

THE EFFECT OF INTELLECTUAL CAPITAL AND FIRM SIZE ON FINANCIAL PERFORMANCE OF MANUFACTURING COMPANIES

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Abstract

This assessment condisers an influence in intangible asset and firm size on a corporate outcomes of manufacturing publicly traded on the Indonesia Stock Exchange. A quantitative method with a causal associative arrangement applied on a research. The study used secondary data obtained from companies' reporting document and Accounting report covering the 2020–2024 period. The subset was decided by means of purposive sampling according to established criteria, resulting in 15 companies and 75 observations. Knowledge resources has assessed using the Value Added Intellectual Coefficient, which reflects the utilization of net asset, human resources, and organizational structure. Firm size was decided using the napierian transformation of aggregate value, while financial performance was represented by Return on Assets. Multiple linear regression was employed to analyze the data using IBM SPSS. The evedence demonstrate that intellectual capital has a positive and substantial impact on financial performance. Firm size also has a positive and substantial impact on financial performance. Furthermore, intellectual capital and firm size jointly have a substantial impact on financial performance. The coefficient of determination points to the fact the two independent variables account for 85.2% of the variation in financial performance, whereas the other 14.8% is relevant to other factors outside the research model. These findings indicate that the effective management of intellectual resources and the productive utilization of company assets can contribute to stronger financial performance. The study highlights the importance of developing internal resources and managing available assets effectively as part of efforts to improve a corporate outcomes of manufacturing companies.

Keywords: *intellectual capital; firm scale; profitability; corporate assets; value creation*



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1. Introduction

The increasingly dynamic business environment encourages companies to enhance their skill to utilize availables for the sake of maintain their sustainability and competitiveness. Intensifying competition requires companies beyond merely to possess adequate physical and financial resources as well to optimize intellectual-resource resources. This condition makes the management of internal resources a crucial aspect in determining the achievement of corporate objectives, including the company's potential to produce sound financial performance. The utilization of intellectual-resource resources has become increasingly relevant because a company's ability to manage intangible assets can contribute worth creation and improved corporate performance (Agustia et al., 2021).

Financial performance is within the group indicators used to assess a company's ability to manage its operational activities and resources. Financial performance provides an overview of the company's effectiveness in generating profits by means of the management of available assets and resources. Financial performance is also a crucial consideration for both internal and external stakeholders in assessing the company's condition and prospects. Research on manufacturing companies points to the fact financial performance can be influenced by various internal factors, making resource management and corporate characteristics important aspects to consider (Tampubolon & Iskak, 2023).

One factor relevant to financial performance is intellectual capital. Intellectual capital represents intangible resources built upon expertise, human resource capabilities, institutional mechanism, and relationships with external parties. Effective management in intangible asset can help companies improve business process efficiency and create greater value. Research on manufacturing companies points to the fact human capital, structural capital, and relational capital can contribute to improving corporate financial performance (Agustia et al., 2021). Other research on manufacturing companies also indicates an association amid intellectualized capital and corporate financial performance (Raharja & Purwanto, 2021).

Intellectual capital has become increasingly important for manufacturing companies because operational activities depend beyond merely on the use of tangible assets as well on knowledge, skills, innovation, and organizational capabilities in managing production processes. Human resource capabilities in performing tasks, corporate systems that sustain functional activities, and relationships with customers and stakeholders can constitute resources that support value creation. Research using the Value Added Intellectual Coefficient (VAIC) approach in manufacturing companies points to the fact the components in intangible asset do not always have the same effect on financial performance. Some components have a substantial impact, whereas others do not show a substantial impact (Sari & Masdupi, 2021). These findings indicate that the contribution in intangible asset to financial performance may vary depending on the components used in its measurement. This variation also indicates a limitation in previous

research because the findings do not yet provide a consistent explanation of whether intellectual capital, when assessed as an overall intellectual-resource resource, is consistently relevant to financial performance across manufacturing companies.

