



## Corporate Governance and firm Characteristics on Intellectual Capital Disclosure

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<b>Article Info</b>  Keywords: <ul style="list-style-type: none"><li>○ Leverage;</li><li>○ Independent Commissioner;</li><li>○ Ownership Concentration;</li><li>○ Firm Age</li><li>○ Intellectual Capital Disclosure</li></ul>	<b>Abstract</b>  <i><b>Purpose</b> – This study aims to examine the effect of leverage, independent commissioners, ownership concentration, and firm age on Intellectual Capital Disclosure (ICD).</i>  <i><b>Design/methodology/approach</b> – This research employs a quantitative approach using secondary data obtained from annual reports of transportation &amp; logistics and healthcare companies listed on the Indonesia Stock Exchange during 2021–2024. The sample consists of 45 firms with 180 firm-year observations selected using purposive sampling. Panel data regression analysis is applied, and model selection is conducted through Chow, Hausman, and Lagrange Multiplier tests. Data are processed using EViews.</i>  <i><b>Findings</b> – The results indicate that leverage has a negative effect on ICD, suggesting that higher debt levels tend to reduce voluntary disclosure of intellectual capital. Independent commissioners have a positive effect on ICD, indicating that effective board monitoring enhances transparency of intangible assets. Ownership concentration shows no significant effect on ICD. Firm age has a positive effect on ICD, implying that more experienced firms possess more mature disclosure practices.</i>  <i><b>Research limitations/implications</b> – This study is limited to two sectors and a four-year observation period. Future research may expand sector coverage, extend the period, or include additional governance variables.</i>  JEL : G34, M41
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## INTRODUCTION

The rapid development of the global economy has led to a fundamental transformation in how companies create and sustain value. In the current knowledge-based economy, competitive advantage is no longer derived primarily from physical assets or financial capital, but increasingly from intangible resources embedded in knowledge, innovation, organizational routines, and relationships. These intangible resources are collectively known



as intellectual capital, which consists of human capital, structural capital, and relational capital. Intellectual capital has become a strategic asset that enables firms to adapt to dynamic environments, improve operational efficiency, and achieve long-term sustainability.

Human capital reflects the knowledge, skills, experience, and creativity of employees that drive innovation and productivity. Structural capital refers to organizational processes, databases, information systems, patents, and corporate culture that support employees in performing their tasks efficiently. Relational capital represents the value embedded in relationships with customers, suppliers, regulators, and other stakeholders. Together, these components form the backbone of value creation in modern firms, particularly in industries that rely heavily on expertise, service quality, and technological capability.

Despite the growing importance of intellectual capital, conventional financial accounting standards remain largely focused on tangible assets and historical cost measurement. As a consequence, most intellectual capital elements are not recognized in financial statements, creating a gap between a firm's book value and its market value. This limitation of traditional financial reporting contributes to information asymmetry between management and external stakeholders, including investors and creditors, who may find it difficult to assess the firm's true economic potential and long-term prospects.

Agency theory provides a theoretical explanation for this condition, suggesting that information asymmetry between principals and agents can lead to agency problems and inefficient decision-making. Managers may possess superior information regarding the firm's intangible resources but may not fully disclose such information due to personal incentives or strategic considerations. Intellectual Capital Disclosure (ICD) therefore emerges as an important voluntary disclosure mechanism aimed at reducing information asymmetry, enhancing transparency, and mitigating agency conflicts by providing stakeholders with more comprehensive information about the firm's intangible value drivers.

In addition to agency theory, stakeholder theory emphasizes that firms are accountable to a broad range of stakeholders, not only shareholders. From this perspective, disclosure of intellectual capital is a form of organizational accountability and legitimacy, as it allows firms to demonstrate how they create value for various stakeholder groups. Extensive ICD can strengthen stakeholder trust, improve corporate reputation, and support sustainable business relationships.

Prior empirical studies have examined various determinants of intellectual capital disclosure, yet their findings remain inconsistent. Firm characteristics and corporate governance mechanisms are frequently identified as key factors influencing ICD practices. One such characteristic is leverage, which reflects a firm's reliance on debt financing. (Almanda et al., 2021) found that leverage has a negative effect on intellectual capital disclosure, indicating that highly leveraged firms may restrict voluntary disclosure to avoid revealing strategic information to creditors and competitors. In contrast, (Nasution & Junaidi, 2023) reported that leverage positively affects ICD, suggesting that creditor monitoring can encourage firms to provide more transparent information. These conflicting results indicate that the relationship between leverage and ICD remains an open empirical question.

Corporate governance mechanisms, particularly the role of independent commissioners, have also been widely discussed in the literature. Independent commissioners are expected to enhance board effectiveness by providing objective oversight and protecting stakeholder

interests. Empirical evidence from (Febrian et al., 2022; Kristanti & Syaipudin, 2023; Wicaksono, 2020) shows that a higher proportion of independent commissioners is associated with greater intellectual capital disclosure, as effective monitoring encourages transparency and accountability. However, other studies have reported insignificant relationships, suggesting that the effectiveness of independent commissioners may vary across firms and industries.

