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GREEN INTELLECTUAL CAPITAL AND FIRM VALUE: EVIDENCE FROM GREEN HUMAN, STRUCTURAL AND RELATIONAL CAPITAL IN INDONESIAN MANUFACTURING COMPANIES

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Abstract

Sustainability has become a key objective for companies, encouraging environmentally friendly innovations through the development of green intellectual capital. In accordance with the resource-based view and stakeholder theories, effective management of green intellectual capital can enhance firm value by utilizing resources for stakeholders' benefit. This research aims to provide empirical evidence on the effect of green intellectual capital on firm value. As its novelty, this study examines each component of green intellectual capital individually to identify which component contributes to firm value. The sample comprised 162 manufacturing companies listed on the Indonesia Stock Exchange during 2022–2024 by using purposive sampling. The results indicate that green intellectual capital increases firm value, with green relational capital being the primary contributor. This is because companies engage stakeholders to ensure sustainability, leading to a positive perception of the company and consequently driving an increase in corporate value. These findings provide a theoretical basis for companies to develop sustainability-supporting resources, particularly by maintaining relationships and collaborating with stakeholders to achieve their sustainability objectives.

Keywords: Firm Value; Green Intellectual Capital; Green Human Capital; Green Structural Capital; Green Relation Capital.

Abstrak

Keberlanjutan telah menjadi tujuan utama bagi perusahaan dan mendorong inovasi ramah lingkungan melalui pengembangan modal intelektual hijau. Sesuai dengan teori berbasis sumber daya dan teori pemangku kepentingan, pengelolaan modal intelektual hijau yang efektif dapat meningkatkan nilai perusahaan melalui pemanfaatan sumber daya untuk kepentingan para pemangku kepentingan. Penelitian ini bertujuan memperoleh bukti empiris mengenai pengaruh modal intelektual hijau terhadap nilai perusahaan. Sebagai unsur kebaruan, penelitian ini menguji setiap komponen modal intelektual hijau secara terpisah untuk mengidentifikasi komponen yang berkontribusi terhadap nilai perusahaan. Sampel terdiri atas 162 perusahaan manufaktur terdaftar di BEI periode 2022–2024 menggunakan purposive sampling. Hasil penelitian menunjukkan bahwa modal intelektual hijau meningkatkan nilai perusahaan, dengan modal relasional hijau sebagai kontributor utama. Hal ini disebabkan oleh keterlibatan pemangku kepentingan dalam mewujudkan keberlanjutan yang membentuk persepsi positif terhadap perusahaan dan pada akhirnya meningkatkan nilai perusahaan. Temuan ini memberikan landasan teoretis bagi perusahaan untuk mengembangkan sumber daya yang mendukung keberlanjutan, khususnya dengan memelihara hubungan dan berkolaborasi dengan para pemangku kepentingan guna mencapai tujuan keberlanjutan.

Kata Kunci: Firm Value; Green Intellectual Capital; Green Human Capital; Green Structural Capital; Green Relation Capital.



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INTRODUCTION

Today, a company's business activities are no longer solely focused on profit; they must also foster positive social relationships and protect the environment (Ariani and Puspita, 2023; Al-amin and Herawaty, 2024). If companies ignore this, they will face negative perceptions from investors and the public. Take, for example, in 2024 the Directorate General of Environmental and Forestry Law Enforcement shut down three metal processing companies that were polluting the environment. Waste from their operations was dumped, polluting the environment and the waterways that serve as the community's water source (Betahita.id). Companies readily destroy the environment for the sake of corporate profits. It is examples like this that lead to negative perceptions of companies among the public and investors.

The government is currently placing great emphasis on the role of companies in protecting the environment. The Paris Agreement, which aims to achieve 0% carbon emissions by 2060, along with Indonesian government regulations regarding carbon taxes, waste management, and other measures, demonstrate the Indonesian government's commitment to sustainability. Additionally, investors today are gain drawn to organization engage environmental, social, and governance (ESG) considerations. (Agustina *et al.*, 2025). This interest led to the creation of the Srikehati Index, which includes companies committed to sustainability.

This backdrop has encouraged companies to become increasingly committed to sustainability. Companies are transforming their business operations to be more environmentally friendly, from using eco-friendly energy sources to creating eco-friendly products. All companies are striving to do this so they can be seen as highly environmentally conscious and attract the attention of investors (Rachmasari, Yusuf and Handarini, 2025). The fact that companies engage in similar activities makes it difficult to gain a competitive advantage. Therefore, to gain a competitive advantage by leveraging sustainability, companies are now seeking to develop Green Intellectual Capital.

