

THE INFLUENCE OF PRODUCT MARKET COMPETITION AND INTELLECTUAL CAPITAL ON FIRM VALUE

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Abstrak

Penelitian ini bertujuan untuk menganalisis pengaruh Product Market Competition dan Intellectual Capital terhadap Nilai Perusahaan pada perusahaan sektor infrastruktur yang terdaftar di Bursa Efek Indonesia periode 2021–2025. Sampel penelitian terdiri atas 57 perusahaan dengan total observasi 128 setelah eliminasi data outlier. Penelitian menggunakan purposive sampling untuk pemilihan sampel. Analisis data dilakukan dengan regresi linier berganda menggunakan SPSS 23. Penelitian ini berlandaskan teori sinyal yang menggambarkan bahwa informasi strategis perusahaan dapat menjadi sinyal bagi investor dalam menilai prospek dan nilai perusahaan. Hasil pengujian menunjukkan bahwa bahwa Product Market Competition berpengaruh signifikan terhadap Nilai Perusahaan, sedangkan Intellectual Capital tidak berpengaruh signifikan terhadap Nilai Perusahaan. Sebagai saran penelitian selanjutnya menambahkan variabel moderasi atau mediasi sebagai pengembangan penelitian.

Kata Kunci : Product Market Competition, Intellectual Capital, Nilai Perusahaan

Abstract

This study aims to analyze the effect of Product Market Competition and Intellectual Capital on Company Value in infrastructure sector companies listed on the Indonesia Stock Exchange during the 2021–2025 period. The research sample consisted of 57 companies with a total of 128 observations after eliminating outlier data. The study used purposive sampling for sample selection. Data analysis was conducted using multiple linear regression with SPSS 23. This study is based on signaling theory, which suggests that a company's strategic information can serve as a signal for investors in assessing the company's prospects and value. The results showed that Product Market Competition has a significant effect on Company Value, while Intellectual Capital does not have a significant effect on Company Value. For future research, it is suggested to add moderating or mediating variables as a development of the study.

Keywords: *Product Market Competition, Intellectual Capital, Firm Value*

A. INTRODUCTION

Firm value is a key indicator reflecting investor perceptions regarding a company's condition, performance, risk, and prospects. Market valuation is influenced not only by financial performance but also by information concerning business strategy, competitive capabilities, and the management of corporate resources. Such information serves as a signal for investors in assessing a company's prospects and making investment decisions (Brigham, 2024; Pangestuti et al., 2022). Therefore, companies need to adopt strategies that enhance competitiveness and sustainably create added value.

In the infrastructure sector, corporate value is of increasing importance due to business characteristics that entail substantial investment and long-term projects, alongside interdependencies with financing, regulation, and national development. A case illustrating this dynamic is PT Wijaya Karya (Persero) Tbk (WIKA). In 2024, WIKA faced financial performance pressures evidenced by corporate losses which the market met with a negative response in the form of a declining share price. Furthermore, as part of efforts to improve its financial structure, WIKA settled trade payables totaling IDR 3.29 trillion and made bond and *sukuk* payments amounting to IDR 1.18 trillion (PT Wijaya Karya (Persero) Tbk, 2025; Redaksi, 2024). These events demonstrate that a company's financial condition and its ability to withstand business pressures can influence investor confidence and corporate value.

Fluctuations in firm value can be influenced by product market competition. Market competition drives companies to enhance efficiency, refine business strategies, maintain quality, control costs, and sustain competitiveness. In the infrastructure sector, competition involves not only securing projects but also technical capabilities, cost efficiency, timely project completion, and corporate reputation. (Liu et al., 2022) explain that market competition can serve as an external governance mechanism, prompting companies to be

more responsive to market conditions. However, intense competition can also squeeze profit margins and increase business risk.

