improve compliance with environmental regulations. Companies that instill sustainability values in HR training and development tend to have a long-term commitment to ethical and environmentally friendly business practices (Farooq et al., 2017).

H1. Human Capital has a positive effect on Corporate Sustainability

### **Structural Capital in Corporate Sustainability**

Structural capital is one of the main pillars in the intellectual capital framework that reflects the infrastructure, organizational processes, information systems, and corporate governance that support sustainable value creation (Zangouinezhad & Moshabaki, 2009). In corporate sustainability, structural capital is a catalyst that enables organizations to consistently implement long-term policies and strategies that consider economic, social, and environmental aspects (Vătămănescu et al., 2023). Substantial structural capital allows companies to internalize sustainability values in their management systems, adopt environmentally friendly technologies, and maintain efficient business processes that support waste reduction, energy efficiency, and wise resource management..

Knowledge management systems, documented organizational processes, and information technology support have been proven to accelerate the transformation of companies towards sustainable business practices. Furthermore (Wang, 2017), research (Delgado-Verde et al., 2016) confirms that the integration of structural capital with innovation

strategies increases the company's adaptive capacity to environmental regulations and changes in consumer preferences for green products. that companies that have a strong governance structure, as well as an integrated demand reporting system, are more successful in building a socially responsible corporate image (Sukoco et al., 2021) Likewise, a study by (Sari & Astari, 2023)revealed that an adaptive internal structure and a consistent demand reporting system are essential prerequisites in meeting stakeholder expectations for corporate accountability and transparency.

Structural capital improves operational efficiency and strengthens competitive advantage in a market context that is increasingly driven by sustainability values (Kianto et al., 2017). Companies with established structural capital tend to have more mature sustainability performance reporting systems, and can translate the company's strategic vision into consistent operational policies. In the energy sector, the success of energy companies in adopting renewable energy and energy efficiency systems is greatly influenced by the sophistication of their organizational structure and knowledge management systems(Inkinen, 2015). This shows that without supporting structural capital, the transformation towards sustainability will not run optimally(Aramburu & Sáenz, 2011). In addition, institutional structures that encourage accountability, the use of digital technology, and mature operational risk management play a significant role in improving corporate sustainability, especially in developing countries.( Haseeb et al., 2019).

## H2. Structural Capital has a positive effect on Corporate Sustainability

### **Physical Capital in Corporate Sustainability**

Physical capital, including assets such as machinery, buildings, and infrastructure, plays a key role in supporting corporate sustainability. Research shows that investment in quality physical capital can enhance operational efficiency, reduce waste, and support sustainable business practices(Alhaddi, 2015) .Companies with modern infrastructure tend to be more adaptive to environmental regulations and sustainable market demands ((Eccles et al., 2014). Additionally, well-maintained physical capital supports the transition to renewable energy and environmentally friendly production (Stefan & Paul, 2008). A study by (Bocken et al., 2014) found that companies with sustainable physical assets have more stable financial performance in the long term. Meanwhile, (Dechezleprêtre et al., 2022) assert that innovation in physical capital, such as green technology, significantly contributes to business

competitiveness and sustainability. Thus, optimizing physical capital supports operations and becomes an essential pillar in the company's sustainability strategy. Thus, the optimization of physical capital not only supports operations but also becomes an essential pillar in the company's sustainability strategy.