Intellectual capital has also produced different empirical findings across manufacturing companies. Intellectual capital has been found to affect financial performance in manufacturing publicly traded on the Indonesia Stock Exchange (Safrudin et al., 2023). Different findings were reported by Marlina et al. (2021), who discovered that intellectual capital did not affect a corporate outcomes of manufacturing companies. Mujiburrahman and Tarmizi (2022) also discovered that the effects in intangible asset components on financial performance did not consistently demonstrate the same direction or level of significance. These differences suggest that previous studies have not yet provided a conclusive explanation regarding the role in intangible asset in financial performance. The inconsistency is particularly relevant when intellectual capital is examined at the aggregate level because disparities within a contribution of individual components may produce different empirical conclusions. Further research is therefore needed to examine whether intellectual capital as a intellectual-resource resource is relevant to financial performance when tested using a consistent measurement approach and a more specific manufacturing subsector.

In addition to intellectual capital, firm size is a corporate characteristic that may be relevant to financial performance. Firm size generally represents the scale of a company and can be assessed by the amount of assets it owns. Larger companies tend to have greater resources and broader operational capacity. This condition can provide companies with opportunities to expand their business activities and improve their potential to produce profits. Research on manufacturing companies points to the fact firm size has a positive effect on financial performance (Damayanti & Septiyanti, 2022).

Firm size may also be relevant to a company's ability to manage its resources. Companies with larger assets may have greater capacity to conduct operational activities and develop their businesses. However, a larger firm size does not necessarily result in higher financial performance because an increase in firm size may also be accompanied by greater management complexity and operating expenses. Research on manufacturing companies discovered that firm size did not affect financial performance (Cahyaningdyah et al., 2023). Other findings indicate that firm size has a negative effect on financial performance (Natasha & Surjadi, 2023). These differences demonstrate that firm size cannot be interpreted solely as an indication of greater assets leading directly to better financial performance. The effect of firm size may depend on the company's ability to convert its greater resource capacity into productive activities and economic value.

The correlation among firm size and financial performance can be further understood by considering firm size within the Resource-Based View (RBV). On a perspective, firm size is not positioned as a strategic resource in itself, but as a corporate characteristic that can reflect the scale of resources and resource capacity available to a

company. A larger asset base may provide companies with greater access to physical, financial, human, and organizational resources that can support business activities. Greater resource capacity may also enable companies to invest in capabilities, develop operational systems, and utilize intellectual-resource resources more extensively. The relevance of firm size to RBV therefore lies in its potential to indicate the extent of resources that a company can accumulate, organize, and utilize in pursuing performance outcomes. Firm size may support the effective utilization of valuable resources, although greater resource capacity does not automatically generate superior performance when resources are not managed efficiently.

Differences in research findings concerning intellectual capital and firm size reveal a more specific research gap than merely an inconsistency in statistical results. Previous studies have examined intellectual capital and firm size as factors relevant to financial performance, yet several limitations remain. Research on intellectual capital has reported substantial impacts (Safrudin et al., 2023), no substantial impacts (Marlina et al., 2021), and different effects among its components (Sari & Masdupi, 2021). These findings indicate that the existing literature has not established a consistent empirical explanation of how intellectual-resource resources contribute to financial performance. Research on firm size has similarly produced positive, insignificant, and negative findings (Damayanti & Septiyanti, 2022). The limitation is not merely the difference in statistical significance, as well the limited theoretical explanation of how the resource capacity reflected by firm size can support the utilization of internal resources and ultimately relate to financial performance.

Manufacturing companies are a relevant research setting because their business activities involve the management of substantial resources, including physical assets, human resources, and knowledge. The management of these resources is related to the company's ability to conduct production processes effectively and generate profits. Previous studies have also widely used manufacturing companies to examine the relationship amid intellectualized capital and financial performance, yet their findings remain inconsistent (Sari & Masdupi, 2021). A more specific examination of food and beverage companies is relevant because this subsector relies on continuous production activities, human capabilities, institutional mechanism, distribution networks, and relationships with customers and suppliers. These characteristics make the utilization of both intellectual-resource resources and broader resource capacity important in supporting financial performance. Examining this subsector can therefore provide more specific empirical evidence rather than assuming that findings from manufacturing companies as a whole apply uniformly across different subsectors.

Theoretically, the relationship amid intellectualized capital and financial performance can be explained by means of the Resource-Based View (RBV). The RBV perspective argues that valuable internal resources that can be effectively managed may serve as a foundation for companies to create competitive advantages and improve

performance. Intellectual capital is an intangible resource that can provide benefits to companies when it is effectively managed and optimally utilized. Agustia et al. (2021) demonstrate that the management in intangible asset by means of human capital, structural capital, and relational capital can support improved corporate performance. Therefore, the better a company utilizes its intellectual capital, the greater its opportunity to improve financial performance.

