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Impact of Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets on Firm Value: Evidence from LQ45 Companies

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Abstract

This research explores the impact of Intellectual Capital (IC), Firm Performance, Firm Size, and Intangible Assets on Firm Value, while also assessing differences in IC's effect between firms with varying IC intensity. Additionally, it analyzes changes in Firm Value across the pandemic and post-pandemic periods. The study utilizes a sample of 45 firms included in the LQ45 Index, covering the period from February 1 to July 31, 2024. Data analysis employs multiple linear regression and the Difference-in-Differences (DiD) method using SPSS 26. The findings indicate that while IC, Firm Performance, Firm Size, and Intangible Assets collectively influence Firm Value, only Firm Performance, Firm Size, and Intangible Assets exhibit significant partial effects. Furthermore, no significant difference is found in IC's impact between firms with high and low IC intensity. The study also shows that the pandemic period does not significantly alter Firm Value determinants, suggesting firms have successfully adapted to changing economic conditions.

Keywords

Intellectual Capital, Firm Performance, Firm Size, Intangible Assets, Firm Value

1. Introduction

Firm value is a key measure that reflects how investors perceive a company's growth potential and financial standing. Numerous studies have examined various determinants of firm value, including Intellectual Capital (IC), firm performance, firm size, and intangible assets. Intellectual Capital, encompassing human, structural, and relational resources, is recognized as a crucial asset that strengthens a company's market position (Pulic, 2004). Chen et al. (2005) suggest that Intellectual Capital plays a significant role in firm value enhancement by improving operational efficiency and stimulating innovation. However, prior studies on Indonesian companies present inconsistent findings regarding this relationship (Ulum, 2012).

Firm performance is another critical factor influencing firm value. Previous studies emphasize that strong firm performance enhances investor trust, which in turn enhances the firm's market valuation (Anderson & Asyik, 2021; Syariati et al., 2018). Additionally, firm size and non-physical resources, including patents and trademarks, are recognized as significant determinants of firm value (Nisa & Kiswanto, 2021). These findings suggest that firms with a larger scale and well-managed intangible assets tend to exhibit higher firm value.

Despite these insights, the impact of Intellectual Capital on firm value continues to be a topic of discussion. While certain studies have demonstrated a notable positive effect, others have failed to confirm a strong link between the two variables (Baroroh, 2013; Herawati, 2017). Given these divergent findings, this research aims to explore the extent to which Intellectual Capital, firm performance, firm size, and intangible assets contribute to the firm value of LQ45-listed companies, both collectively and separately.

Moreover, this study examines whether the influence of Intellectual Capital on firm value depends on the extent to which firms develop and integrate their intellectual assets. Previous research suggests that Intellectual Capital can significantly enhance firm performance; however, its effectiveness depends on how well it is managed (Kuryanto & Syafruddin, 2008). Thus, it is important to assess whether firms with a high level of Intellectual Capital utilization demonstrate greater firm value than those with a lower level of Intellectual Capital integration.

Furthermore, the present study investigates whether there is a notable variation in firm value between the pandemic and post-pandemic phases. The COVID-19 crisis created significant economic instability, influencing firm value across multiple sectors. A study by Ngo & Duong (2024) published in the International Journal of Social Economics examined how the pandemic influenced firm performance across various sectors and identified different channels through which these effects occurred. Their research indicates that although the pandemic had a pronounced effect on firm performance, the degree of impact varied based on industry-specific factors and the resilience strategies adopted by firms. Accordingly, this study seeks to assess whether there is a measurable statistical variation in firm value between the pandemic and post-pandemic contexts.

This study formulates several key hypotheses: (1) examining whether intellectual Capital, firm performance, firm size, and intangible assets influence firm value; (2) assessing whether firms with high intellectual capital intensity experience a greater impact on firm value compared to those with lower intellectual capital intensity; and (3) evaluating whether firm performance affects firm value differently during and after the pandemic. The results of this research are anticipated to add valuable insights to the academic literature while providing practical insights for corporate management on optimizing resource utilization to enhance firm value.