Green intellectual capital can be explained as both tangible and intangible assets owned by a company embodiment of knowledge, innovation, technology, and expertise that guided the organization in maintaining viable environment and advance a competitive advantage (Yusliza *et al.*, 2019; Rachmasari, Yusuf and Handarini, 2025; Agustina *et al.*, 2025). The development of green intellectual capital will enhance the company's value because it possesses innovations and sustainability initiatives that its competitors do not have (Huang and Kung, 2011; Saud, Hasan and Saud, 2023).

Green intellectual capital dwell of three content: green human capital, green structural capital, and green relational capital (Dewi, Murwaningsari and Mayangsari, 2021; Yusliza *et al.*, 2019; Agustina *et al.*, 2025). Green human capital refers to employees' intelligence and experience related to sustainability; green structural capital refers to assets that can be utilized to support sustainability initiatives; and green relational capital related to a organization's relationships with stakeholders to ensure sustainability (Agustina *et al.*, 2025).

Green intellectual capital differs from value-added intellectual capital. Value-added intellectual capital focuses on improving financial statements so that they become more relevant and provide value to the company, while green intellectual

capital focuses on sustainability initiatives that are enhanced through knowledge and innovation (Ulum and Jati, 2016). This is what prompted the research on the influence of green intellectual capital on corporate value.

Research findings on the liaison betwixt green intellectual capital and firm value reveal inconsistent results. The result of (Hermawan *et al.*, 2024; Martínez-Falcó *et al.*, 2025; Wahyuni and Pramiana, 2025) state that a organization's green intellectual capital can increase corporate value and lead to competitive advantage. The company possesses resources that its competitors lack in terms of sustainability. Consequently, an organization that are able to develop green intellectual capital will gain a competitive edge that attracts the attention of investors.

Meanwhile, different results are shown (Astuti, Ambarwati and Wibowo, 2022; Rismawanti and Sumarna, 2025) indicating that green intellectual capital has no influence on corporate value. The organization's lack of attention to resources such as human capital, assets, and stakeholder relationships has caused these resources to be overlooked by investors. The company highlights its high profits to attract investors' attention. Green intellectual capital can also reduce corporate value (Adelisa and Mayangsari, 2025; Burhanuddin *et al.*, 2025). Intellectual capital is viewed as a burden by investors in the short term.

This inconsistency in results constitutes a research gap and, as a novelty in this research, the examination of green intellectual capital is divided into three components to identify which components can enhance corporate value. The research questions to be examined in this study pertain to the impact of green intellectual capital on firm value and the components of green intellectual capital that influence firm value. The objective of this study is to obtain empirical evidence of the impact of green intellectual capital on firm value and to obtain empirical evidence of the impact of green intellectual capital components that can enhance firm value.

LITERATURE REVIEW

Resource Based View Theory

This the concept as developed by (Barney, 1991) and serves as a executive scheme used to describe a organization's critical assets, which the entity can apply to gain continual competitive leverage (Ghozali 2021). The concept advocate that an organization pursuit of competitive leverage derived from the enrichment of its potentiality and asset. This concept feature the relevance of elevating a company's private asset, which are considered essential for structuring mechanism and attaining competing gain (Ghozali 2021).

Under this concept, organization are advised to develop unique and exact basis competency that enable them to outperform their advesary (Zhang *et al.*, 2023; Asiaei *et al.*, 2022). Alongside the cultivation of distinctive core competencies, it is imperative for company management to shared resources anent companies's training and the preservation of organization assets. Resources encompass the organization's resources, mechanism, characteristics, data, learning, and prospects that are engaged to realized corporate goals (Ghozali 2021). This concept is suitable for research related to green intellectual capital, as organization can develop their

assets—even if over employee or other resources—to enhance the affirmation of firm coverage (Suzan and Ramadhani, 2023).

Stakeholder Theory

The stakeholder theory developed by Freeman (1984) explains that a firm is not only liable to shareholders, but also along with to other stakeholders, such as employees, suppliers, customers, the government, and the neighborhood (Mahajan *et al.*, 2023). Stakeholder theory is crucial in advancing corporate social responsibility (CSR), fostering business sustainability, and facilitating the generation of shared value among organizations and their stakeholders (Parmar *et al.*, 2010; Mahajan *et al.*, 2023). Companies engage in dialogue with stakeholders through corporate social disclosure (Ghozali, 2021). This disclosure has an impact on the company's economy. For example, creditors who provide funding to companies in the form of loans will make it difficult for companies to obtain funding through loans if good relations are not maintained.