H3. Physical Capital has a positive effect on Corporate Sustainability

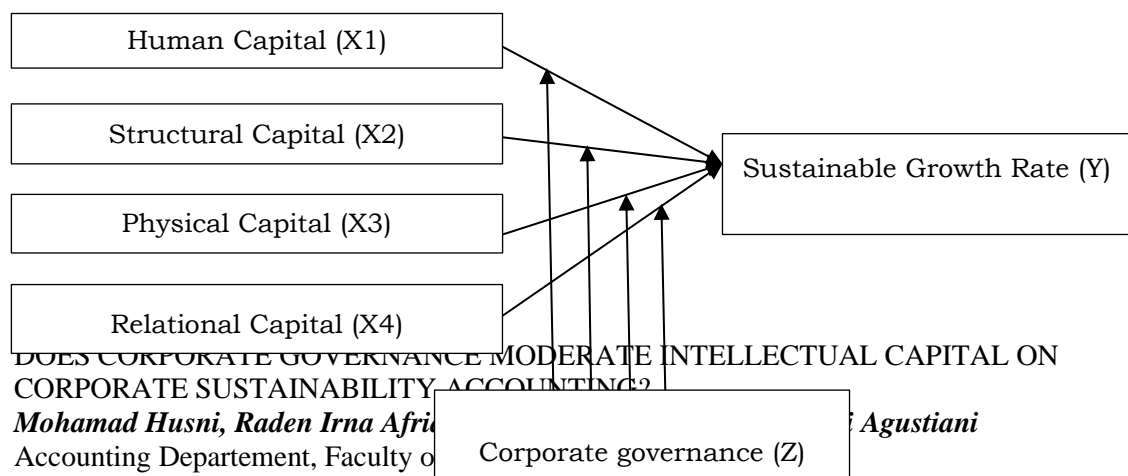
### Relational Capital in Corporate Sustainability

Relational capital, which includes relationships with customers, suppliers, communities, and other stakeholders, is critical to achieving corporate sustainability. Research (Dyllick & Muff, 2016) shows that companies with strong relational networks are more resilient in facing social and environmental challenges. Good relationships with suppliers encourage sustainable supply chain practices (Golicic & Smith, 2013), while customer trust strengthens brand loyalty and long-term competitiveness ((Linnenluecke et al., 2013). Additionally, partnerships with government agencies and NGOs can facilitate the adoption of sustainable policies (Seuring & Müller, 2008). The study (Tantalo & Priem, 2016) emphasizes that inclusive relational capital drives sustainability-based innovation. Thus, investing in building and maintaining strategic relationships enhances the company's reputation and becomes a key driver of business sustainability.

H4. Relational Capital has a positive effect on Corporate Sustainability

## METHODOLOGY

This research uses purposive sampling. Table 1 lists examples of selection criteria. Table 1 illustrates that this analysis includes conventional banks listed on the IDX from 2019 to 2023. Conventional banks constitute the population because the banking and financial services business is service-oriented. Thus, information, knowledge, human resources, IT, and corporate culture are essential for this industry's functioning and the company's success.





### Figure 1. Research Thinking Framework

Figure 1 shows the contextual model in this study. Based on Figure 1, the model equation formed is :

$$SGR = \beta_1 HCE + \beta_2 SCE + \beta_3 CEE + \beta_4 RCE + e \quad (i)$$

$$SGR = \beta_1 HCE + \beta_2 SCE + \beta_3 CEE + \beta_4 RCE + \beta_5 CG + \beta_6 (HCE * CG) + \beta_7 (SCE * CG) + \beta_8 (CEE * CG) + \beta_9 (RCE * CG) + e \quad (ii)$$

Based on Figure 1 and the formed equation model, the dependent variable of this research is the company's sustainability, which is proxied by the sustainable growth rate (SGR) measured using the return on equity ratio multiplied by the retention ratio. This ratio explains the maximum annual growth rate of the company's sales that can be achieved using the company's internal funds without having to add funds from external parties or borrowing funds from banks (Mukherjee & Sen, 2019). The sustainable growth rate helps a company avoid corporate debt. Companies with a high sustainable growth rate can maximize their sales efforts to prevent financial difficulties. This proxy was chosen because it can provide an overview of the company's performance where sustainability in the future comes from other company sustainability proxies. This research uses the research instrument (Nurvita & Dayanti, 2021).

In this study, intellectual capital refers to a company's personnel's innovation, experience, knowledge, and competencies that provide the organization with a competitive advantage and long-term value (Barak & Sharma, 2024). This is relevant to the resource-based view (RBV) theory, which states that a business possessing rare and valuable resources will gain the ability to maintain a stable competitive advantage in the long term (Farida & Setiawan, 2022). This research uses the M-VAIC method, which has 4 indicators: physical capital, human capital, structural capital, and relational capital. The M-VAIC method was chosen because the M-VAIC model is considered a more comprehensive measure of intellectual capital efficiency, thus providing more convincing results. This statement is supported by research (Zhang et al., 2011) which mentions that the VAIC model cannot account for the combined impact of various types of assets, both tangible and intangible, which can affect the company's performance.