2. Literature Review

Stewart (1997) characterizes Intellectual Capital as a set of intangible assets that enhance a firm's competitive position, encompassing human, structural, and

relational components. Organizations with a high level of Intellectual Capital are more likely to achieve superior financial outcomes due to improved innovation, efficient knowledge management, and optimal resource utilization (Pulic, 2004). Previous studies suggest that Intellectual Capital plays a crucial role in shaping firm value, as firms with strong intellectual resources tend to generate sustainable earnings and foster investor confidence (Chen et al., 2005; Widarjo, 2011).

Firm performance serves as a key indicator of a company's operational success. It is commonly evaluated using financial metrics such as Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS). Kaplan & Norton (1992) suggest that firm performance is influenced by both tangible and intangible factors, including intellectual Capital and strategic decision-making. Mulyawati et al. (2015) determined that financial performance has a notable impact on firm value, with ROA and ROE showing significant effects. In contrast, Net Profit Margin (NPM) did not exhibit a meaningful influence. These results indicate that investors prioritize profitability and asset efficiency in assessing a firm's potential, ultimately influencing its market valuation.

Firm size denotes the overall scale of a company and is typically quantified using metrics such as total assets, market capitalization, or revenue (Prasetyorini, 2013). Larger firms typically benefit from greater financial resources, enhanced market stability, and stronger bargaining power, which can positively influence firm value. However, excessive firm size may introduce inefficiencies and operational complexities, potentially undermining overall firm performance. Existing studies indicate that the association between firm size and firm value may exhibit a nonlinear pattern, as both advantages and disadvantages emerge depending on a firm's operational scale.

Intangible assets, including intellectual property, brand equity, and proprietary technology, play a vital role in influencing firm value. Ulum (2012) define intangible assets as non-physical, non-monetary elements that provide competitive benefits and drive long-term financial performance. These assets are recognized when they offer potential future economic benefits. Firms with strong intangible assets tend to garner higher market confidence and sustain earnings growth, as these assets foster innovation and differentiation. Therefore, firms that efficiently leverage their intangible assets can enhance their competitive standing and sustain long-term financial growth.

The firm value represents investors' views on a company's financial health and future growth prospects and is often evaluated using the price-to-book value (PBV) ratio (Sutrisno, 2013). Keown (2018) states that the combined market valuation of equity and debt influences firm value. Hardiningsih (2009) underscores the importance of stock price as a crucial measure of firm value. Brigham and Houston (2015) argue that maximizing firm value is a central managerial objective aimed at ensuring shareholder wealth and long-term business growth. Intellectual Capital and firm performance are pivotal factors in determining firm value, as they drive innovation, efficiency, and strategic decision-making. Organizations that successfully utilize these factors are more likely to attain greater market valuations and long-term profitability.

Based on the theoretical framework and previous studies, this research proposes the following hypotheses:

H_1: Intellectual Capital plays a crucial role in influencing firm value.
H_2: Firm performance exerts a notable impact on firm value.
H_3: Firm size contributes significantly to firm value.
H_4: Intangible assets hold substantial influence over firm value.
H_5: The influence of Intellectual Capital on a firm's value varies between firms with high and low Intellectual Capital intensity.
H_6: The impact of the pandemic on a firm's value varies between the pandemic and post-pandemic periods.

3. Methods

This research utilizes a quantitative method to explore the relationship between Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets. Additionally, it investigates the moderating role of Intellectual Capital intensity and examines the effects of the pandemic. The study examines firms classified under the LQ45 Index of the Indonesia Stock Exchange (IDX) and is based on secondary data obtained from audited financial reports.

This research adopts an explanatory research design, which aims to establish causal relationships between variables and analyze how and why these factors influence Firm Value. The study employs the Difference-in-Differences (DiD) method within a multiple linear regression framework, assessing variations in Firm Value across different levels of Intellectual Capital intensity and two distinct economic periods: during and after the pandemic.

This study examines a population of 45 firms that are part of the LQ45 Index on the IDX, covering the period from February 1, 2024, to July 31, 2024. The sample selection follows a purposive sampling technique, ensuring that firms meet specific inclusion criteria relevant to the study's objectives. The study relies on secondary data obtained from publicly accessible audited financial reports available on the IDX website, including balance sheets, income statements, cash flow statements, and explanatory financial notes.