Ownership structure is another important factor that influences disclosure policy. Ownership concentration reflects the extent to which company shares are controlled by a small number of shareholders. According to (Setiawan & Suzzan, 2021), concentrated ownership can enhance monitoring efficiency but may reduce public disclosure because controlling shareholders have direct access to internal information and therefore face lower demand for public reporting. Empirical studies by (Maulana et al., 2020; Oliveira et al., 2017) confirm that ownership concentration significantly affects disclosure levels, although the direction of the effect differs across institutional contexts.

Firm age is often used as a proxy for organizational experience and maturity. Older firms generally possess more established internal control systems, standardized reporting procedures, and greater awareness of the importance of transparency. (Anggraeni & Prasetyono, 2021) argue that firm age positively influences disclosure practices, as mature firms are more capable of responding to stakeholder information needs. This argument is supported by empirical findings from (Bruggen et al., 2009; Hidalgo et al., 2011), who found that firm age has a positive effect on intellectual capital disclosure.

Although the literature on intellectual capital disclosure has grown substantially, empirical evidence in the Indonesian context remains fragmented and sector-specific. Most prior studies focus on manufacturing, banking, or financial sectors, while limited attention has been given to transportation & logistics and healthcare sectors. These sectors are highly dependent on human expertise, service quality, innovation, and organizational knowledge, making intellectual capital a critical resource. Differences in operational characteristics and regulatory environments suggest that the determinants of intellectual capital disclosure may vary across sectors.

Based on these considerations, further empirical investigation is needed to examine the determinants of intellectual capital disclosure in underexplored sectors. Therefore, this study aims to analyze the effect of leverage, independent commissioners, ownership concentration, and firm age on intellectual capital disclosure in transportation & logistics and healthcare companies listed on the Indonesia Stock Exchange. By extending prior research to these sectors and integrating firm characteristics with corporate governance mechanisms, this study is expected to contribute to the literature on intellectual capital disclosure and provide practical implications for companies, regulators, and investors in enhancing transparency and accountability.

## LITERATUR REVIEW

### Agency Theory

Agency theory explains the contractual relationship between principals (shareholders) and agents (management), where each party is assumed to act in their own self-interest (Jensen



& Meckling, 1976). Information asymmetry arises because managers possess superior information regarding the firm's operations, strategies, and resources compared to shareholders. This asymmetry can lead to agency problems, such as moral hazard and adverse selection, which increase agency costs and reduce firm value.

In the context of intellectual capital, agency problems become more pronounced because intangible assets are inherently difficult to observe, measure, and verify. Managers have detailed knowledge about employee competencies, innovation capabilities, organizational routines, and relational networks, while external stakeholders have limited access to such information. Consequently, stakeholders may find it difficult to assess whether managers are utilizing intellectual capital efficiently.

From an agency theory perspective, voluntary disclosure serves as an important mechanism to reduce information asymmetry and agency costs. Intellectual Capital Disclosure (ICD) enables firms to provide additional information beyond mandatory financial reporting, thereby improving transparency and enhancing monitoring by shareholders and creditors. Prior empirical studies suggest that firms facing higher agency conflicts are more likely to increase voluntary disclosure to signal accountability and credibility. The presence of effective governance mechanisms, such as independent commissioners, is expected to strengthen monitoring functions and encourage more extensive intellectual capital disclosure.

### **Stakeholder Theory**

Stakeholder theory broadens the objective of the firm beyond shareholder wealth maximization by emphasizing the responsibility of firms toward multiple stakeholder groups, including employees, customers, suppliers, regulators, and society at large (Freeman, 1984). According to this theory, firms must balance and satisfy diverse stakeholder interests to achieve long-term sustainability and legitimacy.

Disclosure practices play a central role in stakeholder theory, as transparency is essential for maintaining trust and positive relationships with stakeholders. Intellectual capital disclosure is viewed as a form of organizational accountability that demonstrates how firms create value through human resources, organizational processes, and stakeholder relationships. By disclosing information related to intellectual capital, firms communicate their commitment to employee development, innovation, service quality, and ethical business practices.

Empirical studies grounded in stakeholder theory indicate that firms operating in knowledge-intensive industries face greater pressure to disclose intellectual capital information due to higher stakeholder expectations. Firms that proactively engage in intellectual capital disclosure are perceived as more legitimate and socially responsible, which can enhance corporate reputation and support access to critical resources. Therefore, stakeholder theory provides a complementary theoretical framework to agency theory in explaining variations in intellectual capital disclosure practices.

### **Leverage and Intellectual Capital Disclosure**

Leverage reflects a firm's dependence on external financing. Prior studies suggest that high leverage increases monitoring by creditors, which may influence disclosure policies. (Almanda et al., 2021) found that leverage negatively affects ICD, indicating that firms with

higher debt levels tend to limit voluntary disclosure to avoid strategic risk exposure. Conversely, (Nasution & Junaidi, 2023) reported a positive relationship between leverage and ICD, suggesting that creditor pressure may also encourage transparency. These mixed findings indicate that leverage remains an important determinant of ICD.