Additionally, another drawback is that relational capital, which should also be used as a component in calculating intellectual capital in the VAIC model, is not included in the calculation. This research uses research instruments (Barak & Sharma, 2024; Tjahjadi et al., 2021; X. Xu et al., 2019). The first indicator is human capital (HCE), defined as intellectual capital in the form of knowledge, good attitudes, education, experience, and processes or development of employees (Acuña-Opazo & González, 2021). The ratio of value added to human capital is known as human capital, and it shows how well a business creates value from the investment made in its workforce. One measure of the quality of a company's human resources is this ratio, which can generate added value for every rupiah spent by the company. If the company utilizes its human resources efficiently and obtains high-quality labor, the added value generated from each rupiah spent by the business/company will increase, which in turn can enhance the operational efficiency of the business.

**Table 1**  
**Research Sample Selection Criteria**

No	Criteria	Amount
1.	Banking companies listed on the IDX for the 2019 – 2023 period	45
2.	Banking companies that were delisted in the period 2019 – 2023	-2
3.	Banking companies that reported annual reports inconsistently in the period 2019 – 2023	-2
4.	Banking companies that have not become public companies in the period 2019 – 2023	-3
5.	Banking companies that did not distribute dividends in the period 2019 – 2023	-16
6.	Banking companies that experienced losses in the period 2019 – 2023	-11
Companies selected as samples		11
<b>Total sample used (11 Companies x 5 Years)</b>		<b>55</b>

The second indicator is structural capital (SCE), which is intellectual capital that helps workers create optimal performance. Structural capital refers to hardware, organizational structure, and databases (Budiyatko, 2024). Structural capital compares structural capital and the value added where it is produced. This ratio shows how much structural capital is needed to generate one added-value rupiah. Unlike human capital, which is independent, structural capital depends on the value creation process (Ivan, M.P. Brata & Nur Wening, 2023). (Hariyono & Narsa, 2024) say, If the role of human capital in adding value to the company decreases, then

the contribution of structural capital increases, and vice versa. This is because human capital offers more advantages than structural capital in terms of value creation; structural capital is the gap/difference between added value and human capital (Nanda et al., 2024).

The third indicator is physical capital (CEE), the value added to working capital ratio. This ratio indicates the funds owned by the company, which is the efficiency of physical capital. According to (Soewarno & Tjahjadi, 2020), if one unit of physical capital generates greater profits than other companies, the business is utilizing physical capital very effectively. Physical capital measures a business's intellectual ability to use its physical assets (Dewi & Dewi, 2020). Physical capital represents the entire book value of a company's assets, and the two are interconnected; relatively high physical capital expenditures will impact the company's assets, which will also be higher. Both tangible and intangible resources are greatly needed in a business, although intellectual capital is equally essential, physical assets play a crucial role in enhancing performance. (Yao et al., 2019) emphasize that physical capital is significant for the banking sector and is the most essential source of company performance. Providing direct investments in various assets used for business operational activities is expected to generate added value for the company, which is the definition of physical capital.

The fourth indicator is relational capital (RCE), and this research modifies the VAICTM measurement model (Siti Zaitun Saddam & Jaafar, 2021). The modification involves adding a component of intellectual capital in the form of relational capital to the VAIC measurement formula. Relational capital refers to added value related to interactions between the company and suppliers, customers, and stakeholders (Singla, 2020). The most important aspect of relational capital is how the company maintains good relationships with all parties interested in the company over the long term, either through direct interactions or by building and maintaining mutual trust. Relational capital is significant for companies to create products and services for customers continuously, and if customers are satisfied with their needs, they will promptly provide positive feedback to the company. Collaboration with external parties and internal support can meet the goals previously set by the company, making the company's business activities more sustainable (Putra, 2022). The presence of relational capital demonstrates the value that a business has built from its relationships with stakeholders. The efficiency of using relational capital also demonstrates a business's capacity to maintain the quality of relationships and attract new clients, both of which are essential components of a successful business. Thus, achieving a high level of relational capital is very important for

companies because it can help them strengthen connections, which can help them achieve their goals. Building strong client connections can sustainably enhance a business's competitive advantage and differentiate it from competitors.