Within the same theoretical perspective, firm size can be positioned as a characteristic that reflects resource capacity rather than as an intangible strategic resource itself. Companies with larger assets may possess broader resource availability and greater capacity to sustain functional activities, investment, innovation, and business development. This condition can facilitate the organization and utilization of valuable internal resources, including intellectual capital. Firm size may therefore strengthen the capacity of a company to deploy its resources, although its contribution to financial performance remains dependent on the effectiveness and optimization for resource utilization. The findings of Damayanti and Septiyanti (2022) indicate that firm size has a positive effect on financial performance, suggesting that greater corporate capacity may be one factor relevant to financial performance. This theoretical position provides a clearer connection between firm size and RBV because firm size represents the scale of resources available to the company and the potential capacity to utilize those resources in creating economic value.

According to the foregoing discussion, the research gap lies in the absence of consistent empirical evidence and a sufficiently specific explanation concerning the relationship in intangible asset and firm size with financial performance. Previous studies have not consistently demonstrated whether intellectual capital produces a similar relationship with financial performance across manufacturing companies, particularly when disparities within a contribution of its components are considered (Sari & Masdupi, 2021). Firm size has also produced varied findings, ranging from a positive effect to no effect or even a negative effect (Natasha & Surjadi, 2023). Existing studies also provide limited clarification regarding the position of firm size within the RBV framework, particularly concerning its role as an indicator of resource capacity that may facilitate the utilization of valuable internal resources. This study addresses these limitations by examining intellectual capital and firm size simultaneously and concerning specifically across foods and beverage companies in Indonesia.

The contribution of this study is therefore directed toward providing empirical evidence on whether intellectual capital and firm size are relevant to financial performance within a specific manufacturing subsector. Concerning across foods and beverage publicly traded on the Indonesia Stock Exchange provides a more specific research setting for examining the utilization of intellectual-resource resources and the resource capacity reflected by firm size. The study also contributes theoretically by placing intellectual capital as an internal intellectual-resource resource and firm size as a

characteristic reflecting resource capacity within the RBV framework. This approach is predicted to contribute a clearer insight into how internal resources and corporate resource capacity relate to financial performance.

According to this background, this study is conducted to acquire observational evidence regarding the effect in intangible asset and firm size on financial performance in food and beverage publicly traded on the Indonesia Stock Exchange. The study is entitled “The Effect in intangible asset and Firm Size on Financial Performance of Manufacturing Companies.”

2. Literature Review

The literature review of this study discusses the theoretical foundations and empirical evidence concerning *intellectual capital*, firm size, and financial performance. Previous studies indicate that a company’s internal resources constitute within the group aspects that may explain differences in performance across companies. The correlation among internal resources and financial performance has produced diverse findings, necessitating further examination by considering the mechanisms by means of which resources are converted into economic value and the characteristics of the companies being studied (Suciati et al., 2024).

2.1 Resource-Based View Theory

The *Resource-Based View* (RBV) explains that a company’s competitive advantage and performance can be developed by means of the effective management of valuable internal resources. Such resources consist beyond merely physical assets as well knowledge, skills, and organizational capabilities. Resources can contribute to superior performance when they are valuable and can be effectively organized and utilized within the company. This perspective is relevant to the present study because *intellectual capital* represents within the group intangible resources that can be utilized to create corporate value (Abid et al., 2023).

Within the RBV framework, intellectual capital can be viewed as a resource that supports the transformation of knowledge, employee capabilities, institutional mechanism, and business relationships into economic value. The existence of resources alone does not automatically produce superior performance. Their contribution depends on the company’s ability to combine, manage, and utilize these resources in its operational activities. The study by Suciati et al. (2024) also points to the fact RBV is within the group theoretical foundations widely applied in research concerning *intellectual capital* and financial performance. Therefore, RBV provides a theoretical basis for explaining why disparities within a management of intangible resources may lead to differences in financial performance.