This research employs the DiD methodology, utilizing multiple linear regression analysis for implementation. The DiD technique is frequently applied in econometric studies to assess the impact of a treatment, comparing the average changes between two groups:

1. Treatment Group: Firms with high Intellectual Capital intensity.
2. Control Group: Firms with low Intellectual Capital intensity.

Additionally, the method compares variations across two distinct periods:

- During the pandemic (2020–2021)
- Post-pandemic (2022–2023)

Dummy variables are incorporated to represent the treatment groups and periods, allowing for the measurement of interaction effects. The interaction term between these dummy variables captures the joint effect of Intellectual Capital intensity and the pandemic timeframe.

The multiple linear regression equation employed in this research is expressed as follows:

$$NP = b_0 + b_1IC + b_2KP + b_3UP + b_4IA + b_5DIC + b_6DCOV + b_7 (DIC \times DCOV) + \epsilon$$

Where:

- NP = Firm Value
- IC = Intellectual Capital
- KP = Firm Performance
- UP = Firm Size
- IA = Intangible Assets
- DIC = Dummy variable for Intellectual Capital intensity (1 = high, 0 = low)
- DCOV = Dummy variable for the pandemic period (1 = post-pandemic, 0 = during pandemic)
- (DIC × DCOV) = Interaction term assessing the moderating effect of Intellectual Capital intensity and the pandemic period
- ε = Error term

The data analysis process involves the following steps:

1. Determining variable values based on financial data.
2. Identifying treatment and control groups based on Intellectual Capital intensity.
3. Performing multiple linear regression analysis using the Difference-in-Differences (DiD) method.

4. Conducting hypothesis testing through t-tests (individual variables) and F-tests (overall model significance).
5. Interpreting Analyzing regression outputs to determine how Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets influence Firm Value, with consideration given to the moderating roles of Intellectual Capital intensity and pandemic-related factors.

Through this structured analytical approach, the research seeks to generate empirical insights regarding how Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets contribute to Firm Value under varying economic conditions.

4. Results

Descriptive statistics offer an overview of the dataset utilized in this research without drawing broad conclusions. Table 1 presents a summary of the statistical descriptors for firm value (NP), intellectual capital (IC), firm performance (KP), firm size (UP), and intangible assets (IA).

Table 1. Summary of Summary Statistics

Variable	N	Min	Max	Mean	Std. Dev
NP	176	- 4.74	10.28	2.46	2.67
IC	176	- 15.99	30.02	7.46	7.97
KP	176	- 75.73	125.32	26.03	34.16
UP	176	0.05	980.07	165.24	272.93
IA	176	- 200.59	238.81	23.19	75.00

The average NP is 2.46, indicating that, on average, firms have a market value slightly exceeding their book value. The broad range from -4.74 to 10.28 and a standard deviation of 2.67 reflect substantial variation in market valuation among firms. Similarly, IC has an average of 7.46, reflecting its potential contribution to firm value. The broad range (-15.99 to 30.02) and high standard deviation (7.97) suggest considerable differences in intellectual capital utilization across firms.

Firm performance (KP) has a mean value of 26.03, reflecting overall positive performance. However, its high standard deviation (34.16) and wide range (-75.73 to 125.32) indicate stark disparities between firms incurring losses and those generating substantial profits. UP, measured by total assets, has an average of 165.24, with a wide range (0.05 to 980.07) and a standard deviation of 272.93, suggesting considerable differences between small and large firms. IA have an average value of 23.19, with a range from -200.59 to 238.81 and a standard deviation of 75.00, demonstrating substantial variation in ownership and valuation of intangible assets across firms.

4.1. Normality Test

Prior to estimating the multiple linear regression model, a normality test was performed to assess whether the dataset adhered to a normal distribution. The normality assessment was performed by calculating the percentage of data within the ±3 standard deviation interval. This interval was determined using the upper bound (UB) and lower bound (LB), which were calculated based on the mean (μ) and standard deviation (σ). Observations outside this range were identified as outliers and were replaced with values closer to the UB or LB to maintain the normality assumption.