This research includes a moderating variable, namely corporate governance (CG), defined as how the company implements it to achieve optimal results and the best performance for the benefit of investors and must comply with applicable regulations (Rostami & Rezaei, 2021). (Shahwan & Habib, 2020) state that there must be good governance to maximize the use of all available resources and then improve performance, which will impact the company's sustainability. (Salviantono et al., 2022) show how corporate governance impacts intellectual capital, particularly those oriented towards responsibility, transparency, and integrity in conducting business. According to agency theory, corporate governance facilitates better organizational decision-making and can moderate the knowledge imbalance between the principal and management. Good governance can consistently improve company performance, encouraging the organization to utilize its resources, primarily intellectual capital. The proxies used in measuring corporate governance in this study are the ratio of independent commissioners and the size of the board of directors. The ratio of independent commissioners refers to individuals who do not collaborate with other board members and are used in this research to evaluate corporate governance (Rizki & Saad, 2023). Because independent commissioners balance decision-makers and drive good corporate governance. The ratio of independent commissioners from outside the company to the total number of commissioners determines the size of the independent board. The primary duty of the board of commissioners is to observe business activities by corporate governance standards. They are also tasked with monitoring the board of directors' performance and assessing how well the board's policies are implemented. Independent commissioners are expected to provide an unbiased assessment of the board of directors' policies (Sondokan et al., 2019). Each company must ensure that a minimum of 30% of its entire board of commissioners consists of independent commissioners. This research uses a research instrument (Puspitasari et al., 2024). Meanwhile, the board of directors is the personnel appointed to lead the company and who will formulate the company's strategies in the short or long term. Implementing management by prioritizing the company's interests by its goals and objectives is the duty and accountability of the board of directors (Zhang et al., 2011). (Tjahjadi et al., 2021) state that increasing a company's sustainability can be achieved by increasing the proportion of the board of directors, as a larger

number of directors can enhance a business because the company will have many different perspectives and ideas that will create better strategies. (Hussain et al., 2018) revealed that the smaller the board size, the greater the workload for each board member. The board of directors, as strategic decision-makers, is responsible for the company's daily operations and the implementation of policies approved by the board of commissioners. The larger the proportion of the board of directors, the greater the influence it has in determining the direction and strategy of the company (Khaoula & Moez, 2019). Like the study (Chams & García-Blandón, 2019) which explains that the size of the board of directors plays a vital role in shaping sustainable performance. The researchers chose governance as a moderating variable because it plays a crucial role in ensuring the effective management of intellectual capital to support the company's sustainability. And the researchers chose this proxy because it better explains the moderating variable in this study.

## RESULT AND DISCUSSIONS

Table 2 shows the results of the regression test based on table 2, the regression model equation formed is :

$$\text{SGR} = -1,857\text{HCE} + 2,346\text{SCE} + 0,310\text{CEE} + 0,236\text{RCE} + e \quad (\text{i})$$

$$\begin{aligned} \text{SGR} = & -1,857\text{HCE} + 2,346\text{SCE} + 0,310\text{CEE} + 0,236\text{RCE} + \quad (\text{ii}) \\ & -0,2169\text{CG} + -0,983(\text{HCE}*\text{CG}) - 0,488(\text{SCE}*\text{CG}) + \\ & -0,354(\text{CEE}*\text{CG}) + -0,068(\text{RCE}*\text{CG}) + e \end{aligned}$$