Beyond market competition, intellectual capital is an internal factor that can influence a company's value. Intellectual capital reflects a company's ability to manage knowledge, human resource competencies, technology, innovation, and organizational systems to create value added (Keter et al., 2024). Effective management of intellectual capital can enhance efficiency and innovation while strengthening a company's competitive advantage (Priyanto et al., 2024). From the perspective of signaling theory, a company's ability to manage intellectual resources can serve as a positive signal to investors regarding the company's quality and prospects.

However, prior studies have yielded inconsistent results. (Babar & Habib, 2021) found that product market competition positively affects firm value, whereas (Firmansyah et al., 2024) found a negative effect. Regarding intellectual capital, (Sulastri et al., 2021) demonstrated a positive impact on firm value, while (Dewi et al., 2023) found a negative impact. These divergent findings indicate a research gap that warrants further investigation, particularly concerning infrastructure sector companies, which are characterized by high capital intensity and face competition in securing projects. Given this phenomenon and the inconsistency in research findings, this study aims to analyze the impact of product market competition and intellectual capital on the firm value of infrastructure companies listed on the Indonesia Stock Exchange during the 2021–2025 period.

THEORETICAL STUDY AND HYPOTESIS DEVELOPMENT

Signaling Theory

Signaling Theory was introduced by (Spence, 1973) to explain the information asymmetry between a company's internal parties who possess superior information and external parties, particularly investors, who have more limited information. Information held by the company regarding its condition, performance, strategy, and business prospects can be conveyed to investors as a signal to aid in company valuation and investment

decision-making (Spence, 1973). In this study, product market competition serves as a signal of a company's ability to navigate competition through efficiency, innovation, and business strategy, while intellectual capital signals its capacity to manage knowledge, human resources, technology, and innovation to create value-added. Effective management of competition and intellectual resources can send positive signals to investors, thereby boosting confidence in the company's prospects and ultimately enhancing firm value. Conversely, intense competitive pressure or ineffective management of intellectual capital can signal negative prospects for the company. Thus, Signaling Theory provides the framework for explaining the impact of product market competition and intellectual capital on firm value (Bafera & Kleinert, 2023).

Firm Value

Firm value reflects the market's assessment of a company's performance, prospects, and ability to create sustainable value. A high firm value indicates that investors have positive perceptions of the company's future prospects and ability to generate returns. In this study, firm value is measured using Tobin's Q, which compares the market value of the company with its total assets. Firm value can be influenced by various internal and external factors, including the company's ability to face market competition and manage its intellectual resources. Therefore, companies need to maintain competitive advantages and effectively manage their resources to increase investor confidence and firm value. Research by (Hermawan et al., 2021) shows that intellectual capital can affect firm value through financial performance, while (Dewi et al., 2023) states that intellectual capital has value relevance for investors.

Product Market Competition

Product Market Competition describes the level of competition faced by a company in the market for similar products or services. Competition encourages companies to improve efficiency, innovation, product or service quality, and business strategies in order to maintain their market position. In the infrastructure sector, competition can be seen in

the ability of companies to obtain projects, offer competitive prices, maintain project quality, and complete projects according to established targets. (Liu et al., 2022) explains that product market competition can function as an external governance mechanism that encourages companies to become more responsive and efficient. However, intense competition can also increase business pressure, reduce profit margins, and increase business risk. Therefore, the level of product market competition can influence investors' perceptions of a company's prospects and ultimately affect firm value. Previous research by (Babar & Habib, 2021) found that product market competition has a positive effect on firm value, while (Firmansyah et al., 2024) found a negative effect.

H1: Product Market Competition influences Firm Value.

Intellectual Capital

Intellectual Capital represents the company's intangible resources, including employee knowledge and competencies, organizational systems, technology, innovation, and other knowledge-based resources used to create added value. Effective management of intellectual capital can improve operational efficiency, innovation, competitiveness, and company performance. (Keter et al., 2024) explains that intellectual capital reflects a company's ability to manage intellectual resources, while Priyanto et al., (2024) shows that knowledge-based resources can support efficiency, innovation, and sustainable competitive advantage. In the perspective of Signaling Theory, effective intellectual capital management can provide a positive signal to investors regarding the quality of the company's resources and future prospects. Investors may respond positively to companies that are able to utilize their human resources, knowledge, technology, and innovation effectively, thereby increasing market confidence and firm value. Previous research by (Sulastri et al., 2021) found that intellectual capital has a positive effect on firm value, whereas (Adelina, 2021) found that intellectual capital does not significantly affect firm value.