Table 2. Normality Test Results

Variable	Proportion of Data in Interval ($\mu \pm 3\ \sigma$)
NP	100.00%
IC	100.00%
KP	100.00%
UP	100.00%
IA	100.00%

Table 2 confirms that all variables have 100% of their data within the ±3 standard deviation range, suggesting compliance with the normality assumption.

4.2. Regression Analysis

Following the normality assessment, a multiple linear regression analysis was conducted to assess the influence of IC, KP, UP, and IA on NP.

Table 3. Regression Model Results

Coefficients			
Regression Model	Beta	t-value	p-value
(Constant)	2.078	5.069	0.000
IC	0.095	3.362	0.001
KP	0.005	0.875	0.383
UP	-0.002	-2.241	0.026
IA	0.017	6.929	0.000
DIC	-0.958	-1.710	0.089
DCOV	-0.173	-0.344	0.731
DIC.DCOV	-0.088	-0.124	0.902

4.3. Classical Assumption Tests

Multicollinearity Test

The Variance Inflation Factor (VIF) and Tolerance values were analyzed to identify potential multicollinearity issues. A model is considered free from multicollinearity if the VIF remains below 10 and the Tolerance value exceeds 0.1.

Table 4. Collinearity Diagnostic Results

Regression Model	Collinearity Indicators Tolerance Level	Variance Inflation Factor (VIF)
(Constant)		
IC	0.627	1.594
KP	0.824	1.214
UP	0.799	1.251
IA	0.913	1.095
DIC	0.401	2.496
DCOV	0.497	2.010
DIC.DCOV	0.330	3.026

The Tolerance values and Variance Inflation Factor (VIF) were examined to identify potential multicollinearity issues. A model is considered free from multicollinearity if the VIF remains below 10 and the Tolerance value exceeds 0.1.

4.4. Heteroscedasticity Test

The Glejser test was applied to evaluate heteroscedasticity. If the significance level exceeds 5% (0.05), it indicates the absence of heteroscedasticity.

Table 5. Heteroscedasticity Test Results

Coefficients			
Model	B	t	Sig.
(Constant)	1.583	5.527	0.000
IC	0.052	2.618	0.010
KP	0.002	0.462	0.645
UP	0.000	-0.976	0.331
IA	0.003	1.966	0.051
DIC	-0.545	-1.392	0.166
DCOV	-0.237	-0.675	0.501
DIC.DCOV	-0.125	-0.252	0.802

Since IC significantly affects residual variance ($p = 0.010 < 0.05$), the model exhibits heteroscedasticity. A remedial approach was applied to adjust the regression model.

Table 6. Revised Regression Model after Remedial

Coefficients			
Model	B	t	Sig.
(Constant)	5.581	2.732	0.007
IC	0.281	2.004	0.047
KP	-0.015	-0.514	0.608
UP	-0.003	-0.735	0.464
IA	0.014	1.153	0.250
DIC	-2.435	-0.872	0.385
DCOV	-1.375	-0.549	0.584
DIC.DCOV	0.033	0.009	0.993

4.5. Autocorrelation Test

The autocorrelation test was performed to examine potential correlations among residuals by applying the Durbin-Watson (D-W) test (Gujarati & Porter, 2009). Table 7 presents the Durbin-Watson value associated with the regression analysis.

Table 7. Summary of Autocorrelation Test

Regression Model	DW
1	1.252

As illustrated in Table 7, the Durbin-Watson statistic of 1.252 is assessed in comparison to the critical values from the Durbin-Watson table, which is compared against the Durbin-Watson critical table based on $k = 7$ independent variables and $n = 176$ observations (Wooldridge, 2016). The criteria for no autocorrelation follow the rule $du < d < 4 - du$, where the calculated range is $1.8242 < 1.252 < 2.1757$. The results indicate that autocorrelation is present in the model, necessitating further corrective action. To resolve this issue, the Durbin-Watson Two-Step Test was applied, and the updated regression model results are presented in Table 8.