**Table 2**  
**Regression Test Results**

Variables	Test Result
Human Capital -> Corporate Sustainability	-1,857 (0,011)
Structural Capital -> Corporate Sustainability	2,346 (0,001)
Physical Capital -> Corporate Sustainability	0,310 (0,039)
Relational Capital -> Corporate Sustainability	0,236 (0,059)
Corporate Governance -> Corporate Sustainability	-0,216 (0,443)
Human Capital *corporate governance -> corporate sustainability	-0,983 (0,363)
Structural Capital *corporate governance -> corporate sustainability	0,488 (0,501)
Physical Capital *corporate governance -> corporate sustainability	-0,354 (0,224)
Relational Capital *corporate governance -> corporate sustainability	-0,068 (0,641)

Table 2 shows that the value of human capital has a negative and significant impact on the company's sustainability, as proxied by the sustainable growth rate. This means that the higher the human capital in the company, the lower the sustainability of the company will be. Table 2 shows that the value of structural capital has a significantly positive impact on the company's sustainability, as proxied by the sustainable growth rate, meaning that the higher the structural capital in the company, the greater the sustainability of the company. Table 2 shows that the value of physical capital has a significantly positive impact on the company's sustainability, meaning that the higher the physical capital in the company, the greater the sustainability of the company. Table 2 shows that relational capital does not significantly impact the sustainability of the company as proxied by the sustainable growth rate. This means that the high or low level of relational capital in the company will not impact the sustainability of the company. And Table 2 shows no moderating effect of corporate governance on each variable regarding the company's sustainability. That means governance, which is proxied by independent commissioners and the proportion of the board of directors, cannot strengthen or weaken the variables of human capital, structural capital, physical capital, and relational capital in enhancing the sustainability of the company, which is proxied by the sustainable growth rate.

**Tabel 3**  
**Robustness Results**

Variables	Test Results
Human Capital -> Corporate Sustainability	-1,422 (0,049)
Structural Capital -> Corporate Sustainability	1,895 (0,008)
Physical Capital -> Corporate Sustainability	0,319 (0,035)
Relational Capital -> Corporate Sustainability	0,183 (0,131)
Corporate Governance -> Corporate Sustainability	-0,185 (0,472)
Human Capital * corporate governance -> corporate sustainability	-0,664 (0,489)
Structural Capital * corporate governance -> corporate sustainability	0,365 (0,584)
Physical Capital * corporate governance -> corporate sustainability	-0,234 (0,354)
Relational Capital * corporate governance -> corporate sustainability	-0,018 (0,912)

Table 3 shows the robustness test results through bootstrapping with 100 iterations. Bootstrapping is used to calculate confidence intervals and measure variables' influence in the research model. The results of the equation obtained based on Table 3 during the robustness test are :

$$\text{SGR} = -1,422\text{HCE} + 1,895\text{SCE} + 0,319\text{CEE} + 0,183\text{RCE} + e \quad (\text{i})$$

$$\begin{aligned} \text{SGR} = & -1,422\text{HCE} + 1,895\text{SCE} + 0,319\text{CEE} + 0,183\text{RCE} + \quad (\text{ii}) \\ & -0,185\text{CG} + -0,664(\text{HCE}*\text{CG}) - 0,365(\text{SCE}*\text{CG}) + \\ & -0,234(\text{CEE}*\text{CG}) + -0,018(\text{RCE}*\text{CG}) + e \end{aligned}$$

The results of the robustness test in Table 3 and the research findings indicate consistent results, namely that human capital, structural capital, and physical capital show both negative and positive effects. In contrast, relational capital has no impact on the company's sustainability. Similarly, the moderating effect of corporate governance cannot strengthen, weaken, or moderate intellectual capital's impact on a company's sustainability. The robustness results are similar to the initial testing of this model, which is valid and consistent.

### **The influence of human capital on corporate sustainability**

Human capital, which includes knowledge, skills, innovation, and the abilities of individual employees, plays a vital role. Human capital shows the added value of the funds

expended by the company for employees; companies with high labor costs will expect maximum returns from such investments (Tiwari, 2022). Table 2 and Table 3 show that human capital has a negative and significant impact on sustainable growth. This indicates that this research is irrelevant to the RBV theory, which states that an organization refers to human capital, namely knowledge, experience, and education sourced from the company's employees. This gives the business a competitive advantage, enabling the company to achieve sustainable performance.

