

THE EFFECT OF INTELLECTUAL CAPITAL AND CAPITAL STRUCTURE ON FIRM VALUE IN FOOD AND BEVERAGE SUB SECTOR COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE IN 2021-2025

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Abstrak

Firm value mencerminkan persepsi dan kepercayaan investor terhadap prospek perusahaan di masa depan, sehingga peningkatannya menjadi tujuan penting bagi setiap perusahaan yang telah go public, termasuk perusahaan sub sektor food and beverage. Penelitian ini bertujuan untuk menguji secara empiris pengaruh intellectual capital dan capital structure terhadap firm value pada perusahaan sub sektor food and beverage yang terdaftar di Bursa Efek Indonesia periode 2021-2025. Penelitian ini merupakan penelitian kuantitatif dengan data sekunder yang diolah menggunakan SPSS 26. Populasi penelitian berjumlah 84 perusahaan dengan teknik purposive sampling sehingga diperoleh 374 observasi perusahaan-tahun. Intellectual capital diukur menggunakan Value Added Intellectual Coefficient (VAIC), capital structure diukur menggunakan Debt to Equity Ratio (DER), dan firm value diukur menggunakan Price to Book Value (PBV). Teknik analisis data menggunakan uji asumsi klasik dan analisis regresi linier berganda. Hasil penelitian menunjukkan bahwa intellectual capital berpengaruh signifikan dan negatif terhadap firm value, serta capital structure berpengaruh signifikan dan negatif terhadap

firm value. Hal ini mengindikasikan bahwa pengelolaan intellectual capital yang belum optimal serta tingkat utang yang tinggi dapat menurunkan nilai perusahaan di mata investor.

Kata Kunci: *Intellectual Capital, Capital Structure, Firm Value*

Abstract

Firm value reflects investors' perceptions of and confidence in a company's future prospects, making its improvement an important goal for every publicly listed company, including those in the food and beverage sub-sector. This study aims to empirically examine the effect of intellectual capital and capital structure on firm value in food and beverage sub-sector companies listed on the Indonesia Stock Exchange during the 2021-2025 period. This is a quantitative study using secondary data processed with SPSS 26. The study population consisted of 84 companies, and a purposive sampling technique yielded 374 company-year observations. Intellectual capital was measured using the Value Added Intellectual Coefficient (VAIC), capital structure was measured using the Debt to Equity Ratio (DER), and firm value was measured using Price to Book Value (PBV). The data analysis technique used classical assumption tests and multiple linear regression analysis. The results show that intellectual capital has a significant negative effect on firm value, and capital structure also has a significant negative effect on firm value. This indicates that suboptimal management of intellectual capital and a high level of debt can reduce firm value in the eyes of investors.

Keywords: Intellectual Capital, Capital Structure, Firm Value

A. INTRODUCTION

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Firm value reflects the level of investor confidence and perception regarding a company's prospects and performance from its inception to the present. High firm value indicates a positive market perception of the company's growth prospects and future profitability, making it a key factor for investors when making investment decisions Nurdin *et al.* (2023) dan Cholid (2025). Consequently, companies are required to consistently maintain their operational performance and financial stability to ensure that firm value remains stable and grows sustainably.

Data on the Price to Book Value (PBV) of food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the 2021–2025 period reveals fluctuating movements and a generally downward trend over the years under observation. These fluctuations indicate that market appreciation for companies in this sub-sector remains unstable; consequently, it is necessary to examine the influencing factors, including intellectual capital and capital structure.

Intellectual capital is a knowledge-based intangible asset comprising human resources, organizational systems, and a company's capacity to generate innovation and customer relationships that create added value (Noor, 2021). According to Resource-Based Theory (RBT), a company's competitive advantage stems from its ability to effectively manage and utilize its resources, including intangible assets such as intellectual capital (Barney, 1991; Adhitanaya *et al.*, 2023). Theoretically, superior management of intellectual capital leads to higher investor valuation of the company. However, some prior studies have actually identified a negative impact of intellectual capital on firm value due to suboptimal management Santana & Adiyadnya (2025) Ermawati *et al.* (2023) dan Lestari & Suarmanayasa (2026), thereby presenting a research gap that warrants further investigation.

In addition to intellectual capital, capital structure is also believed to influence firm value. Based on Trade-Off Theory, firms seek to determine an optimal capital structure by balancing the tax shield benefits associated with debt against the risk of financial distress costs (Wibowo *et al.* 2021 ; Pasaribu, 2023). Several studies have found that capital structure has a significant negative impact on firm value meaning that higher debt levels result in lower firm value as this indicates increased financial risk and less productive asset utilization Sumarman & Wahyuni (2026) dan Ayahu *et al.* (2024).

Based on the foregoing, this study aims to empirically examine the influence of intellectual capital (X1) and capital structure (X2) on firm value (Y) in food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the 2021–2025 period.

