

## THE EFFECT OF GREEN INTELLECTUAL CAPITAL AND SUSTAINABILITY REPORTING DISCLOSURE ON FINANCIAL PERFORMANCE

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### *Abstrak*

Penelitian ini bertujuan untuk memperoleh bukti empiris mengenai pengaruh green intellectual capital, pengungkapan sustainability report terhadap kinerja keuangan. Populasi penelitian ini adalah perusahaan sektor properti dan real estate yang terdaftar di Bursa Efek Indonesia periode 2021-2025 dengan jumlah sampel 85 perusahaan. Teknik pengambilan sampel menggunakan metode *purposive sampling* sehingga diperoleh data sebanyak 338 sampel penelitian. Teknik analisis data menggunakan analisis regresi linear berganda dan diolah dengan menggunakan bantuan *software* SPSS versi 24. Hasil penelitian menunjukkan bahwa green intellectual capital tidak berpengaruh terhadap kinerja keuangan, sedangkan pengungkapan sustainability report disclosure berpengaruh positif terhadap kinerja keuangan  
**Kata Kunci:** Green Intellectual Capital, Pengungkapan Sustainability Report, Kinerja Keuangan.

### *Abstract*

*This study aims to obtain empirical evidence regarding the influence of green intellectual capital and sustainability reporting disclosure on financial performance. The study population consists of property and real estate sector companies listed on the Indonesia Stock Exchange for the 2021–2025 period, with a sample size of 85 companies. Purposive sampling was employed, resulting in a total of 338 data samples. Data analysis was conducted using multiple linear regression with the aid of SPSS software (version 24). The results indicate that green intellectual capital has no effect on financial performance, whereas sustainability reporting disclosure has a positive effect on financial performance.*

**Keywords:** *Green Intellectual Capital, Sustainability Reporting Disclosure, Financial Performance*

## **A. INTRODUCTION**

Although the property and real estate industry occupies a strategic position within Indonesia's economy, firms operating in this space continue to grapple with earnings that swing alongside broader economic conditions and shifting buyer demand. This trend was evident in the first quarter of 2025, when a number of real estate companies reported significant declines in net income, including PT Bumi Serpong Damai Tbk, which fell by 77%; PT Summarecon Agung Tbk, which fell by 46.02%; and PT Pantai Indah Kapuk Dua Tbk, which experienced a decline of 59.48% (Handoyo, 2025). At the same time, construction and property development are widely recognized as major contributors to environmental strain, accounting for roughly 40% of the world's carbon dioxide output (Carlin, 2022). These dual pressures, economic and environmental, compel real estate companies to not only focus on maintaining financial performance but also to embed sustainability principles across all business lines, making the ability to manage resources in an environmentally responsible manner and to communicate sustainability information crucial.

Green intellectual capital captures one dimension of this shift, referring to the pool of knowledge, organizational capability, structural arrangements, and stakeholder relationships a firm builds around environmentally conscious operations (Chen, 2008). Firms that put these intangible assets to good use tend to unlock efficiency gains, spark innovation, and move closer to genuinely sustainable business models. Beyond managing internal capabilities, firms also carry a responsibility to keep external stakeholders informed of their sustainability progress, typically through sustainability reports that disclose economic, environmental, and social performance and, by extension, signal the firm's broader commitment to responsible business conduct (Pratiwi et al., 2022).

Existing studies examining how green intellectual capital and sustainability reporting disclosures relate to financial performance have nonetheless produced mixed conclusions, which motivates this study to revisit both relationships within property

and real estate firms listed on the Indonesia Stock Exchange (BEI) over the 2021–2025 window.

## **THEORETICAL REVIEW AND HYPOTHESIS DEVELOPMENT**

### **Resource-Based View**

The Resource-Based View holds that a company's competitive advantage and performance result from the way it manages its internal resources, both tangible and intangible, provided that these resources are valuable, scarce, difficult to imitate, and cannot be replaced by alternatives. Knowledge, organizational capabilities, and intellectual resources fall into the category of intangible resources referred to in this theoretical framework (Barney, 1991).

### **Stakeholder Theory**

Stakeholder theory frames organizational survival as contingent not just on shareholder interests but on how well a firm addresses the concerns of every party its operations touch. This obliges firms to operate openly and furnish stakeholders with pertinent information as evidence of accountability (Freeman, 1983).

### **Financial Performance**

Financial performance captures how effectively a firm its resources into earnings, and it commonly serves investors and creditors as a yardstick for gauging a company's outlook and overall financial health.