In this research, the notion of accountability to pertinent stakeholders manifests as a company's commitment to not solely prioritize financial gains but also to exhibit responsibility towards the environment and society. By addressing the requirement of stakeholders, companies can heighten their trustworthiness and foster public trust, ultimately guiding to amend stock returns. Companies produce sustainability reports as a response to the encouragement and expectations from interested parties, particularly external entities such as creditors, the community, suppliers, and other stakeholders invested in the company. This aims to increase the value of the company in the future (Palupi and Tjhang, 2025). Stakeholders can also obtain information related to the activities carried out by the company (Jati *et al.*, 2023). Non-financial activities are one of the factors that can determine investors' investment decisions (Kusno, Hartanto and Trilaksono, 2024). If companies have easy access to ESG and sustainability assessments, stock prices will tend to increase.

Green Intellectual Capital and Firm Value

Green intellectual capital is an indeterminate resource inherited by a firm in the form of know-how, scheme, and liaison with extraneous parties to support and promote the firm in carrying out its continuing action (Rachmasari, Yusuf and Handarini, 2025; Dewi, Murwaningsari and Mayangsari, 2021). (Huang and Kung, 2011) prescribed green intellectual capital as the know how, finesse, practice, and original policies taken by an organization to preserve the surrounding. Green intellectual capital is an asset retained by an organization to collaborate with in effective the green action that company utilization (Nurmalasari *et al.*, 2024).

Green intellectual capital dwells of three fundamentals: green human capital, green relational capital and green structural capital (Akter *et al.*, 2025; Sauid, Hasan and Sauid, 2023). Green human capital invokes the talent and know-how taken by a firm's attendant to sense and fulfil continuous habit for the firm (Agustina *et al.*, 2025; Yusliza *et al.*, 2019). Company representative is encouraged to contribute innovations that can support the company's sustainability initiatives. If the firm's representative possesses sufficient knowhow and competence in continuous behaviour, the company's sustainability activities and acknowledgment will improve in twain of quantity and quality (Al-amin and Herawaty, 2024; Yusliza *et*

al., 2019). Green human capital—or the embracement of green method—refers to action that contain guidance employees to enlarge their expertness and know-how in engage with managerial precondition for circumstances liable employment standard (Akter *et al.*, 2025). Worker is an importance element in guard that continuous action is successfully applied within the organization.

Green structure capital refers to a firm's capital resources in the form of infrastructure, device and other appliance that the company can utilize to maintain continuous action (Agustina *et al.*, 2025; Yuzliza *et al.*, 2019). This organization asset is not perpetually precisely inherited by the company but regularly happen from the mechanism of alter employees' notion or modification toward appropriate assets for obey continuous pledge (Yuzliza *et al.*, 2019). In addition to being supported by employee knowledge, sustainability efforts can also be supported by the capital the company possesses. The larger a company's green structure capital, the greater the quality and exceeding the company's sustainability disclosures. Green capital, also known as green policies or green technologies, refers to measures adopted by companies regarding their business activities that are designed to reduce environmental and social impacts (Akter *et al.*, 2025). Companies can begin by using environmentally friendly energy, adopting eco-friendly production equipment, and implementing eco-friendly technologies. This will help companies maintain sustainability and position them as role models for eco-friendly technologies.

Green relational capital can be defined as the relationships and networking connections between the company and its stakeholders—such as the government, the public, creditors, shareholders, and others—to assist in carrying out the organization's continuous exertion and achieving its continuous goals (Agustina *et al.*, 2025; Yuzliza *et al.*, 2019). Continuous exertion cannot liaison effectively beyond the backing and excellent liaison with all relation. The great network amidst the organization and its relation regarding sustainable, the improved the exertion acknowledge in the firm's report. Green capital, also established as forging green partnerships, ascribe to the involvement of stakeholders in helping companies protect the environment and support social well-being (Akter *et al.*, 2025). Companies cannot protect the environment and social well-being on their own without the support and assistance of stakeholders. These social norms drive the relationships or partnerships between stakeholders and companies in the relation with sustainability.