Table 8. Final Regression Model after Autocorrelation Adjustment

Model	B	t	Sig.
(Constant)	0.1507	0.691	0.491
IC2	0.0322	0.927	0.356
KP2	0.0126	2.186	0.031

UP2	0.0012	2.259	0.026
IA2	0.0066	2.819	0.006
DIC2	0.2167	0.708	0.480
DCOV2	0.3234	1.285	0.201
DIC.DCOV2	-0.3169	-0.908	0.366

4.6. Hypothesis Testing

The hypothesis testing process involved three primary tests:

4.6.1. R-Square Test (Measure of Explained Variance)

The R-Square test evaluates the proportion of variance in the dependent variable that is accounted for by the independent variables in the model (Hair et al., 2019).

Table 9. R-Square Analysis Results

Model	R-Square
(Constant)	0.147

Table 9 illustrates that the R-squared (R^2) value is 0.147, meaning that only 14.7% of the variation in the dependent variable is attributable to the independent variables in the model. The remaining 85.3% is affected by external influences not included in the analysis, such as macroeconomic conditions, industry trends, and post-pandemic effects (Gao, 2024).

4.6.2. Joint Influence Assessment (F-Test)

The F-test determines whether at least one independent variable significantly impacts the dependent variable, assessing whether the regression model provides a better explanation of variability than a model without independent variables (Montgomery et al., 2012).

Table 10. Joint Influence Assessment (F-Test) Outcomes

Analysis Type	df	F-Value	p-Value
Model Estimation	7	2.9261	.007[b]
Error Term	119		

As presented in Table 10, the computed F-statistic is 2.9261, with a corresponding p-value of 0.007 (< 0.05). These results indicate that the independent variables, when considered together, have a statistically significant influence on firm value. These findings validate the significance of the regression model in explaining variations in firm value. Consequently, factors such as Intellectual Capital (IC), Firm Performance (KP), Firm Size (UP), and Intangible Assets (IA) are confirmed to have a meaningful impact on firm value when evaluated collectively.

4.6.3. Partial Influence Test (t-Test)

The t-test evaluates whether each independent variable has a distinct impact on the dependent variable by comparing the calculated t-statistic with the critical value from the t-distribution table (Wooldridge, 2016). In this study, $\alpha = 0.05$ with degrees of freedom (df) = 125, resulting in a critical t-value of 1.97928.

The decision criteria are as follows:

- If |t-statistic| exceeds t-critical, the null hypothesis (H_0) is rejected, indicating statistical significance.
- If |t-statistic| is less than or equal to t-critical, the null hypothesis (H_0) is retained, suggesting no notable statistical effect.

Table 11. Summary of Individual Influence Analysis (t-Test)

Independent Variable	t-Value	t-Critical	Comparison Outcome	Interpretation
IC2	0.92659	1.97928	0.92659 < 1.97928	IC2 has no significant effect on NP
KP2	2.18611	1.97928	2.18611 >1.97928	KP2 significantly affects NP
UP2	2.25891	1.97928	2.25891 > 1.97928	UP2 significantly affects NP
IA2	2.81894	1.97928	2.81894 > 1.97928	IA2 significantly affects NP
DIC	0.70841	1.97928	0.70841 < 1.97928	DIC has no significant effect on NP
DCOV	1.28549	1.97928	1.28549 < 1.97928	DCOV tidak has no significant effect on NP
DIC.DCOV	-0.90822	1.97928	-0.90822 < 1.97928	DIC.DCOV has no significant effect on NP

Based on Table 11, KP2, UP2, and IA2 significantly influence firm value, as their t-values exceed the critical threshold of 1.97928. Conversely, IC2, DIC, DCOV, and DIC. Fails to demonstrate a notable effect on firm value, given that their t-values fall below the critical benchmark.