### **Green Intellectual Capital**

(Chen, 2008) defines green intellectual capital as a combination of knowledge, organizational competencies, organizational structure, and corporate networks aimed at supporting environmentally friendly business practices. When managed effectively, these intangible assets enable companies to drive innovation, improve resource efficiency, and create more environmentally friendly business processes (Mulatsih, 2025). The efficiency and added value generated from such management, in turn, have the potential to be reflected in improved corporate financial performance (Hasan et al., 2025). Thus, the proposed hypothesis is:

H1: Green Intellectual Capital affects Financial Performance

### Sustainability Reporting Disclosure

Sustainability reporting disclosure functions as a channel through which firms make their economic, environmental, and social performance visible to the public (Pratiwi et al., 2022). Fuller disclosure gives stakeholders a sharper view of what a company is doing and where its commitments lie, which tends to build investor and creditor confidence, strengthen corporate reputation, and factor into how those parties make decisions (Buallay, 2020). These dynamics can eventually feed through into stronger financial performance. Based on this discussion, the proposed hypothesis is:

H2: Sustainability reporting disclosure affects financial performance

### B. METHOD [Times New Roman 12, Bold]

This research relies on a quantitative design built around numerical data drawn from secondary sources, specifically the annual reports and sustainability reports of property and real estate companies. Out of 85 property and real estate companies listed on the Indonesia Stock Exchange (IDX) between 2021–2025, the sample was narrowed through purposive sampling using two screening criteria: 1) property and real estate companies listed on the IDX during the 2021–2025 period; 2) the firm published both annual reports and sustainability reports across that same window. Based on these criteria, 338 observations were obtained and used for further data analysis.

**Tabel 1. Pengukuran Variabel**

| Variable                                 | Indicator                                                                       | References                   |
|------------------------------------------|---------------------------------------------------------------------------------|------------------------------|
| Green Intellectual Capital (X1)          | $GIC = \frac{\text{Total item yang diungkapkan}}{\text{Total indikator}}$       | (Hasan et al., 2025)         |
| Sustainability Reporting Disclosure (X2) | $SRD = \frac{\text{Total items disclosed}}{\text{Number of items in GRI 2021}}$ | (Azzahra & Mulyandini, 2025) |
| Financial Performance (Y)                | $ROA = \frac{\text{Laba setelah pajak}}{\text{Total aset}}$                     | (Septiana & Puspita, 2024)   |

### C. RESULTS AND DISCUSSIONS [Times New Roman 12, Bold]

#### Descriptive Statistics

**Tabel 2. Descriptive Statistics**

| Descriptive Statistics              |     |        |       |         |                |
|-------------------------------------|-----|--------|-------|---------|----------------|
|                                     | N   | Min    | Max   | Mean    | Std. Deviation |
| Green Intellectual Capital          | 338 | 0,063  | 0,813 | 0,32489 | 0,141269       |
| Sustainability Reporting Disclosure | 338 | 0,111  | 0,872 | 0,49423 | 0,142010       |
| Financial Performance               | 338 | -0,455 | 0,428 | 0,01407 | 0,078066       |
| Valid N (listwise)                  | 338 |        |       |         |                |

Source: Data processed, 2026

Table 2 shows that green intellectual capital has a minimum value of 0.063, a maximum value of 0.813, with a mean value of 0.32489 and a standard deviation of 0.141269. The sustainability reporting disclosure variable has a minimum value of 0.111, a maximum value of 0.872, with a mean value of 0.49423 and a standard deviation of 0.142010. The Financial Performance variable has a minimum value of -0.455, a maximum value of 0.428, with a mean of 0.01407 and a standard deviation of 0.078066.

### Classical Assumption Test

#### Normality Test

**Tabel 3. Hasil Uji Normalitas**  
**One-Sample Kolmogorov-Smirnov test**

|                                  |                | Unstandardized Residual |
|----------------------------------|----------------|-------------------------|
| N                                |                | 281                     |
| Normal Parameters <sup>a,b</sup> | Mean           | 0,0000000               |
|                                  | Std. Deviation | 0,03101890              |
| Most Extreme Differences         | Absolute       | 0,049                   |
|                                  | Positive       | 0,049                   |
|                                  | Negative       | -0,036                  |
| Test Statistic                   |                | 0,049                   |
| Asymp. Sig. (2-tailed)           |                | 0,200 <sup>c,d</sup>    |

Source: Data processed, 2026

Based on table 3, the Asymp. Sig. (2-tailed) is 0.200 (Sig. > 0.05), therefore, it can be concluded that the regression model residuals are normally distributed.