THEORETICAL STUDY AND HYPOTHESIS DEVELOPMENT

Resource-Based Theory

Resource-Based Theory, as proposed by Barney (1991), posits that a firm's resources provided they are valuable, rare, difficult to imitate, and difficult to substitute can serve as a source of sustainable competitive advantage. In this study, intellectual capital is viewed as a strategic resource capable of creating added value for the firm. Effective management of intellectual capital is expected to enhance competitive advantage and impact firm value.

Trade Off Theory

Trade-Off Theory explains that firms must consider the balance between the benefits and costs of using debt when determining their capital structure. Myers (1984)

explains that the trade-off approach weighs the tax benefits of debt against the costs of financial distress. Optimal debt usage can benefit the firm, whereas excessive debt can increase financial risk and potentially reduce firm value.

Intellectual Capital

Intellectual capital is an intangible resource possessed by a company comprising knowledge, skills, human resource capabilities, and organizational structures that can be utilized to create value added for the firm (Pulic, 2000).

Capital Structure

Capital structure refers to a company's financing derived from debt and equity. It reflects the company's decisions regarding the sources of funding used to finance its operational activities and investments (Myers, 1984).

Resource-Based Theory (RBT) explains that a company can achieve competitive advantage if it is able to effectively manage and utilize its resources, both tangible and intangible, such as knowledge, skills, innovation, and organizational systems, reflected in intellectual capital (Barney, 1991). Companies with good intellectual capital management will more easily meet stakeholder expectations, thereby encouraging investor interest and ultimately increasing firm value (Melinia & Widyawati, 2021). Based on this description, the following hypothesis is proposed:

H₁: Intellectual capital has a significant effect on firm value.

Capital Structure

Trade-Off Theory explains that companies determine their optimal capital structure by balancing the tax savings benefits of using debt with the costs of potential financial

distress (Wibowo *et al.*, 2021).. An optimal capital structure can minimize the average cost of capital, thereby maximizing firm value (Pasaribu, 2023). Conversely, an unproductive capital structure can increase financial risk and decrease firm value. Based on this description, the following hypothesis is proposed

H₂ : Capital structure has a significant effect on firm value.

RESEARCH METHODS

In this study, a quantitative approach was applied to companies in the food and beverage sector listed on the Indonesia Stock Exchange from 2021 to 2025. A purposive sampling method was used to select 84 companies. The total number of data analyzed in this study was 374 observations.

Pengukuran Operasional Variabel

Tabel 2.1 Pengukuran Operasional Variabel

Variables	Measurement	Reference
<i>Intellectual Capital</i> (X ₁)	VAIC = VACA + VAHU + STVA	(Romano <i>et al</i> 2025).
<i>Capital Structure</i> (X ₂)	$DER = \frac{Total\ Utang}{Total\ Ekuitas}$	(Vongpatchim, 2025).
Firm Value (Y)	$PBV = \frac{Harga\ Saham\ Per\ Lembar\ Saham}{Nilai\ Buku\ Per\ Lembar\ Saham}$ $BVPS = \frac{Total\ Ekuitas}{Jumlah\ Saham\ Beredar}$	(Asari <i>et al</i> 2023).

B. RESULTS AND DISCUSSION

The results of data processing show the following test results:

a) DESCRIPTIVE STATISTICAL TEST

Tabel 3.1 Deskriptive statistical test results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Intellectual Capital	374	-19,91	38,64	4,19993	4,74390
Capital structure	374	-23,65	29,32	1,1043	2,46088
Firm Value	374	-35,18	29,23	2,1080	3,37796
Valid N (listwise)	374				

According to descriptive statistics, Intellectual capital has a minimum value of -19,91, a maximum value of 38,64, a mean of 4,19993, and a standard deviation of 4,74390. Capital structure have a minimum value of -23,65, a maximum value of 29,32, a mean of 1,1043, and a standard deviation of 2,46088. Meanwhile, Firm Value has a minimum value of -35,18, a maximum value of 29,23, a mean of 2,1080, and a standard deviation of 3,37796.

b) Classical Assumption Test

1) Normality Test

Tabel 3.2 Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		244
Normal Parameters ^{a,b}	Mean	0,0000000
	Std. Deviation	0,85825309
Most Extreme Differences	Absolute	0,061
	Positive	0,061
	Negative	-0,051
Test Statistic		0,061
Asymp. Sig. (2-tailed)		0,057 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

The significance value of 0.057 is higher than 0.05, which indicates that this data is normally distributed.