5. Discussion

5.1. Do Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets Influence Firm Value?

The findings from the F-test suggest that variations in Firm Value (NP2) can be largely attributed to Intellectual Capital (IC2), Firm Performance (KP2), Firm Size (UP2), and Intangible Assets (IA2) as an integrated set of variables within the regression model (Gujarati & Porter, 2009). However, based on the t-test evaluation, only Firm Performance, Firm Size, as well as Intangible Assets show a notable individual influence on Firm Value. In contrast, Intellectual Capital does not demonstrate a statistically significant standalone influence (Hair et al., 2019). These results suggest that fluctuations in Firm Performance, Firm Size, and Intangible Assets serve a key function in shaping Firm Value. In contrast, Intellectual Capital alone does not exert a noticeable impact when analyzed separately.

These results have important managerial implications. Since Firm Performance, Firm Size, and Intangible Assets significantly affect Firm Value, companies should focus on enhancing operational efficiency, expanding business scale, and optimizing the management of intangible assets such as patents and brands (Brigham & Houston, 2015). On the other hand, since Intellectual Capital does not show a direct and significant impact on Firm Value in isolation, companies should consider integrating human Capital and knowledge management with broader corporate strategies. Although Intellectual Capital may not directly impact Firm Value in this study, prior research suggests that its effect may depend on its strategic integration with other business functions (Kuryanto & Syafruddin, 2008).

This study aligns with previous findings demonstrating that Firm Performance, Firm Size, and Intangible Assets positively influence Firm Value. For instance, Anderson and Asyik (2021) and Syariati et al. (2018) found that strong firm performance enhances investor confidence, leading to higher Firm Value. Similarly, Nisa & Kiswanto (2021) highlighted the substantial contribution of Intangible Assets and Firm Size in driving Firm Value, which aligns with the conclusions drawn in this

study. Nevertheless, the results differ from those of studies emphasizing Intellectual Capital as a key determinant of Firm Value (Baroroh, 2013; Herawati, 2017). The absence of a significant effect in this study suggests that Intellectual Capital may exert its influence through indirect mechanisms or within specific organizational contexts that were not captured in this analysis.

5.2. Does the Effect of Intellectual Capital on Firm Value Differ Between Firms with High and Low Intellectual Capital Intensity?

The F-test results suggest that Intellectual Capital Intensity (IC), as represented by the Intellectual Capital Intensity Dummy (DIC), has a collective impact on Firm Value. However, according to the t-test analysis, DIC does not exhibit a statistically significant standalone effect on Firm Value. These findings imply that although Intellectual Capital might play a role in explaining variations in firm value within the model, there is no empirical evidence to support the claim that firms with higher Intellectual Capital intensity exert a greater influence on Firm Value compared to those with lower intensity (Chen et al., 2005). In other words, possessing a substantial amount of Intellectual Capital alone does not automatically lead to an increase in Firm Value when assessed independently.

These results have practical implications for companies in managing Intellectual Capital effectively. Since Intellectual Capital intensity does not significantly differentiate its impact on Firm Value, firms should not rely solely on the volume of Intellectual Capital. Instead, firms need to integrate Intellectual Capital strategically with innovation, operational efficiency, and intangible asset management to maximize its impact (Pulic, 2004). Additionally, merely accumulating Intellectual Capital does not automatically enhance Firm Value; it must be leveraged in combination with other competitive factors (Widarjo, 2011).

This study aligns with prior research indicating that Intellectual Capital contributes to Firm Value in a collective model but may not always have significant individual effects. For example, Herawati (2017) reported that Intellectual Capital enhances financial performance, yet not all of its components produce a statistically significant impact on an individual basis. Similarly, Baroroh (2013) demonstrated that while Intellectual Capital positively influences financial performance in Indonesian manufacturing firms, its effect depends on the company's strategic direction. On the other hand, the present study diverges from the findings of Kuryanto and Syafruddin (2008), who concluded that Intellectual Capital disclosure plays a crucial role in determining firm value and performance. The absence of statistical significance in this study suggests that further research is needed to investigate whether factors such as implementation strategies, industry characteristics, or external conditions act as mediating variables in the relationship between Intellectual Capital intensity and Firm Value.