The three components of green intellectual capital must operate harmoniously and effectively to enhance the element and reliability of the instruction in the firm's sustainability report. In practice, dynamic and enhancing this green intellectual capital faces several treats and obstacles, such as company regulation, stakeholder prospect, and government requirements (Appiah *et al.*, 2023; Akter *et al.*, 2025). Firm that develop green intellectual capital will be able to increase their corporate value (Arif *et al.*, 2023; Chandra and Setyarini, 2024; Romadhon, Fitri and Sari, 2025). The utilization of valuable, scarce, and non-replicable corporate resources gives companies a competitive advantage, particularly in the area of sustainability, thereby increasing corporate value and boosting stock prices (Arif *et al.*, 2023; Chandra and Setyarini, 2024; Widiyaningsih, Kismet and Jati, 2024). These findings are supported by (Ericho and Amin, 2024; Ryad, Widyastuti and Thaib, 2024; Maryanti *et al.*, 2025) who state that companies capable of effectively leveraging

internal resources for sustainability can increase corporate value. This is because companies strive to create value through the utilization of internal capital unique to the company. Such utilization can build a competitive advantage.

Green intellectual capital can also reduce corporate value (Adelisa and Mayangsari, 2025; Burhanuddin *et al.*, 2025). Intellectual capital is viewed as a burden by investors in the short term. Employee knowledge development, or the acquisition or creation of the latest technology, reduces the returns received by investors in the brief term (Burhanuddin *et al.*, 2025; Ilham *et al.*, 2025). Investors prefer short-term gains over long-term benefits. The results of green intellectual capital are not immediately apparent in the short term but become evident in the future. Green intellectual capital has no effect on corporate value (Astuti, Ambarwati and Wibowo, 2022; Rismawanti and Sumarna, 2025). The company's lack of attention to resources such as human capital, assets, and stakeholder relationships has caused these resources to be overlooked by investors. Investors are provided with more financial information and expect high returns from companies. Therefore, companies will prioritize financial statements that reflect their financial condition so that investors' expected returns can be met.

According to RBV and Stakeholder theory, the utilization of a company's internal resources in fostering sustainability is key. The knowledge and innovation possessed by company employees, along with the use of technology to maintain sustainability, are the most strategic steps for creating sustainable corporate value. Maximizing the utilization of these resources will enhance corporate value.

Considering the components of green intellectual capital, green human capital can influence corporate value (Arif *et al.*, 2023). Leveraging employees' knowledge and innovation—which are difficult for other companies to replicate—can serve as the company's primary tool to enhance competitive advantage and increase corporate value (Li, Bhutto and Waris, 2023; Kumar *et al.*, 2025; Ningrum and Sirait, 2026). Green intellectual structured capital can also enhance corporate value (Kumar *et al.*, 2025). Environmentally friendly technologies that are not possessed by other companies give the company a competitive edge and make it appear valuable to investors (Kusumaningrum and Astuti, 2024; Ningrum and Sirait, 2026). The final component, green relational capital, can also increase corporate value (Kusumaningrum and Astuti, 2024). Maintaining good relationships with stakeholders in upholding sustainability adds value to the company because it helps meet stakeholder expectations (Kusumaningrum and Astuti, 2024). Established from theory before, the hypothesis compose is:

- H1 Green intellectual capital can maximize the company's value.**
- H1a Green human capital can maximize the company's value.**
- H1b Green structured capital can maximize the company's value.**
- H1c Green relation capital can maximize the company's value.**

According to the augmentation of the hypothesis above, the research framework can be presented in the figure below.