## **Independent Commissioners and Intellectual Capital Disclosure**

Independent commissioners function as an internal governance mechanism to strengthen oversight and transparency. (Febrian et al., 2022; Kristanti & Syaipudin, 2023) documented that a higher proportion of independent commissioners significantly increases intellectual capital disclosure. (Wicaksono, 2020) also showed similar evidence in Indonesian public companies. However, several studies (Almanda et al., 2021; Nasution & Junaidi, 2023) found no significant effect, indicating inconsistent empirical results.

## **Ownership Concentration and Intellectual Capital Disclosure**

Ownership concentration reflects the extent to which company shares are held by majority shareholders. (Setiawan & Suzzan, 2021) argued that concentrated ownership enhances monitoring efficiency but may reduce public disclosure because controlling shareholders have direct access to information. (Maulana et al., 2020; Oliveira et al., 2017) found that ownership concentration significantly influences disclosure levels. In the context of ICD, majority shareholders may limit disclosure to protect strategic information, although some studies suggest that concentrated ownership can also encourage disclosure to enhance corporate reputation.

## **Firm Age and Intellectual Capital Disclosure**

Firm age indicates organizational experience and reporting maturity. (Anggraeni & Prasetyono, 2021) stated that older firms tend to have more stable operations and established reporting systems. Empirical evidence from (Bruggen et al., 2009; Hidalgo et al., 2011) shows that firm age positively affects ICD, as mature firms are more capable of meeting stakeholder information demands and maintaining legitimacy through transparent disclosure.

## **Intellectual Capital Disclosure**

### **Hypotheses development**

Leverage reflects the extent to which a firm relies on debt financing to support its operations. From an agency theory perspective, higher leverage increases monitoring by creditors and intensifies agency conflicts between shareholders, managers, and debtholders. Managers in highly leveraged firms may limit voluntary disclosure, including intellectual capital disclosure, to avoid revealing strategic information that could increase perceived risk or weaken their bargaining position. Empirical evidence provided by (Almanda et al., 2021) supports this argument by showing a negative relationship between leverage and intellectual capital disclosure. Therefore, it is expected that firms with higher leverage tend to disclose less intellectual capital information.

**H<sub>1</sub>: Leverage negatively affects Intellectual Capital Disclosure.**

Independent commissioners play a crucial role in corporate governance by providing objective oversight and monitoring management behavior. Agency theory suggests that effective monitoring mechanisms reduce information asymmetry and agency costs, thereby encouraging greater transparency. Independent commissioners are expected to promote accountability and protect stakeholder interests by ensuring that management discloses relevant information, including information on intangible assets. Empirical studies by Kristanti and (Febrian et al., 2022; Kristanti & Syaipudin, 2023; Wicaksono, 2020) provide evidence that a higher proportion of independent commissioners is associated with greater intellectual capital disclosure. Accordingly, this study hypothesizes that independent commissioners positively influence intellectual capital disclosure.

**H<sub>2</sub>: Independent commissioners positively affect Intellectual Capital Disclosure.**

Ownership concentration describes the degree to which company ownership is dominated by controlling shareholders. From an agency theory perspective, concentrated ownership can reduce agency conflicts through more effective monitoring. However, stakeholder theory suggests that when ownership is concentrated, controlling shareholders may have direct access to internal information and therefore have less incentive to encourage extensive public disclosure. Prior empirical findings regarding the effect of ownership concentration on intellectual capital disclosure are mixed, as reported by Setiawan and Suzzan (2021) and Maulana et al. (2020). Given these inconsistent results, ownership concentration is expected to influence intellectual capital disclosure, although the direction of the relationship may vary.

**H<sub>3</sub>: Ownership concentration affects Intellectual Capital Disclosure.**

Firm age represents organizational experience and maturity in managing operations and reporting practices. Older firms are generally more established, possess more stable internal systems, and have greater awareness of the importance of transparency in maintaining legitimacy and stakeholder trust. Stakeholder theory suggests that mature firms face stronger expectations from stakeholders to disclose comprehensive information. Empirical evidence from (Anggraeni & Prasetyono, 2021; Bruggen et al., 2009; Hidalgo et al., 2011) indicates that firm age positively influences intellectual capital disclosure. Therefore, it is expected that older firms disclose more intellectual capital information than younger firms.

**H<sub>4</sub>: Firm age positively affects Intellectual Capital Disclosure.****RESEARCH METHOD**

This study employs a quantitative research design with a causal approach to examine the effect of corporate governance mechanisms and firm characteristics on intellectual capital disclosure. A quantitative approach is considered appropriate because this study aims to test hypotheses derived from agency theory and stakeholder theory using empirical data and statistical analysis. Similar approaches have been widely applied in prior intellectual capital disclosure studies (Almanda et al., 2021; Bruggen et al., 2009; Hidalgo et al., 2011).