This research aligns with the study conducted by (Citrahartani & Dewi, 2023). This research reveals that human capital has a significant negative impact on sustainable growth. This is likely due to a lack of knowledge, skills, innovation, motivation, and individual employee capabilities, which reduces the company's productivity and impacts business development. A large budget for salaries without adequate training can reduce employee and company productivity (Ratnadi et al., 2021). On the other hand, employees with poor attitudes and performance can hinder the company's performance.

Additionally, the negative impact of human capital on the company's sustainability is caused by the measurement of human capital based on the costs incurred for workers, such as wages, salaries, and other labor-related expenses, which are often measured quantitatively. However, this measurement is considered less effective in depicting the condition of a company's human capital, as it cannot evaluate to ensure that employees possess adequate knowledge, creativity, high skills, and operational abilities. The measurement is insufficient if it only uses cost-related indicators associated with employees (Florensia et al., 2022). In this research, the measurement of human capital is conducted using only monetary indicators, without considering non-financial aspects that could influence the superiority of human resources (Puspita & Wahyudi, 2021).

Unlike (Agustia et al., 2021; J. Xu & Wang, 2018) which mention that human capital has a significant effect on the rate of sustainable growth. This is in line with the research by (Al Frijat & Elamer, 2025), which found that the strategic value of human capital in enhancing sustainable practices positively affects the company's sustainability. In addition, the researchers used different measurement proxies, resulting in findings that human capital positively affects corporate sustainability. To enhance human capital, companies need to invest funds in practical training to improve the skills and abilities of employees, which is crucial for the company. In addition, providing bonuses and salary increases as rewards for achieving targets is also



necessary for high-performing employees, as appreciation to motivate and boost work morale.

The results of this study indicate the need for an evaluation of human capital management strategies to support the company's sustainability. Companies need to ensure that large expenditures on the workforce are balanced with practical training that enhances employees' skills, innovation, and motivation. The measurement of human capital also needs to be expanded based on monetary costs and non-financial aspects such as creativity and operational capabilities. In addition, reward policies, such as performance-based bonuses and salary increases, are essential for motivating employees. With this strategic step, human capital can become a competitive advantage contributing to the company's sustainability.

### **The influence of structural capital on corporate sustainability**

According to the RBV theory, companies that can optimally control intellectual capital, including structural capital, will gain additional benefits, enhance competitive advantage, and support optimal performance. Structural capital refers to the company's ability to manage software, hardware, databases, and organizational structures that support employees in performing their tasks (Gusmayani & Yanti, 2023). Structural capital within a company can facilitate and assist in knowledge integration, drive innovation in technology application, and strengthen the company's ability to compete globally and support sustainable growth (Kartikasari & Astuti, 2023). This research shows that structural capital impacts sustainable development, with effective management improving the financial sustainability of conventional banks in Indonesia. Research (Sayed & Nefzi, 2024) in their study on the financial sector in Saudi Arabia found that structural capital can influence the performance and sustainability of companies, and this country has also adopted International Financial Reporting Standards (IFRS) in its capital market. This aims to improve the transparency and consistency of financial reports and attract foreign investment. In this study, structural capital can have an impact because conventional banking companies in Indonesia have been able to implement processes and infrastructure needed to support employees' efforts to achieve intellectual performance, thereby optimizing sustainable performance. This is in line with the research (Gusmayani & Yanti, 2023; Mukherjee & Sen, 2019; J. Xu & Wang, 2018) which reveals that structural capital has a positive and significant impact on business sustainability. Unlike (Agustia et al., 2021; Florensia et al., 2022), this study shows that structural capital does not impact sustainable growth. This is consistent with the research by

(Chukwuekwu, 2023), which found that structural capital does not significantly affect the business, economic, and social sustainability of oil and gas companies in Nigeria.

The results of this study emphasize the importance of structural capital in supporting corporate sustainability. Optimally managed structural capital, such as infrastructure, technology, and organizational processes, can enhance innovation, efficiency, and global competitiveness. In the conventional banking sector in Indonesia, the management of structural capital has proven to support sustainable performance. International standards such as IFRS also serve as a strategic step for transparency and attracting foreign investment. Although the impact may vary across industries, companies need to adjust their structural capital management to specific needs to maximize their contribution to the company's sustainability.