2) Multicollinearity Test

Tabel 3.3 Multicollinearity Test Results

Coefficients ^a		
Model	Collinearity Statistics	
	Tolerance	VIF

1	(Constant)		
	Intellectual Capital	0,990	1,010
	Capital Structure	0,990	1,010
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 Results

Coefficients ^a			
Model		t	Sig.
1	(Constant)	8,467	0,000
	Intellectual Capital	-0,586	0,558
	Capital Structure	1,131	0,259
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 Results

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,625	0,391	0,386	0,80435	2,028
a. Predictors: (Constant), Intellectual Capital, Capital structure					
b. Dependent Variable: Firm Value.					

The Durbin-Watson value of 2,028 is above the upper limit (1.796) and below 4 minus the upper limit (2,204), indicating no autocorrelation in the regression model. The assumption of residual independence is met.

c) Multiple Linier Analysis

Tabel 3.6 Multiple Linier Analysis Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,633	0,084		19,453	0,000
	Intellectual Capital	-0,175	0,027	-0,332	-6,550	0,000
	Capital Structure	-0,845	0,075	-0,572	-11,290	0,000
a. Dependent Variable: Firm Value						

The results of multiple linear regression indicate that Intellectual Capital ($\beta = -0.175$; $p = 0.000$) and Capital Strucrue ($\beta = -0.845$; $p = 0.000$) has a 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 Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	100,038	2	50,019	77,311	0,000 ^b
	Residual	155,923	241	0,647		
	Total	255,961	243			
a. Dependent Variable: Firm Value.						
b. Predictors: (Constant), Intellectual capital and capital structure						

The F-test results showed a value of 77,311 with a significance level of 0.000 ($p < 0.05$). This indicates that the variables of intellectual capital and capital structure simultaneously have a significant effect on firm value.

e) T Test

Tabel 3.8 T Test Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,633	0,084		19,453	0,000
	Intellectual Capital	-0,175	0,027	-0,332	-6,550	0,000
	Capital Structure	-0,845	0,075	-0,572	-11,290	0,000
a. Dependent Variable: Firm Value						

a) The influence of intellectual capital on firm value.

Based on the t-test results in Table 3.8, the Intellectual capital variable has a regression coefficient of -0,175 with a significance level of 0.000 ($p > 0.05$). This indicates that intellectual capital has a significant and negative effect on firm value, thus **H1 is accepted**.

This finding aligns with research by Santana & Adiyadnya (2025) Ermawati *et al.* (2023) dan Lestari & Suarmanayasa (2026), which also found a negative effect of intellectual capital on firm value. These results indicate that increasing intellectual capital is not always followed by increasing firm value, as its influence is highly dependent on the company's ability to manage and utilize it effectively. Based on Resource-Based Theory, competitive advantage is determined not only by resource ownership but also by the ability to manage them optimally (Utami *et al.*, 2025). If intellectual capital is not managed efficiently, investors will not consider it a primary factor in assessing a company's prospects, resulting in a market that has not responded positively to increases in intellectual capital (Seuk *et al.*, 2026).

b) The influence of capital structure on firm value.

The t-test results show that the independent capital structure variable has a regression coefficient of -0.845 with a significance level of 0.000 ($p > 0.05$). Thus, independent capital structure has a significant and negative on firm value, thus **accepted H2**.

This finding aligns with research by Sumarman & Wahyuni (2026) dan Ayahu *et al.* (2024), which found that capital structure has a significant and negative effect on firm value. This indicates that the greater the capital structure or level of debt, the lower the firm value, and vice versa. This condition aligns with the Trade-Off Theory, which explains that excessive use of debt can incur financial distress

costs that outweigh the tax savings benefits obtained (Ahmed *et al.*, 2024 ; Wibowo *et al.*, 2021). High leverage increases the perception of financial risk in the eyes of investors, especially in companies with large amounts of unproductive assets, thereby reducing market appreciation of firm value.

f) R Square Test

Tabel 3.9 R Square Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,625 ^a	0,391	0,386	0,80435
a. Predictors: (Constant), Intellectual Capital, Capital Structure				

The regression results show a coefficient of determination (R^2) of 0.391, meaning that the variables of intellectual capital, capital structure together explain 39,1% of the variation in firm value. Meanwhile, the remaining 60.9% is influenced by other factors not included in this research model.

C. CONCLUSION

Based on the analysis and discussion, it can be concluded that intellectual capital has a significant and negative effect on firm value in food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the 2021-2025 period. Capital structure has also been shown to have a significant and negative effect on firm value. These two findings indicate that suboptimal intellectual capital management and high and unproductive debt usage can reduce a company's value in the eyes of investors.

D. SUGGESTION

Based on these conclusions, companies are advised to improve the effectiveness of intellectual capital management, particularly in the human and structural capital components, to significantly contribute to increasing firm value. Companies are also advised to be more selective in determining their funding structure, considering the balance between tax benefits and the risk of financial distress, so that the capital structure used can support increased firm value. For future researchers, it is recommended to add other relevant variables and expand the research period and sectors to strengthen the generalizability of the research results.

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