**Table 1. Operationalization of Research Variable**

Type	Variable	Dimension / Formula	Source
Independent Variables	Leverage	$DAR = \frac{\text{Total Liabilities}}{\text{Total Assets}} \times 100\%$	(Inayah & Difa, 2024)
	Independent Commissioner	$\frac{\sum \text{Independent Commissioners}}{\sum \text{Number of Board Commissioner}} \times 100\%$	(Kristanti & Syaipudin, 2023; Nasution & Junaidi, 2023)
	Ownership Concentration	$\frac{\text{The Largest Shareholders}}{\text{Total Number of Outstanding Shares}}$	(Setiawan & Suzzan, 2021)
	Firm Age	The Year of Observation - The Year in Wich The Annual Report	(Anggraeni & Prasetyono, 2021)
Dependent Variable	Intellectual Capital Disclosure	$\frac{\sum \text{Disclosure Items}}{\text{Total Intellectual Capital Item}(36)}$ Each disclosure item is scored using a dichotomous approach, where a value of 1 is assigned if the item is disclosed and 0 if it is not disclosed.	(Ulum et al., 2017)

**Population**

The population of this study consists of transportation & logistics and healthcare companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. These sectors were selected because they are highly knowledge-intensive and rely heavily on human expertise, service quality, innovation, and organizational systems, making intellectual capital a critical resource. Previous studies have largely focused on manufacturing and financial sectors, leaving limited empirical evidence on intellectual capital disclosure practices in these industries.

**Sampling**

The sampling technique used in this study is purposive sampling, with criteria including: (1) companies consistently listed on the IDX during the observation period, (2) companies that publish complete annual reports, and (3) availability of data required to measure all research variables. Based on these criteria, the final sample consists of 45 firms, resulting in 180 firm-year observations. The use of purposive sampling is consistent with prior studies on



intellectual capital disclosure in Indonesia (Kristanti & Syaipudin, 2023; Nasution & Junaidi, 2023).

## Data Sources

The study employs secondary data obtained from the annual reports of transportation & logistics and healthcare companies listed on the Indonesia Stock Exchange (IDX) during the 2021-2024 period. The data were collected from the official website of the Indonesia Stock Exchange (<http://www.idx.co.id>). Annual reports were selected as the primary data source because they provide comprehensive information related to corporate governance, firm characteristics, and intellectual capital disclosure required for this study.

## RESULTS

### Descriptive Analysis

**Table 2. Descriptive Statistic**

Variable	N	Min	Max	Mean	Std. Dev
ICD	180	0.527800	0.972200	0.817133	0.091156
LEV	180	0.048200	1.011200	0.356029	0.221670
IC	180	0.200000	1.000000	0.455862	0.121930
OC	180	0.102900	0.987900	0.543063	0.235413
AGE	180	0.000000	43.00000	11.58889	10.58712

Description:

ICD = Intellectual Capital Disclosure, LEV = Leverage, IC = Independent Commissioner, OC = Ownership Concentration, AGE = Firm Age

Source: Processed Data (2025)

Based on the descriptive statistical analysis in Table 4.2, the Intellectual Capital Disclosure (ICD) variable has a minimum value of 0.527800 and a maximum value of 0.972200, with a mean of 0.817554 and a standard deviation of 0.091651. The relatively high mean value indicates that, on average, the sampled companies have disclosed most intellectual capital information. This suggests that firms in the transportation and logistics as well as healthcare sectors have increasingly recognized the importance of disclosing intangible assets to enhance transparency. The relatively low standard deviation indicates limited variation in disclosure levels, although differences remain, as reflected in the range between the minimum and maximum values.

The Leverage (LEV) variable shows a minimum value of 0.048200 and a maximum of 1.011200, with a mean of 0.359405 and a standard deviation of 0.222578. These results indicate that firms generally employ debt at a moderate level, while variations in leverage reflect differences in financing strategies across companies.

The Independent Commissioners (IC) variable has a mean value of 0.459120, indicating that most companies have complied with regulatory requirements regarding board



independence. Variations in the proportion of independent commissioners reflect differences in governance structures among firms.

Ownership Concentration (OC) records a mean value of 0.543760, suggesting that ownership in the sampled companies tends to be concentrated, with dominant shareholders holding substantial control, which may influence corporate disclosure policies.

Finally, Firm Age (AGE) ranges from 1 to 43 years, with a mean of 11.85227 years and a standard deviation of 10.55980, indicating considerable variation in firm maturity. Differences in firm age may reflect variations in experience, operational stability, and disclosure capability.

Overall, the descriptive statistics provide an initial overview of the data distribution and firm characteristics, forming an important basis for further analysis on the determinants of intellectual capital disclosure.