Firm size can also be positioned within the RBV perspective, although it is not considered a strategic resource in itself. Firm size represent the measurement of resources and resource capacity available to a company, particularly when assessed using aggregate value. A larger company may have greater capacity to obtain, combine, and utilize physical, financial, human, and organizational resources. This greater capacity can support the development and utilization in intangible asset in operational activities. The relevance of firm size to RBV therefore lies in its ability to reflect the extent of resources that can potentially be mobilized by a company. The effectiveness of these resources remains dependent on how efficiently management organizes and utilizes them to generate economic benefits.

2.2 Intellectual Capital

Intellectual capital represents the intellectual-resource resources owned by a company, including human resource capabilities, organizational structures, and relationships that can be utilized to create value. Its measurement can be carried out through the Value Added Intellectual Coefficient (VAIC) approach, which consists of Value Added Net asset (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA). These three components represent different aspects of the company's ability to create value by means of the utilization of capital, human resources, and organizational structures. Yulindisti and Helmi (2024) discovered that *intellectual capital* is relevant to financial performance, although the contribution of each component is not necessarily the same.

Value Added Net asset (VACA) describes the optimization for physical and financial capital in generating value added. Net asset provides the basic resources required for companies to carry out production and operational activities. When physical and financial capital is utilized efficiently, the company can generate greater output and economic value from the resources invested. This process is relevant to financial performance because more efficient utilization of capital can increase the value generated from the company's asset base. In relation to ROA, efficient capital utilization can contribute to higher profits relative to the assets used, thereby potentially increasing the company's potential to produce returns from its assets.

Value Added Human Capital (VAHU) reflects the ability of human resources to generate value added by means of their knowledge, skills, experience, and capabilities. Employees contribute worth creation by means of activities such as production, problem solving, innovation, customer service, and operational decision-making. Investment in human capital can improve the efficiency and quality of business processes when employee capabilities are appropriately utilized. Higher human capital efficiency points to the fact the company can generate greater value added from the expenditure relevant to its employees. This mechanism can subsequently contribute to profitability because more productive employees can support the generation of revenue while improving the

optimization for operational activities. In terms of ROA, improved human capital efficiency can contribute to higher profit generated from the company's asset base.

Structural Capital Value Added (STVA) represents the contribution of organizational structures and systems to the creation of value. Structural capital includes procedures, databases, information systems, organizational routines, and other mechanisms that allow employees to perform their functions effectively. Strong structural capital can support the standardization of processes, reduce operational inefficiencies, facilitate knowledge sharing, and maintain organizational knowledge even when individual employees change. These characteristics allow knowledge and employee capabilities to be embedded within institutional mechanism. Efficient structural capital can therefore support more consistent business processes and reduce unnecessary resource utilization, which may contribute to higher profitability and ultimately improve ROA.

The three components of VAIC describe different mechanisms of value creation. VACA emphasizes the optimization for net asset, VAHU emphasizes the productivity of human resources, and STVA emphasizes the institutional mechanism that support the utilization of knowledge and employee capabilities. The interaction of these components allows companies to transform available resources into worth added. Higher value added, when accompanied by effective cost and asset management, can contribute to higher profits generated from the company's assets. This provides a conceptual link amid intellectualized capital and ROA as a measure of financial performance.

The contribution of the components in intangible asset may differ across companies because companies have different resource structures, operational processes, and capabilities. Research using the VAIC approach has also indicated that the components in intangible asset do not always produce the same effect on financial performance. Sari and Masdupi (2021) found disparities within the effects in intangible asset components on financial performance, indicating that certain components may contribute significantly while others may not. Yulindisti and Helmi (2024) similarly found an association amid intellectualized capital and financial performance, although the contribution of individual components was not necessarily identical. These analyses indicate that intellectual capital should not be understood as a single homogeneous resource because each component operates by means of a different value-creation mechanism.

The inconsistency of previous findings may also be related to disparities within the characteristics of the companies examined. The effectiveness of human capital may be more visible in companies whose activities rely heavily on employee knowledge and skills, whereas structural capital may be more important in companies with complex institutional mechanism and standardized production processes. Likewise, the contribution of net asset may differ according to the level of asset intensity of the industry. Differences in company size may also affect the availability of resources and the ability

to utilize intellectual capital. Consequently, variations in the relative contribution of VACA, VAHU, and STVA may contribute to disparities within a observed relationship amid intellectualized capital and financial performance.