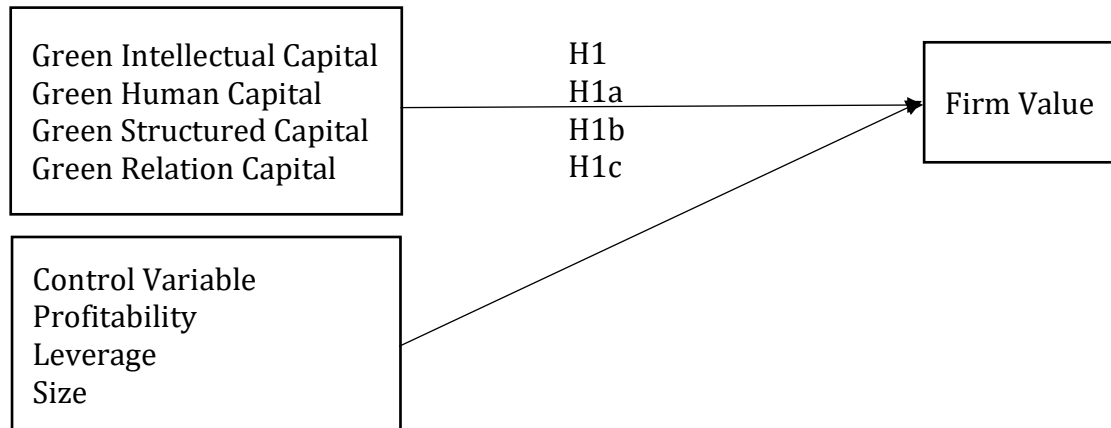


Figure 1. Research Framework

RESEARCH METHODOLOGY

This study was focused using manufacturing companies recorded on the Indonesia Stock Exchange from 2022 to 2024. Overall 162 companies were elected as the research sample using purposive sampling. The hypotheses were tested using panel data regression analysis. The following outlines the sample selection procedure.

Table 1. Sample Selection Procedure

No	Criteria	Number of Companies
1	Companies recorded on the Indonesia Stock Exchange as manufacturing sector during the research period	266
2	Financial statements that do not term on end year	(4)
3	Firm that did not publicize sustainability reports	(12)
4	Firm address a loss	(88)
Number of Sample		162
Period of study		3
Number of companies used		486

Firm Value

A company's value can be measured using Tobin's Q. Tobin's Q indicates the current market value relative to the return expected by investors (Risqi, Ningsih and Iلمي, 2024). The over the firm value, the superior to the present market value. Based on study (Friske, Hoelscher and Nik, 2022), the computation using the subsequent measurement:

$$FV = \frac{MVE + PS + DEBT}{\text{Book Value of Asset}} \quad (1)$$

Green Intellectual Capital

The computation of green intellectual capital in this inquiry cite to (Bangun *et al.*, 2024) which include of three essential fundamental: green structural capital, green human capital, , and green relational capital. Each index is assigned an amount of 1 if stated in sustainability report, and a score of 0 if not disclosed. The total computation using the subsequent measurement:

$$GIC = \frac{\text{Total items are disclose}}{\text{Maximum total score}} \quad (2)$$

This research utilized the consecutive control variables: profitability, measured using ROA; leverage, measured using the debt-to-asset ratio; and firm size, assesment using the natural logarithm of total assets. The research model is presented as follows.

$$FV = \alpha + \beta_1 GIC + \beta_2 PROFIT + \beta_3 LEV + \beta_4 SIZE + \varepsilon \quad (3)$$

$$FV = \alpha + \beta_1 GHC + \beta_2 GSC + \beta_3 GRC + \beta_4 PROFIT + \beta_5 LEV + \beta_6 SIZE + \varepsilon \quad (4)$$

Before testing the hypotheses, the research data were tested for multicollinearity and heteroscedasticity. Based on the test results, there were no issues with multicollinearity or heteroscedasticity, as shown in the following table.

Table 2. Multicollinearity Result

	Model 1		Model 2	
	Tolerance	VIF	Tolerance	VIF
GIC	0.957	1.045		
GHC	-	-	0.939	1.064
GSC	-	-	0.917	1.090
GRC	-	-	0.872	1.147
PROF	0.958	1.043	0.983	1.017
LEV	0.924	1.082	0.715	1.398
SIZE	0.901	1.110	0.708	1.413

GIC = Green Intellectual Capital, GHC= Green Human Capital,
GSC = Green Structured Capital, GRC = Green Relation Capital,
PROFIT = Profitability, LEV = Leverage, SIZE = Firm Size

According to the outcome of the multicollinearity test, it can be defined that there is no multicollinearity issue among the variables in either Model 1 or Model 2. A tolerance value greater than 0.1 and a VIF value lower than 10 express the absence of multicollinearity.

Table 3. Heteroscedasticity Result

	Model 1	Model 2
Prob	0.8345*	0.7349*

*Significant 0.05

According to the outcome of the heteroscedasticity test, it can be defined that there is no issue of heteroscedasticity, as the probability value is above 0.05. In panel

data regression, a choice must be made between fixed, common, or random effects. Based on the results of the Chow test, which determines the best model among the fixed-effects model and the common-effects model, the fixed-effects model was found to be the best. The following table shows the results of the Chow test.