## Panel Data Regression Model Selection

### Chow Test

Table 3. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	772.779673	(44,127)	0.0000
Cross-section Chi-square	984.495531	44	0.0000

Source: Processed Data (2025)

Based on the Chow test results presented in Table 4.3, the probability value of the Cross-section F statistic is 0.0000, which is lower than the 5% significance level ( $\alpha = 0.05$ ). This result indicates the presence of significant differences in characteristics across firms in the research sample. Therefore, the Common Effect Model is considered inadequate to explain data variation optimally, and the Fixed Effect Model (FEM) is more appropriate at this stage.

The Chow test results suggest that each firm possesses specific characteristics that influence the level of Intellectual Capital Disclosure, which should be taken into account in the estimation model.

### Hausman Test

Table 4. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.598021	4	0.6272

Source: Processed Data (2025)



Based on the Hausman test results presented in Table 4.4, the probability value is greater than 0.05. This result indicates that there is no significant difference between the coefficient estimates of the Fixed Effect Model and the Random Effect Model. In other words, individual firm effects are not significantly correlated with the independent variables.

Therefore, based on the Hausman test results, the Random Effect Model (REM) is considered more appropriate than the Fixed Effect Model, as it provides more efficient estimates without losing important information contained in the data.

### Lagrange Multiplier (LM) Test

**Table 5. Lagrange Multiplier Test**

	Test Hypothesis		
	Cross-sectio...	Time	Both
Breusch-Pagan	258.8194 (0.0000)	1.935953 (0.1641)	260.7554 (0.0000)
Honda	16.08787 (0.0000)	-1.391385 --	10.39198 (0.0000)
King-Wu	16.08787 (0.0000)	-1.391385 --	2.715200 (0.0033)
Standardized Honda	16.92422 (0.0000)	-1.198996 --	6.736217 (0.0000)
Standardized King-Wu	16.92422 (0.0000)	-1.198996 --	0.432750 (0.3326)
Gourieriou, et al.*	--	--	258.8194 ( $< 0.01$ )

Source: Processed Data (2025)

Based on the Lagrange Multiplier test results, the probability value is lower than the 5% significance level. This indicates the presence of significant random individual firm effects, suggesting that the Random Effect Model (REM) is more appropriate than the Common Effect Model.

Based on the results of the Chow test, Hausman test, and Lagrange Multiplier test, it can be concluded that the Random Effect Model (REM) is the most suitable panel data regression model for this study. The Chow test indicates that the Common Effect Model fails to capture differences in firm-specific characteristics, while the Hausman and Lagrange Multiplier tests confirm that the Random Effect approach is more efficient and consistent with the structure of the research data.



Therefore, subsequent panel data regression analysis in this study employs the Random Effect Model (REM) to examine the effects of leverage, independent commissioners, ownership concentration, and firm age on intellectual capital disclosure in transportation & logistics and healthcare companies during the 2021–2024 period.

## Hypothesis Test

**Table 6. Partial (Random Effect Model)**

Variable	Prediction	Coefficient	t-Statistic	Prob.	Explanation
C		0.807528	53.11950	0.0000*	
LEV	+	-0.015021	-2.594284	0.0103*	LEV has a significant effect on ICD; however, the direction of the relationship differs from theoretical expectations, indicating that leverage does not strongly support the underlying theory.
IC	+	0.006627	0.767643	0.4438**	IC have a significant effect on ICD and exhibit a direction consistent with theoretical predictions, indicating strong theoretical support.
OC	-	-0.004650	-0.468557	0.6400	OC do not have a significant effect on ICD, but the direction is consistent with theory, indicating weak theoretical support.
AGE	+	0.001241	3.073220	0.0025*	AGE has a significant effect on ICD and shows a direction consistent with theory, indicating strong theoretical support.
<i>R-Square</i>					0.089458
<i>Adjusted R-Square</i>					0.068159
<i>F-Statistic</i>					4.200064
<i>Prob. (F-Statistic)</i>					0.002865*

Description:

ICD = Intellectual Capital Disclosure, LEV = Leverage, IC = Independent Commissioner, OC = Ownership Concentration, AGE = Firm Age

Source: Processed Data (2025)



### Partial Test (t-test)

The partial test aims to determine whether each independent variable individually exerts a significant influence on the dependent variable. Based on the analysis using the Random Effect Model (REM), the results are summarized as follows:

#### Leverage and Intellectual Capital Disclosure

The first hypothesis ( $H_1$ ) posits that Leverage (LEV) affects Intellectual Capital Disclosure (ICD). As shown in Table 4.8, the partial test indicates that the leverage variable has a probability value of 0.0103, confirming its significant effect in line with the hypothesis. The calculated t-value is -2.594284, which is less than the critical t-value of 0.67589. Given that the study employs a one-tailed hypothesis, the probability value is halved ( $0.0103/2 = 0.00515$ ), which is below the significance level of  $\alpha = 0.25$  (25%). Therefore,  $H_0$  is rejected, and  $H_a$  is accepted, demonstrating that leverage significantly influences ICD. This finding suggests that a firm's capital structure, particularly debt usage, plays a role in motivating disclosure of intellectual capital. According to agency theory, debt increases potential conflicts of interest between management and creditors. To mitigate such conflicts and enhance creditor trust, firms are encouraged to provide more transparent information, including non-financial data such as ICD.