H2: Intellectual Capital influences Firm Value.

B. METHOD

In this study, a quantitative approach was applied to infrastructure sector companies listed on the Indonesia Stock Exchange for the 2021–2025 period. Purposive sampling was used to select 57 companies. The total dataset analyzed comprised 285 observations, following the identification of 128 data points as outliers.

Pengukuran Operasional Variabel

Tabel 2.1 Pengukuran Operasional Variabel

Variables	Measurement	References
Product Market Competition (X_1)	$PCM = \frac{Sales - COGS - SG\&A}{Sales}$	(Parra & Winter, 2022)
Intellectual Capital (X_2)	$VAIC_{TM} = VACA + VAHU + STVA$	(Thalia & Hutabarat, 2022)
Firm Value (Y)	$Tobins'Q\ Ratio = \frac{Market\ Value\ Of\ Equity\ (MVE) + Liabilitas}{TA}$	(Martini, 2024)

C. RESULTS AND DISCUSSIONS

The result of data processing show the following test result.

a) Descriptive Statistical Test

Tabel 3.1 Descriptive statistical test result

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Product Market Competition	128	1,106844	2,306648	1,74795470	0,265292737
Intellectual Capital	128	-34,127255	3,790063	-11,41623973	8,852302283
Firm Value	128	0,336281	1,705227	1,02444520	0,305128511
Valid N (listwise)	128				

Source: SPSS 2023

According to descriptive statistics, Product Market Competition has a minimum value of 1.106844, a maximum value of 2.306648, a mean of 1.74795470, and a standard

deviation of 0.265292737. Intellectual Capital has a minimum value of -34.127255, a maximum value of 3.790063, a mean of -11.41623973, and a standard deviation of 8.852302283. Meanwhile, Firm Value has a minimum value of 0.336281, a maximum value of 1.705227, a mean of 1.02444520, and a standard deviation of 0.305128511.

b) Classical Assumption Test

1) Normality Test

Tabel 3.2 Normality Test Result

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		128
Normal Parameters ^{a,b}	Mean	0,0000000
	Std. Deviation	0,27480166
Most Extreme Differences	Absolute	0,078
	Positive	0,078
	Negative	-0,042
Test Statistic		0,078
Asymp. Sig. (2-tailed)		0,052 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

The significance value of 0.056 is higher than 0.05, which indicates that this data is normally distributed.

2) Multicollinearity Test

Tabel 3.3 Multicollinearity Test Result

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		

	Product Market Competition	0,999	1,001
	Intellectual Capital	0,999	1,001
a. Dependent Variable: Firm Value			

The results of the multicollinearity test show that each independent variable has a tolerance value greater than 0.10 and a VIF value that does not exceed 10. This indicates that the regression model is free from indications of multicollinearity.

3) Heteroscedasticity Test

Tabel 3.4 Heteroscedasticity Test Result

Coefficients ^a			
Model		t	Sig.
1	(Constant)	5,391	0,000
	Product Market Competition	-1,975	0,051
	Intellectual Capital	-0,799	0,426
a. Dependent Variable: ABS_RES			

Based on the results of the Glejser test, the significance value of all variables is greater than the significance value of 0.05, so it can be concluded that this regression model is free from heteroscedasticity.

4) Autocorrelation Test

Tabel 3.5 Autocorrelation Test Result

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,433	0,188	0,175	0,277225247	1,914
a. Predictors: (Constant), Product Market Competition, Intellectual Capital					
b. Dependent Variable: Firm Value.					