Table 4. Chow Result

	Model 1	Model 2
Prob	0.0000*	0.0000*
*Significant 0.01; 0.05;0.1		

A p-value below 0.01 or 0.05 demonstrates that the best model for this research is the fixed-effects model. The next step is to test the fixed-effects model against the random-effects model using the Hausman test. A probability value below 0.01 or 0.05 indicates that the best model for this study is the fixed-effects model. Therefore, this study will use the fixed-effects model. The following are the results of the Hausman test.

Tabel 5. Hausman Result

	Model 1	Model 2
Prob	0.0001*	0.0001*
*Significant 0.01; 0.05;0.1		

RESULT AND DISCUSSIONS

The following are the descriptive statistics for the variables used: firm value, green intellectual capital, profitability, leverage, and firm size.

Table 6. Descriptive Statistic

Variable	N	Minimum	Maximum	Mean	Deviation Standard
FV	486	-0,264735	11,178447	1,169295	1,341605
GIC	486	0,222222	1	0,601509	0,185195
GHC	486	0	1	0.534979	0.225514
GSC	486	0.125	1	0.711677	0.228123
GRC	486	0	1	0.492181	0.217342
PROFIT	486	0,000638	0,331943	0,077189	0,063509
LEV	486	0,032661	0,927938	0,367015	0,191535
SIZE	486	24.9749	32.7637	28.7640	1.5701
FV = Firm Value, GIC = Green Intellectual Capital, GHC= Green Human Capital, GSC = Green Structured Capital, GRC = Green Relation Capital, PROFIT = Profitability, LEV = Leverage, SIZE = Firm Size					

The outcome of the descriptive statistics display, on average, companies have now begun to attempt to develop green intellectual capital. This is evident from the average disclosure rate of green intellectual capital among the companies in the sample, which stands at 0.6016—meaning 60.16% of companies reported on their

development efforts related to green intellectual capital. Although this has not yet reached a perfect score, it is a positive sign of how manufacturing companies in Indonesia are striving to enhance their sustainability initiatives. The conclusion of the Pearson correlation analysis are presented in Table 7.

Table 7. Pearson Correlation Result

	FV	GIC	GHC	GSC	GRC	PROFIT	DAR	SIZE
FV	1							
GIC	0.1175 0.0095*	1						
GHC	0.0604 0.1835	0.7629 0.0000	1					
GSC	0.1188 0.0088*	0.8975 0.0000	0.5136 0.0000	1				
GRC	0.0967 0.0330*	0.7722 0.0000	0.4439 0.0000*	0.5434 0.0000	1			
PROFIT	0.4846 0.0000	0.0926 0.0413	0.0457 0.3247	0.1366 0.0025	0.0052 0.9097	1		
LEV	0.0089 0.8448	0.0804 0.0765	0.0851 0.0608	0.0550 0.2265	0.0673 0.1382	-0.1521 0.0008	1	
SIZE	-0.0025 0.9561	0.2832 0.0000	0.2554 0.0000	0.2372 0.0000	0.2061 0.0000	0.1002 0.0272	0.2127 0.0000	1

FV = Firm Value, GIC = Green Intellectual Capital, GHC= Green Human Capital, GSC = Green Structured Capital, GRC = Green Relation Capital, PROFIT = Profitability, LEV = Leverage, SIZE = Firm Size

According to the correlation outcome, there is a positive relationship between green intellectual capital and firm value. This indicates that companies that develop their internal green intellectual capital can increase their firm value. The utilization of environmentally friendly knowledge, innovation, and technology gives companies a competitive advantage and can be used to increase firm value. The results of the hypothesis testing are presented in Table 8.

According to the results of the hypothesis test for Model 1, which examined the effect of green intellectual capital on firm value, the coefficient value was 0.6616 and the significance level was 0.027, which is below 0.05. This indicates that H1—which states that green intellectual capital can increase firm value—is accepted. Corporate value can be enhanced by utilizing green intellectual capital, through the use of the company's internal resources to improve sustainability initiatives. Employees who possess values and knowledge regarding sustainability, contribute innovations for sustainability, along with the company's environmentally friendly assets and good relationships with stakeholders, will provide the company with a competitive advantage in terms of sustainability, ultimately leading to an increase in corporate value (Arif *et al.*, 2023; Chandra and Setyarini, 2024). These findings align with those of (Dewi, Murwaningsari and Mayangsari, 2021; Suhardjo and Khomsiyah, 2025), who state that developing green intellectual capital within a company will increase corporate value.