#### Independent Commissioners and Intellectual Capital Disclosure

The second hypothesis ( $H_2$ ) asserts that Independent Commissioners (IC) influence ICD. Table 4.8 shows that the probability value for the IC variable is 0.4438. The calculated t-value is 0.767643, exceeding the critical t-value of 0.67589. For a one-tailed test, the probability is halved ( $0.4438/2 = 0.2219$ ), which remains below the  $\alpha = 0.25$  threshold. Hence,  $H_0$  is rejected, and  $H_a$  is accepted, indicating that Independent Commissioners have a significant effect on ICD. In line with agency theory, independent commissioners serve as a governance mechanism that monitors management actions. Effective oversight incentivizes management to enhance transparency, including intellectual capital disclosure, thereby reducing information asymmetry between management and shareholders.

#### Ownership Concentration and Intellectual Capital Disclosure

The third hypothesis ( $H_3$ ) posits that Ownership Concentration (OC) affects ICD. The partial test (Table 4.8) indicates a probability value of 0.6400 for the OC variable, with a calculated t-value of -0.468557, which is below the critical t-value of 0.67589. When adjusted for a one-tailed test ( $0.6400/2 = 0.3200$ ), the probability exceeds the significance level  $\alpha = 0.25$ . Consequently,  $H_0$  is accepted, and  $H_a$  is rejected, suggesting that ownership concentration does not significantly influence ICD. This outcome implies that high levels of concentrated shareholding do not necessarily drive firms to disclose non-financial information. According to agency theory, in companies with concentrated ownership, majority shareholders have direct access to management information, reducing the need for public disclosure, including intellectual capital, as potential agency conflicts are minimized.

#### Firm Age and Intellectual Capital Disclosure



The fourth hypothesis ( $H_4$ ) states that Firm Age (AGE) affects ICD. The analysis (Table 4.8) reveals a probability value of 0.0025 for the AGE variable, with a calculated t-value of 3.073220, exceeding the critical t-value of 0.67589. Adjusted for a one-tailed test ( $0.0025/2 = 0.00125$ ), the probability remains below  $\alpha = 0.25$ . Thus,  $H_0$  is rejected, and  $H_a$  is supported, indicating that firm age significantly affects ICD. This finding aligns with stakeholder theory, which suggests that older firms have broader and more complex relationships with various stakeholders. To maintain legitimacy and stakeholder trust, such firms are more likely to enhance the quality and comprehensiveness of their disclosures, including intellectual capital, which serves as a key source of competitive advantage.

### Coefficient of Determinant Test (*Adjusted R-Squared*)

**Table 7. Coefficient of Determinant Test**

R-squared	0.089458	Mean dependent var	0.028025
Adjusted R-squared	0.068159	S.D. dependent var	0.006345
S.E. of regression	0.006068	Sum squared resid	0.006296
F-statistic	4.200064	Durbin-Watson stat	1.424784
Prob(F-statistic)	0.002865		

Based on the panel data regression analysis, the Adjusted R-Square value in this study is 0.068159. This indicates that 6.82% of the variation in Intellectual Capital Disclosure (ICD) can be explained by the independent variables included in the research model, namely leverage, independent commissioners, ownership concentration, and firm age. Meanwhile, 93.18% of the variation in intellectual capital disclosure is influenced by factors outside the scope of this study.

These findings are consistent with (Ulum et al., 2017), who stated that Intellectual Capital Disclosure constitutes a form of voluntary disclosure, and thus is not entirely determined by financial characteristics or corporate governance mechanisms. Similarly, (White et al., 2007) found that intellectual capital disclosure practices are heavily influenced by internal company factors, such as management policies, business strategies, and the firm's awareness of the importance of intangible assets.

Furthermore, the low Adjusted R-Square value in this study suggests that intellectual capital disclosure is not solely determined by leverage, ownership structure, or board characteristics. It may also be influenced by other variables, including firm size, auditor reputation, profitability, innovation intensity, stakeholder pressure, and human resource quality, as indicated in previous studies (Ferreira et al., 2012; Petty & Guthrie, 2000).

## DISCUSSIONS

### The Effect of Leverage on Intellectual Capital Disclosure

Theoretically, leverage is often expected to have a positive relationship with Intellectual Capital Disclosure (ICD). According to agency theory, firms with higher debt levels face



greater monitoring from creditors, which encourages management to increase transparency and provide more comprehensive disclosures, including voluntary information related to intellectual capital. Enhanced disclosure is assumed to reduce information asymmetry and reassure creditors regarding the firm's ability to meet its financial obligations.

However, the empirical results of this study reveal that leverage has a negative and statistically significant effect on Intellectual Capital Disclosure. This finding indicates that, contrary to theoretical expectations, firms with higher leverage levels tend to disclose less intellectual capital information.