2.3 Firm Size

Firm size indicates the scale of a company and is generally assessed according to aggregate value. The amount of assets may reflect the resource capacity available to sustain functional activities and business development. Larger companies generally possess greater resource capacity, which may provide opportunities to expand production, develop operational systems, invest in technology, and utilize human resources. From the RBV perspective, greater resource capacity can provide a broader basis for organizing and utilizing valuable internal resources. However, companies with larger assets do not necessarily achieve better performance because the effectiveness of resource management remains a crucial factor (Candra & Kusumawardani, 2025).

The correlation among firm size and financial performance can be explained by means of the ability of companies to adapt asset capacity into economic value. Larger companies may benefit from economies of scale, broader market access, stronger operational capacity, and greater ability to invest in business development. These conditions can support higher profits when resources are utilized efficiently. At the same time, larger companies may face greater organizational complexity, higher administrative costs, more extensive coordination requirements, and increased operational expenses. The expansion of resources can therefore generate positive financial outcomes only when management is able to utilize those resources productively.

Research findings regarding firm size have also been inconsistent. Davita and Susanti (2024) discovered that firm size does not have a substantial impact on a corporate outcomes of manufacturing companies. Candra and Kusumawardani (2025) similarly emphasize that the amount of assets does not automatically result in better performance because resource management effectiveness remains important. These findings indicate that firm size should not be interpreted as a direct determinant of financial performance. Rather, firm size represent the measurement of resources that may provide companies with greater capacity, while the actual effect on performance depends on the company's ability to transform that capacity into productive activities and value creation.

The inconsistent findings regarding firm size may be influenced by several factors. First, differences in industry characteristics can determine how effectively additional assets are converted into revenue and profit. Asset-intensive manufacturing companies may require substantial physical assets to support production, whereas companies with different operational structures may rely more heavily on human or intellectual-resource resources. Second, company size itself can influence organizational complexity. The

benefits relevant to greater resource capacity may diminish when additional assets are accompanied by inefficient coordination and higher operating costs.

Third, differences in research periods may affect the correlation among firm size and financial performance. Changes in market demand, input costs, technological development, and economic conditions can alter the extent to which asset capacity contributes to profitability. Fourth, differences in measurement and analytical methods may also produce different empirical findings. Firm size can be assessed using aggregate value, sales, or other indicators, while financial performance can be represented by different profitability ratios. The use of different measurements may capture different dimensions of company scale and performance. These factors indicate that inconsistent findings cannot be attributed solely to differences in company characteristics but may also result from differences in industry conditions, research timeframes, evaluation framework, and economic circumstances.

2.4 Financial Performance

Financial performance reflects a company's ability to manage its resources to generate profits. One commonly used measure is Return on Assets (ROA), as this ratio reflects the ability of a company's assets to generate profits. ROA is relevant to the present study because the research condisers how intellectual capital and firm size relate to the effectiveness of resource utilization. Financial performance is a crucial indicator for estimating the functionality of corporate management and the achievement of its economic objectives (Gunawan et al., 2026).

ROA provides a direct connection between resource utilization and financial outcomes because it compares the profit generated by a company with the assets used to generate that profit. A higher ROA points to the fact the company is more effective in generating profit from its asset base. From the RBV perspective, this measure is relevant because resources contribute to performance when they are effectively utilized to produce economic benefits. Intellectual capital can contribute to ROA by improving the optimization forhuman resources, institutional mechanism, and capital utilization, while firm size may provide greater resource capacity that can support business activities.

The relationship amid intellectualized capital, firm size, and ROA can therefore be understood by means of the process of resource transformation. VACA reflects how efficiently net asset generates value added, VAHU reflects the ability of human resources to generate value, and STVA reflects the extent to which institutional mechanism support value creation. These resources and capabilities can improve operational efficiency and value creation, which may ultimately increase profit relative to aggregate value. Firm size, meanwhile, represents the scale of resources that can be utilized to support these processes. The financial outcome of such resource capacity depends on whether the company can effectively organize and transform its resources into economic value.

The different findings reported in previous studies suggest that this transformation process may not occur uniformly across companies. Differences in industry characteristics, firm size, research timeframes, measurement methods, and economic conditions may affect how resources are utilized and how their contribution to financial performance is observed. The present study therefore considers intellectual capital and firm size simultaneously to obtain a more comprehensive insight into their relationship with financial performance, particularly among food and beverage companies in Indonesia.