Table 8. Hypothesis Result

Model 1				Model 2	
	Predictive	Coeff	P value	Coeff	P value
GIC	+	0.6616	0.027***		
GHC	+			0.2338	0.934
GSC	+			0.0648	0.829
GRC	+			0.6175	0.039***
PROFIT	+	10.5686	0.000***	10.7181	0.000***
LEV	+/-	0,6932	0.016***	0.6962	0.016***
SIZE	+	-0.0751	0.018***	-0.7442	0.020***
Cons		1.18671		1.8714	
F			41.10		27.79
Prob			0.000***		0.000***
Adj R Square			0.2485		0.2489

***Signifikan 1%, 5%

FV = Firm Value, GIC = Green Intellectual Capital, GHC= Green Human Capital, GSC = Green Structured Capital, GRC = Green Relation Capital, PROFIT = Profitability, LEV = Leverage, SIZE = Firm Size

These results are constant with Resource-Based View (RBV) and stakeholder theory; the use of a organization's internal capital (employees, assets) to help the company achieve its goals and gain a competitive advantage can increase corporate value. Intellectual capital is also a core value for value creation (Barney, 1991). Furthermore, companies that prioritize the interests of stakeholders regarding sustainability will naturally enhance stakeholder expectations and thereby increase corporate value.

Other components, such as green human capital and green structural capital, show no influence on corporate value. Significance levels above 0.05 indicate that hypotheses H1a and H1b are rejected. In Indonesia today, there are still few employees with expertise in environmental conservation and sustainability, and they lack sufficient competencies. Additionally, few manufacturing companies in Indonesia currently use environmentally friendly materials, processes, and packaging. This is why green human capital and green structured capital do not influence corporate value.

CONCLUSION

According the results of hypothesis testing to examine the influence of green intellectual capital on firm value, the findings indicate that companies that develop intellectual capital related to sustainability and utilize their existing resources for sustainability will be able to increase their firm value. Stakeholders will view positively companies that are able to enhance a competitive advantage through such intellectual capital. Of the three fundamentals of green intellectual capital, only green relational capital has an impact on corporate value. If a company maintains good relationships with stakeholders and collaborates effectively in upholding sustainability, it can enhance corporate value. These relationships are very difficult for competitors to replicate, thereby enhancing the company's competitive

advantage. Based on these research findings, companies—particularly their management—can begin to create supply chains that prioritize the environment. Good relationships from suppliers to consumers can lead to positive perceptions from the public and investors.

This study also offers theoretical implications for companies to leverage their internal capital—particularly from employees, operational assets, and relationships with stakeholders—to ensure sustainability. Based on these findings, such utilization can become a competitive advantage over rival firms. High corporate value will be achieved due to these unique advantages not possessed by competitors. The limitation of this study lies in the fact that the sample is limited to manufacturing companies and cannot be generalized to companies in other sectors; therefore, future research could include companies with the highest levels of pollution, such as mining and energy companies. Additionally, the determination of green intellectual capital is based solely on its disclosure; however, the value of green intellectual capital could be assessed through observation and the distribution of questionnaires.

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APPENDIX

Components of green intellectual capital	Disclosure
Green Human Capital	The company's human resources are beneficial and commit to environmental conservation.
	The company's human resources possess adequate competencies in environmental stewardship.
	The company's human resources give high-quality services and products that support environmental conservation.
	The company is willing to assist and collaborate in protecting the environment.
	Managers backing employees in carrying out their duties to protect the environment.
Green Structural Capital	The company has a high-level environmental management scheme.
	The company has a high proportion of management staff in environmental roles relative to the total number of employees.
	The company makes adequate investments in environmental preservation facilities.
	The company has established comprehensive environmental regulations
	The overall operational processes for environmental preservation within the company run smoothly.
	The company has formed a special committee to advance key environmental protection issues.
	The company has established a benefit scheme for the achievement of

Green Relational Capital	environmental objectives.
	The company has a beneficial environmental knowledge management system.
	The company designs products and services in line with consumer demand for environmental sustainability.
	Consumers are satisfied with the eco-friendly design of products and services.
	The company maintains good relationships with suppliers regarding environmental protection.
	The company maintains good relationships with customers who care about environmental protection.
	The company collaborates with other strategic partners (such as the government) who are committed to environmental protection.

Source: (Bangun *et al.*, 2024)