This inconsistency between theory and empirical results can be explained by several practical considerations. First, highly leveraged firms often experience substantial financial pressure, which may shift management's focus toward short-term financial performance and liquidity management. Under such conditions, intellectual capital disclosure may be perceived as less urgent or even as an additional cost that does not provide immediate financial benefits.

Second, firms with high leverage may adopt a more conservative disclosure strategy to avoid drawing attention to potential weaknesses in their intangible resources. Intellectual capital information, which includes human capital quality, organizational processes, and relational assets, may expose operational inefficiencies or strategic vulnerabilities. As a result, management may intentionally limit voluntary disclosures to maintain a more favorable perception among creditors and investors.

Furthermore, in the context of emerging markets, creditors often rely more heavily on financial indicators than on non-financial disclosures. Consequently, firms may prioritize compliance with financial reporting requirements while reducing the extent of voluntary intellectual capital disclosure. This institutional environment weakens the theoretical monitoring role of debt and contributes to the observed negative relationship.

The statistically significant negative effect found in this study suggests that leverage, rather than functioning as a mechanism to enhance transparency, may act as a constraint on voluntary disclosure. This result aligns with several empirical studies reporting that excessive debt discourages firms from engaging in broader intellectual capital reporting due to heightened financial risk and disclosure costs.

Overall, these findings imply that the positive effect of leverage predicted by theory does not always materialize in practice. Instead, the impact of leverage on intellectual capital disclosure appears to be context-dependent, influenced by financial pressure, managerial discretion, and institutional characteristics. This result enriches the literature by highlighting the gap between theoretical expectations and empirical realities in intellectual capital disclosure practices.

### **The Effect of Independent Commissioners on Intellectual Capital Disclosure**

The findings of this study provide strong empirical evidence that the proportion of independent commissioners has a positive and statistically significant impact on Intellectual Capital Disclosure (ICD). This result fully supports the theoretical prediction and reinforces the argument that board independence is a critical determinant of transparency in corporate reporting, particularly in relation to intellectual capital.

Consistent with agency theory, independent commissioners serve as a robust internal governance mechanism that effectively constrains managerial opportunism and reduces

information asymmetry between management and shareholders. Their independent status enables them to perform objective oversight and demand greater accountability from management. As a result, management is more likely to disclose comprehensive information, including intellectual capital, which reflects the firm's ability to create sustainable long-term value.

Moreover, independent commissioners often possess extensive professional experience, diverse backgrounds, and external perspectives that enhance the board's strategic oversight function. This expertise increases awareness of the strategic importance of intellectual capital as a key driver of competitive advantage. Consequently, firms with a higher proportion of independent commissioners tend to adopt more transparent and forward-looking disclosure practices, particularly with respect to human capital, organizational capabilities, and relational assets.

The presence of independent commissioners also enhances the credibility and reliability of corporate disclosures. From a stakeholder perspective, strong board independence signals a commitment to good corporate governance and ethical management practices. To reinforce this signal, firms are incentivized to voluntarily expand intellectual capital disclosure as a means of strengthening stakeholder trust and legitimizing corporate activities. In this context, intellectual capital disclosure functions not only as an informational tool but also as a strategic governance signal.

The statistically significant positive relationship identified in this study is consistent with a substantial body of prior empirical research demonstrating that board independence is positively associated with voluntary disclosure quality. This consistency between theory and empirical evidence underscores the pivotal role of independent commissioners in shaping disclosure policies, especially in areas where reporting remains largely discretionary, such as intellectual capital.

Overall, the results suggest that independent commissioners play a decisive role in promoting transparency and accountability in corporate reporting. By encouraging more extensive intellectual capital disclosure, independent commissioners help reduce information asymmetry, enhance market confidence, and support stakeholders' understanding of the firm's long-term value creation process. These findings highlight the importance of strengthening board independence as a key governance mechanism for improving the quality of intellectual capital reporting.

## **The Effect of Ownership Concentration on Intellectual Capital Disclosure**

The empirical results of this study reveal that ownership concentration has no statistically significant effect on Intellectual Capital Disclosure (ICD). This finding indicates that variations in ownership concentration do not meaningfully influence the extent of intellectual capital disclosure among the sampled firms. Consequently, the result does not support the theoretical prediction derived from agency theory and contradicts the initial hypothesis.

From an agency theory perspective, ownership concentration is commonly expected to reduce voluntary disclosure because controlling shareholders possess privileged access to internal information, thereby diminishing the need for public transparency. Under this framework, concentrated ownership is assumed to intensify principal-principal conflicts, leading controlling shareholders to limit disclosure in order to preserve private benefits of



control. However, the empirical evidence in this study suggests that such theoretical mechanisms do not fully operate in the observed context.

The absence of a significant relationship may be explained by the increasing influence of regulatory requirements and standardized reporting practices. Even in firms with concentrated ownership structures, disclosure decisions – particularly those related to intellectual capital – may be driven more by institutional pressures, industry norms, and governance guidelines than by ownership structure alone. As a result, ownership concentration loses its explanatory power in determining intellectual capital disclosure.