The Durbin-Watson value of 1.914 is above the upper limit (1.6798) and below 4 minus the upper limit (1.7432), indicating no autocorrelation in the regression model. The assumption of residual independence is met.

c) Multiple Linier Analysis

Tabel 3.6 Multiple Linier Analysis Result

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,496	0,091		16,362	0,000
	Product Market Competition	-0,781	0,151	-0,416	-5,158	0,000
	Intellectual Capital	0,004	0,003	0,114	1,413	0,160
	a. Dependent Variable: Firm Value					

The results of multiple linear regression indicate that Product Market Competition ($\beta = -0.781$; $p = 0.000$) has a significant effect on firm value. . Meanwhile, the Intellectual Capital ($\beta = 0.004$; $p = 0.160$) have no significant effect on firm value. Simultaneously, all two independent variables contribute to explaining variations in firm value in the research sample.

d) F Test

Tabel 3.7 F Test Result

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,217	2	1,109	14,426	0,000 ^b
	Residual	9,607	125	0,077		
	Total	11,824	127			
a. Dependent Variable: Firm Value.						
b. Predictors: (Constant), Product Market Competition, Intellectual Capital						

The F-test results showed a value of 14.426 with a significance level of 0.000 ($p < 0.05$). This indicates that the variables of Product Market Competition and Intellectual Capital simultaneously have a significant effect on Firm Value.

e) T Test

Tabel 3.8 T Test Result

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,496	0,091		16,362	0,000
	Product Market Competition	-0,781	0,151	-0,416	-5,158	0,000
	Intellectual Capital	0,004	0,003	0,114	1,413	0,160
a. Dependent Variable: Firm Value						

a) The effect of product market competition on firm value.

The t-test results indicate that product market competition has a coefficient of -0.781, a t-value of -5.158, and a significance level of 0.000 ($p < 0.05$). Thus, product market competition has a significant negative effect on firm value, meaning H1 is accepted. Intensifying competition can increase business pressure, compress profit margins, and heighten corporate risk. From the perspective of signaling theory, such conditions can serve as a negative signal to investors, thereby reducing confidence and firm value. These results are consistent with the findings of (Firmansyah et al., 2024).

b) The Effect of Intellectual Capital on Firm Value.

The t-test results indicate that Intellectual Capital has a coefficient of 0.004, a t-value of 1.413, and a significance level of 0.160 ($p > 0.05$). Consequently, Intellectual Capital does not have a significant effect on Firm Value, leading to the rejection of H2. This suggests that the

management of intellectual resources is not yet a primary consideration for investors when valuing a company. From the perspective of Signaling Theory, intellectual capital has not yet been able to provide a sufficiently strong signal regarding the company's prospects. These results are consistent with the findings of (Adelina, 2021).

f) R Square Test

Tabel 3.8 T Test Result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,433 ^a	0,188	0,175	0,277225247
a. Predictors: (Constant), Product Market Competition, Intellectual Capital				

The regression results show a coefficient of determination (R^2) of 0.188, meaning that the variables of Product Market Competition, and the Intellectual Capital together explain 18,8% of the variation in Firm Value. Meanwhile, the remaining 81,2% is influenced by other factors not included in this research model.

D. CONCLUSIONS

Based on the research findings, it can be concluded that product market competition has a significant negative impact on firm value. This indicates that heightened market competition can exert pressure on firms and diminish investor perceptions regarding their prospects. Conversely, intellectual capital does not significantly affect firm value, suggesting that the management of intellectual resources is not yet a primary factor considered by investors when valuing infrastructure sector firms. This study is limited to infrastructure sector firms listed on the Indonesia Stock Exchange during the 2021–2025 period and employs only product market competition and intellectual capital as independent variables; consequently, the findings do not account for all factors influencing firm value.

E. SUGGESTIONS

Future research is encouraged to incorporate additional variables that may influence firm value—such as profitability, leverage, firm size, or moderating and mediating variables. Researchers could also expand the scope of study to other corporate sectors and utilize a longer observation period to provide a more comprehensive overview of the factors affecting firm value. For companies, these findings offer insights for managing market competitive pressures more effectively and enhancing the utilization of intellectual capital to generate added value.

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