### **The influence of physical capital on corporate sustainability**

Based on the resource-based view theory, efficient business companies can utilize and maximize resources, generating added value that impacts their performance. The use of company capital in current and fixed assets becomes the primary key in including physical capital (Gusmayani & Yanti, 2023). The ability to maintain and manage the resources owned by the company will be far better than acquiring resources from outside the organization. This research shows that physical capital significantly impacts the company's sustainability, and the results of this study are relevant to the RBV theory, thus illustrating that conventional banking companies in Indonesia have efficiently optimized resources derived from the capital owned by the company. Additionally, this indicates that a company still relies on available funds such as net profit and equity to increase added value and enhance the company's sustainability (Ozkan et al., 2017).

The results of this research are relevant to the findings of (Mukherjee & Sen, 2019; Wang, 2017) where studies conducted in India and China found that physical capital has a positive impact on business sustainability. The results of this study differ from the findings of (Gusmayani & Yanti, 2023) which prove that physical capital does not affect business sustainability, and in the survey (Florensia et al., 2022) which explains that physical capital has a significant adverse effect on the level of sustainable growth.

This research found that physical capital has a significant impact on business sustainability. In other words, conventional banks operating in Indonesia use their financial and physical assets efficiently to achieve higher corporate sustainability. Therefore, the banking

sector in Indonesia needs to utilize their economic and physical capital to achieve higher corporate performance.

### **The influence of relational capital on corporate sustainability**

The RBV theory explains that a company gains a competitive advantage if it effectively utilizes all its resources, referring to relational capital is the added value created by the entire organization with consumers, suppliers, and stakeholders. This research did not find any influence of relational capital on financial sustainability. This is not in line with the RBV theory, which suggests that the lack of influence of relational capital on the sustainability of the company is due to the company's failure to utilize or maximize relational capital. This is evidenced by the lowest value of relational capital compared to other intellectual capital, indicating that the company has not maximized its relationships with external parties and stakeholders. To address this issue, the company needs more time to build and strengthen external networks and stakeholders (Agustia et al., 2021). In addition, relational capital is also related to customer knowledge of the brand, loyalty, service, and others. In this study, relational capital is measured using the advertising and marketing costs incurred by the company. The marketing cost is likely not the right measure to assess relational capital in conventional banking companies. Customers or service users may consider other factors such as the quality of service or product and price. The findings of this study are consistent with (Agustia et al., 2021; Arif et al., 2023). This study shows that relational capital does not affect the level of sustainable growth and is in line with the findings of (Gusmayani & Yanti, 2023), which state that relational capital does not impact business performance, which also indicates no impact on the level of sustainable growth. And the results of this research are not relevant to the studies (Mukherjee & Sen, 2019; X. Xu et al., 2019) which state that relational capital positively affects sustainable financial performance.

This research found that relational capital does not significantly impact sustainable finance, indicating that the utilization of relationships with consumers, suppliers, and stakeholders is not optimal. The low value of relational capital suggests the need for the company to strengthen external networks and enhance stakeholder engagement. Additionally, using advertising and marketing costs as a measure of relational capital may be less appropriate, considering customers prioritize service quality and price. Companies must develop more

effective strategies to manage relational capital to support business sustainability and competitiveness.

### **The influence of intellectual capital on corporate sustainability with corporate governance as a moderating variable.**