#### Multicollinearity Test

**Tabel 4. Hasil Uji Multikolinearitas**

| Coefficients <sup>a</sup> |            |                         |       |
|---------------------------|------------|-------------------------|-------|
| Model                     |            | Collinearity Statistics |       |
|                           |            | Tolerance               | VIF   |
| 1                         | (Constant) |                         |       |
|                           | GIC        | 0,925                   | 1,081 |
|                           | SRD        | 0,925                   | 1,081 |

Source: Data processed, 2026

Based on table 4, all variables have a tolerance value  $> 0.10$  and a VIF value  $< 10.00$ . This shows that there is no multicollinearity in the research regression model.

### Heteroscedasticity Test

**Tabel 5. Hasil Uji Heteroskedastisitas**

| Model |                                     | t     | Sig   |
|-------|-------------------------------------|-------|-------|
| 1     | (Constant)                          | 2,384 | 0,018 |
|       | Green Intellectual Capital          | 1,699 | 0,091 |
|       | Sustainability Reporting Disclosure | 0,178 | 0,859 |

Source: Data processed, 2026

Based on the results of the Geljser in table 5, all variables have Sig. values greater than 0.05. This indicates that there is no heteroscedasticity in the regression model.

### Autocorrelation Test

**Tabel 6. Hasil Uji Autokorelasi**

| Model Summary <sup>b</sup> |               |
|----------------------------|---------------|
| Model                      | Durbin-Watson |
| 1                          | 2,022         |

Source: Data processed, 2026

Based on the results on table 6, a Durbin-Watson value of 2,022. Based on the Durbin-Watson table ( $K = 2$ ,  $n = 281$ ), the results  $dU < DW < 4 dU$  ( $1,811 < 2,022 < 2,189$ ) was obtained. Thus, it can be concluded there is no autocorrelation in the research model.

### Multiple Linear Regression Test

**Tabel 7. Hasil Analisis Regresi Linear Berganda**

| Coefficients <sup>a</sup> |                                     |                             |            |                           |
|---------------------------|-------------------------------------|-----------------------------|------------|---------------------------|
| Model                     |                                     | Unstandardized Coefficients |            | Standardized Coefficients |
|                           |                                     | B                           | Std. Error | Beta                      |
| 1                         | (Constant)                          | -0,002                      | 0,004      |                           |
|                           | Green Intellectual Capital          | -0,003                      | 0,018      | -0,009                    |
|                           | Sustainability Reporting Disclosure | 0,037                       | 0,015      | 0,148                     |

Source: Data processed, 2026

Based on Table 7, the regression equation obtained is:

$$FP = - 0.002 - 0,003GIC + 0,037SRD + e$$

Based on the regression equation, it can be interpreted that:

1. The constant of -0,002, implies that financial performance would sit at -0,002 if both green intellectual capital and sustainability reporting disclosure were zero.
2. The coefficient of -0,003 attached to green intellectual capital suggests that a one-unit rise in this variable is associated with a 0,003 decline in financial performance.
3. The coefficient of 0,037 for sustainability reporting disclosure indicates that a one-unit increase in this variable corresponds to a 0,037 rise in financial performance, again holding other factors constant.

### Hypothesis Test

#### F Test

Tabel 8. Hasil Uji F

| Anova <sup>a</sup> |            |                |     |             |       |                    |
|--------------------|------------|----------------|-----|-------------|-------|--------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F     | Sig                |
| 1                  | Regression | 0,004          | 2   | 0,002       | 3,019 | 0,040 <sup>b</sup> |
|                    | Residual   | 0,197          | 277 | 0,001       |       |                    |
|                    | Total      | 0,201          | 279 |             |       |                    |

Source: Data processed, 2026

The F-test in Table 8 returns a value of 3.019 at a significance level of 0.040, below the 0.05 cutoff, confirming that the model holds up statistically: green intellectual capital and sustainability reporting disclosure, taken together, meaningfully account for movement in financial performance.

### R<sup>2</sup> Determination Test

**Tabel 9. Hasil Uji Koefisien Determinasi R<sup>2</sup>**

| Model Summary <sup>b</sup> |                    |          |                   |                            |
|----------------------------|--------------------|----------|-------------------|----------------------------|
| Model                      | R                  | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1                          | 0,146 <sup>a</sup> | 0,021    | 0,014             | 0,02664                    |

Source: Data processed, 2026

Table 9 places the Adjusted R-Square at 0.021, meaning green intellectual capital and sustainability reporting disclosure together account for roughly 2,1% of the variation in financial performance, leaving the remaining 97,9 % attributable to factors outside this study's scope.