5.3. Is There a Difference in the Impact on Firm Value Between the Pandemic and Post-Pandemic Periods?

The t-test analysis reveals that DCOV does not exert a statistically significant individual influence on Firm Value (Dewi & Kencana, 2022). These results suggest that although the pandemic influenced Firm Value as a whole, the difference between the pandemic and post-pandemic periods is not substantial enough to demonstrate a significant effect. These findings indicate that additional factors beyond DCOV likely played a more prominent role in shaping Firm Value following the pandemic.

From a practical perspective, these results highlight that despite the widespread economic disruptions caused by the pandemic, firms in this study appeared to have adapted effectively. Consequently, no significant divergence in Firm Value was observed between the pandemic and post-pandemic periods (Simanjuntak & Hidayat, 2021). These results suggest that internal corporate strategies, such as managerial effectiveness, innovation, and financial resilience, are more influential in maintaining Firm Value than external macroeconomic shocks (Wicaksono & Adyaksana, 2020). Therefore, firms should continue strengthening business strategies, improving

operational efficiency, and enhancing financial resilience to sustain performance across different economic conditions.

This study supports prior research suggesting that the pandemic's impact on Firm Value varies by industry and firm strategy. For instance, Dewi and Kencana (2022) found that pharmaceutical firms listed on the IDX did not experience significant financial performance differences before and during COVID-19, indicating strong adaptability. Similarly, Simanjuntak and Hidayat (2021) reported that COVID-19 did not significantly impact Firm Value in Indonesian banking firms, highlighting the role of strong financial fundamentals. However, this study contrasts with the findings by Wicaksono and Adyaksana (2020), which indicated that investor reactions to the pandemic played a key role in shaping stock performance, thereby affecting Firm Value in the banking sector. The discrepancy between these findings suggests that the pandemic's impact on Firm Value is industry-specific and dependent on firms' strategic responses. The insignificant effect of DCOV in this study suggests that other factors, such as government policies, industry trends, and managerial decisions, may have had a more dominant influence on Firm Value than the distinction between pandemic and post-pandemic periods. Thus, firms should prioritize internal resilience and operational flexibility to navigate future external shocks effectively.

6. Conclusion

This research explores how Intellectual Capital, Firm Performance, Firm Size, and Intangible Assets contribute to variations in Firm V alue, particularly in different economic periods. The findings reveal that, collectively, these four variables significantly influence Firm Value. However, when analyzed individually, only Firm Performance, Firm Size, and Intangible Assets exhibit a significant effect, while Intellectual Capital does not show a statistically significant impact. These results suggest that while Intellectual Capital contributes to variations in Firm Value, its direct influence may be moderated by other strategic or operational factors not captured in this study.

Additionally, the study investigates whether firms with higher Intellectual Capital intensity exert a greater influence on Firm Value than those with lower Intellectual Capital intensity. The findings reveal that while Intellectual Capital contributes to explaining Firm Value, statistical evidence does not confirm a significant distinction between firms with varying levels of Intellectual Capital intensity. These results imply that merely possessing a higher level of Intellectual Capital does not automatically enhance Firm Value unless it is effectively managed and integrated with other strategic business elements.

Furthermore, this study evaluates the effects of the pandemic by comparing Firm Values during and after the crisis. While the pandemic had an overall influence on Firm Value, no significant differences were found between the two periods when analyzed separately. This finding suggests that firms successfully adapted to economic changes, mitigating the long-term effects of the crisis on their valuation. These results emphasize the importance of corporate resilience, strategic management, and operational flexibility in sustaining Firm Value amid economic uncertainty.

This study has several limitations. First, it focuses exclusively on companies listed in the LQ45 Index, which may affect the extent to which the findings apply to a broader range of firms in Indonesia. Second, the research relies on secondary data sources, which might not comprehensively capture qualitative elements related to corporate strategies for managing Intellectual Capital. Third, while the regression model used in this study offers valuable insights, it may not fully reflect the intricate relationships between Intellectual Capital and Firm Value, indicating the need for alternative methodological approaches to investigate this issue further. Lastly, this study does not specifically account for industry-sector differences, which could

influence how Intellectual Capital and other financial factors interact with Firm Value.

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