The optimal management of intellectual capital application is inseparable from the role of corporate governance; its implementation is also a key step to achieving sustainable growth, as it can protect stakeholders from undesirable situations (Boediono & Lusmeida, 2022). Improving company performance through corporate governance is very important to optimize the use of all available resources and will impact the company's sustainability (Pratama et al., 2023). Good corporate governance practices can apply ethical concepts, allowing the company to control and monitor its activities to ensure they run smoothly, while also meeting the ever-changing needs of the business world for its success (Arifin, 2023). The board of directors bears the burden of tasks, powers, and responsibilities in managing the company, including setting strategic vision, formulating operational guidelines, and ensuring the vitality of corporate governance. Meanwhile, the main task of independent commissioners is to oversee the implementation of corporate governance (Germain et al., 2014). In reality, this study uses the proportion of the board of directors and independent commissioners as a representation of corporate governance, which does not have an impact as a moderating variable; in other words, it cannot strengthen or weaken the influence of intellectual capital. (human capital, structural capital, physical capital, and relational capital) towards the sustainability of the company. This occurs because variations in company characteristics can affect the performance effectiveness of each board of directors, which is caused by the number of board members themselves. This can lead to suboptimal resource utilization (C. H. Chen & Al-Najjar, 2012). And another factor is caused by investors as independent parties who focus on the company's sustainability, possibly making policies based on their perception that the company can survive optimally without being influenced by corporate governance (Jawak & Lubis, 2023). In essence, independent commissioners have a role similar to that of the board of commissioners, overseeing the directors' policies and providing advice on the company's operations to achieve the set objectives. However, in practice, the effectiveness of oversight and input from independent commissioners in companies is often less than optimal, potentially reducing the transparency of management accountability (Shafirah & Suwandi, 2024).

Thus, the small or large PDKI (proportion of independent commissioners) does not significantly impact sustainable growth. This is irrelevant to agency theory where the number of board of directors and independent commissioners does not affect the advancement of corporate sustainability (Rachmadanty & Agustina, 2023). This is suspected to be caused by independent commissioners being merely a formality to fulfill regulations, resulting in the supervisory function, which is the duty of the independent board of commissioners, becoming suboptimal (Amaliyah & Herwiyanti, 2019). The findings of this study are in line with research conducted by (Katoppo & Nustini, 2022; Siswanti & Cahaya, 2021; Tjahjadi et al., 2021) which shows that the independent board of commissioners and the board of directors do not have an impact on the level of sustainable growth. These findings are not in line with the research (Ahsan et al., 2021; Boediono & Lusmeida, 2022) which states that the presence of the board of directors and independent commissioners in a company has a significant impact on the company's sustainable growth.

This research implies that the size of the board of directors and the independent board of commissioners does not significantly impact the moderation of the correlation between intellectual capital and corporate sustainability. This indicates that although corporate governance theory suggests a positive influence, the oversight of independent commissioners in practice is often less than optimal. The cause may be related to the fulfillment of regulatory formalities, which reduces the effectiveness of supervision. The company needs to improve the quality of supervision and ensure that corporate governance runs more optimally to support business sustainability.

Tables 2 and 3 show that intellectual capital, including human and structural capital, can influence the financial sustainability of companies in Indonesia. Intellectual capital is significant for the development of the company. Microsoft is estimated to have 96% intangible assets in 2006, and intangible assets and R&D (research and development) can expand the United States (US) economy by up to 36%. Microsoft has successfully utilized intellectual capital to operate its business (Amaliyah & Herwiyanti, 2019).

## CONCLUSION

This study confirms the relevance of the Resource-Based View (RBV) theory in explaining the role of intellectual capital, particularly human capital, structural capital, and physical capital, in driving a company's competitive advantage. The results show that sound

and efficient intellectual capital management has a significant impact on a company's financial sustainability, reflecting its ability to achieve sustainable growth. This finding reinforces the RBV's view that unique, valuable, and difficult-to-imitate resources can be key to long-term success. However, this study found that corporate governance does not have a direct moderating effect on the relationship between intellectual capital and a company's sustainable growth rate. This suggests that the success of intellectual capital management is more influenced by internal efficiency than by external oversight mechanisms through governance.

The practical implication of this research is the need for companies to integrate intellectual capital management with a comprehensive strategy, including employee development, enhancing the utilization of physical assets, and optimizing relationships with customers and stakeholders. Moreover, there is a need to strengthen the governance role, particularly through effective oversight by independent commissioners, to support the company's sustainability. From an accounting perspective, these results indicate the need to adapt financial reporting standards, such as IFRS, to include non-financial information related to intellectual capital, thereby providing a more holistic view of the company's performance.

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