### Parsial Test (t)

**Tabel 8. Hasil Uji t  
Coefficients<sup>a</sup>**

| Model |                                     | t      | Sig   |
|-------|-------------------------------------|--------|-------|
| 1     | (Constant)                          | -0.515 | 0,607 |
|       | Green Intellectual Capital          | -0.144 | 0,885 |
|       | Sustainability Reporting Disclosure | 2.411  | 0,017 |

Source: Data processed, 2026

Based on table 10, the effects of each hypothesis can be summarized as follows:

1. Green intellectual capital returns a t-value of -0.0144 with a significance level of  $0.885 > 0.05$ , so **H1 is rejected**: the variable shows no measurable effect on financial performance. This is likely because the implementation of green intellectual capital demands substantial upfront investment, with returns that only materialize over a longer horizon.
2. Sustainability reporting disclosure, by contrast, posts a t-value of 2.411 at a significance level of  $0.017 < 0.05$ , so **H2 is accepted**: disclosure exerts a positive and significant effect on financial performance. This suggests that firms offering their sustainability disclosures tend to earn greater stakeholder trust, which subsequently feeds into stronger financial performance.

## D. CONCLUSIONS

Based on the results of the analysis and discussion, green intellectual capital does not register a measurable effect on financial performance, suggesting that current efforts to manage this resource have yet to translate into short-term financial gains. This Sustainability reporting disclosures have been shown to have a positive and significant relationship with financial performance suggests that thorough disclosure practices help firms earn stakeholder confidence and backing, which in turn supports stronger financial outcomes.

This study is not without a number of limitations, including the model's relatively limited ability to explain variations in financial performance, a sample scope that focuses solely on the property and real estate sectors, and a study period that covers only the years 2021–2025.

## **E. SUGGESTIONS**

Researchers building on this work might consider incorporating additional variables, such as leverage, firm size, firm age, or moderating and mediating factors, to construct a model with greater explanatory reach over financial performance. Broadening the sample across industries and extending the observation period beyond 2021-2025 would likewise strengthen future findings.

## **REFERENCES [Times New Roman 12, Bold]**

- Azzahra, F., & Mulyandini, V. C. (2025). *Unlocking Sustainable Firm Performance : The Influence of Sustainability Reporting , Green Accounting , and Intellectual Capital*. 7(4).
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management (Southern Management Association)*, 17(1), 99–120. <https://doi.org/https://doi.org/10.1177/014920639101700108>
- Buallay, A. (2020). Sustainability reporting and firm's performance: Comparative study between manufacturing and banking sectors. *International Journal of Productivity and Performance Management*, 69(3), 431–445. <https://doi.org/10.1108/IJPPM-10-2018-0371>
- Carlin, D. (2022). *40% of emissions come from real estate; here's how the sector can decarbonize*. UN Environment Programme. [https://www.unepfi.org/themes/climate-change/40-of-emissions-come-from-real-estate-heres-how-the-sector-can-decarbonize/?utm\\_source=chatgpt.com](https://www.unepfi.org/themes/climate-change/40-of-emissions-come-from-real-estate-heres-how-the-sector-can-decarbonize/?utm_source=chatgpt.com)

- Chen, Y. (2008). *The Positive Effect of Green Intellectual Capital on Competitive Advantages of Firms*. 271–286. <https://doi.org/10.1007/s10551-006-9349-1>
- Freeman, R. E. (1983). Stockholders and Stakeholders : A New Perspective on Corporate Governance. *California Management Review*, XXV.
- Handoyo. (2025). *Emiten Properti Lesu pada Kuartal I-2025, Ini Prospek dan Rekomendasi Sahamnya*. Kontan.Co.Id. <https://investasi.kontan.co.id/news/emiten-properti-lesu-pada-kuartal-i-2025-ini-prospek-dan-rekomendasi-sahamnya>
- Hasan, M. H. N., Zamzam, I., Ali, I. M. A., & Zainuddin, Z. (2025). Peran Good Corporate Governance dalam Memoderasi Hubungan antara Green Accounting, Environmental Performance, dan Green Intellectual Capital terhadap Financial Performance. *Jesya*, 8(2), 1208–1228. <https://doi.org/10.36778/jesya.v8i2.2076>
- Mulatsih, S. N. (2025). Green intellectual capital and eco-innovation in shaping sustainable financial performance: Evidence from Indonesia. *Social Sciences and Humanities Open*, 11(November 2024), 101345. <https://doi.org/10.1016/j.ssaho.2025.101345>
- Pratiwi, A., Laila, K. Z., & Anondo, D. (2022). Pengaruh Pengungkapan Sustainability Report Terhadap Kinerja Keuangan Perusahaan. *Arsi: Jurnal Akuntansi Terapan Dan Bisnis*, 10(2), 60–71. <https://doi.org/10.37676/ekombis.v10i2.2272>
- Septiana, D., & Puspita, L. M. N. (2024). Journal of Auditing Finance and Forensic Accounting. *Journal of Auditing Finance and Forensic Accounting*, 4(2), 45–60. <https://www.researchgate.net/publication/334366513>