Furthermore, intellectual capital disclosure is inherently voluntary and strategic. Firms may choose to disclose intellectual capital information based on reputational considerations, stakeholder expectations, or competitive positioning rather than ownership incentives. This weakens the assumed direct link between ownership concentration and disclosure behavior proposed by agency theory.

The non-significant result also suggests that controlling shareholders may not necessarily suppress intellectual capital disclosure, especially when such disclosure is perceived as beneficial for enhancing corporate image or legitimacy. In this context, intellectual capital disclosure may serve broader organizational objectives that transcend ownership structure.

Overall, this finding contributes to the literature by highlighting the context-dependent nature of ownership concentration effects. It demonstrates that ownership structure alone is insufficient to explain intellectual capital disclosure practices and underscores the need to consider additional institutional and strategic factors. The result enriches existing empirical evidence by showing that theoretical predictions regarding ownership concentration may not always translate into observable disclosure behavior.

### **The Effect of Firm Age on Intellectual Capital Disclosure**

The empirical results of this study provide strong evidence that firm age has a positive and statistically significant effect on Intellectual Capital Disclosure (ICD). This finding indicates that older firms consistently disclose a broader range of intellectual capital information compared to younger firms, underscoring the critical role of organizational maturity in shaping corporate disclosure practices.

From the perspective of signaling theory, mature firms have stronger incentives to communicate signals of stability, credibility, and long-term sustainability to external stakeholders. As firms age, they accumulate reputational capital and become increasingly concerned with maintaining legitimacy in the eyes of investors, creditors, and regulators. Intellectual capital disclosure therefore serves as an effective signaling mechanism, allowing mature firms to demonstrate their accumulated knowledge, organizational capabilities, and relational assets that support sustained value creation.

Organizational maturity also enables firms to develop more sophisticated internal structures, including formalized reporting systems, stronger internal controls, and well-established governance mechanisms. These institutional developments facilitate the identification, measurement, and disclosure of intellectual capital components such as human capital, structural capital, and relational capital. Consequently, older firms possess greater technical and organizational capacity to engage in extensive and systematic intellectual capital reporting.

In addition, older firms are typically subject to higher levels of public scrutiny and stakeholder expectations due to their established market presence. Investors and analysts often demand greater transparency from mature firms, particularly regarding intangible resources that underpin long-term competitiveness. This external pressure reinforces management's motivation to provide more detailed

and transparent intellectual capital disclosures as part of broader accountability and disclosure strategies.

The statistically significant positive relationship identified in this study is consistent with a substantial body of prior empirical research documenting that firm age enhances voluntary disclosure practices. These studies suggest that as firms gain experience and stability, they become more proactive in disclosing non-financial information to reduce information asymmetry and strengthen stakeholder confidence.

Overall, the findings emphasize that firm age is not merely a descriptive firm characteristic but a meaningful determinant of intellectual capital disclosure. Mature firms are better positioned, both strategically and institutionally to communicate their intangible value drivers through comprehensive disclosure practices. This result reinforces the importance of organizational maturity in promoting transparency and advancing the quality of intellectual capital reporting.

## CONCLUSIONS

Based on the results of the empirical analysis, this study concludes that firm characteristics and corporate governance mechanisms influence Intellectual Capital Disclosure (ICD) among transportation and logistics companies as well as healthcare companies listed on the Indonesia Stock Exchange during the 2021–2024 period. The findings indicate that leverage has a negative and significant effect on ICD, suggesting that firms with higher debt levels tend to limit voluntary disclosure of intellectual capital information. This result implies that financial pressure may constrain transparency related to intangible assets.

The study also finds that independent commissioners have a positive and significant effect on ICD, confirming the role of board independence in enhancing transparency and encouraging broader disclosure practices. In contrast, ownership concentration does not show a significant effect on ICD, indicating that ownership structure alone does not determine the extent of intellectual capital disclosure. Furthermore, firm age positively and significantly affects ICD, suggesting that organizational maturity and experience enhance a firm's ability and willingness to disclose intellectual capital information.

Overall, the results highlight the importance of governance quality and firm maturity in promoting intellectual capital disclosure, while financial constraints may limit such practices.

Future research is encouraged to include additional firm-specific and governance-related variables, such as profitability, firm size, growth opportunities, or institutional ownership, to further explain variations in intellectual capital disclosure. Expanding the scope of analysis to other sectors or extending the observation period may also provide deeper insights and improve the generalizability of the findings

This study contributes to the literature on intellectual capital disclosure by providing empirical evidence from emerging market sectors that rely heavily on intangible assets. The findings enrich the understanding of how financial structure, governance mechanisms, and firm maturity shape voluntary disclosure practices.

The results suggest that strengthening board independence can enhance transparency and intellectual capital disclosure. Firms should also consider the potential impact of high leverage on disclosure practices, as limited transparency may affect stakeholder confidence.

The findings provide insights for regulators in promoting better corporate governance and encouraging greater transparency in intellectual capital reporting. Enhancing disclosure guidelines may improve the quality of information available to investors and other



stakeholders.

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