3. Research Method

This study was designed using a quantitative approach to examine the causal relationship amid intellectualized *capital*, firm size, and financial performance. The research data are secondary data obtained from reporting document and Accounting report of companies available by means of the Indonesia Stock Exchange and the companies' official websites. The research timeframe covers five years, from 2020 to 2024, and focuses on manufacturing companies in the food and beverage sector listed on the Indonesia Stock Exchange. The use of financial statement data over a multi-year period allows for a more comprehensive assessment of the companies' conditions (Raharja & Purwanto, 2021).

The research population consisted of all manufacturing companies in the food and beverage sector listed during the research timeframe. The subset was selected using a *purposive sampling* technique according to the availability of Accounting report and the completeness of the information required to calculate all research variables. The screening process resulted in 15 companies, namely ICBP, INDF, MYOR, UL TJ, SKLT, SKBM, HOKI, STTP, GOOD, CAMP, ALTO, BUDI, AISA, PSDN, and PCAR. With a five-year research timeframe, the study generated 75 observations. The use of specific criteria in determining the subset is consistent with previous research that utilized manufacturing company data and selected companies according to the completeness of the required research information (Sari & Masdupi, 2021).

This study uses *intellectual capital* and firm size as independent variables, while financial performance is treated as the dependent variable. *Intellectual capital* is assessed using the Value Added Intellectual Coefficient (VAIC), which consists of VACA, VAHU, and STVA. The VAIC approach was selected because it provides an overview of a company's ability to create value by means of its intellectual resources (Agustia et al., 2021). Firm size is assessed using the napierian transformation of aggregate value, while financial performance is assessed using Return on Assets (ROA). These measures have also been employed in empirical research examining *intellectual capital* and a corporate outcomes of manufacturing companies (Yulindisti & Helmi, 2024).

Data analysis was carried out through descriptive statistics and multiple linear regression with the assistance of IBM SPSS. Before hypothesis testing, the research model was examined by means of classical assumption tests, including normality, multicollinearity, heteroscedasticity, and autocorrelation tests. Subsequently, the t-test was employed to identify the impact of each independent variable on financial performance, while the F-test was used to determine the simultaneous effect of both independent variables. The ability in intangible asset and firm size to explain variations in financial performance was assessed using the coefficient of determination (R^2). This multiple regression approach has been applied in studies of manufacturing companies to examine factors relevant to financial performance (Davita & Susanti, 2024).

4. Results and Discussion

This study aims to identify the impact in intangible asset and firm size on financial performance in manufacturing companies in the food and beverage sector listed on the Indonesia Stock Exchange during the 2020–2024 period. The study uses 75 observations from 15 companies over a five-year research timeframe. *Intellectual capital* is assessed using VAIC, firm size is assessed using the napierian transformation of aggregate value, while financial performance is proxied by ROA. The selection of these variables is relevant to previous research indicating that *intellectual capital* and firm characteristics may be relevant to a corporate outcomes of manufacturing companies (Davita & Susanti, 2024).

4.1 Classical Assumption Test

Table 1. Normality Test Results

Variable	Kolmogorov-Smirnov Sig.	Description
Intellectual Capital (X1)	0.200	Normally distributed
Firm Size (X2)	0.200	Normally distributed
Financial Performance (Y)	0.200	Normally distributed

Source: SPSS Output Data, 2026

According to Table 1, the Kolmogorov-Smirnov significance value for *intellectual capital*, firm size, and financial performance is 0.200 for each variable. All values are greater than 0.05, indicating that the data meet the normality criterion. Therefore, the data distribution for the three variables does not show any substantial deviation, and the regression analysis can proceed. The use in intangible asset as a research variable is also relevant because research on manufacturing companies points to the fact intellectual capital is relevant to corporate financial performance (Agustia et al., 2021).

Table 2. Heteroscedasticity Test Results

Variable	Sig.	Description
Intellectual Capital (X1)	0.257	No heteroscedasticity
Firm Size (X2)	0.692	No heteroscedasticity

Source: SPSS Output Data, 2026

The heteroscedasticity test results show a significance value of 0.257 for *intellectual capital* and 0.692 for firm size. Both values are greater than 0.05, indicating that there is no indication of heteroscedasticity in the model. This means that the residuals do not exhibit systematic differences in variance according to the independent variables. This condition supports the use of the regression model to examine the relationship amid intellectualized *capital*, firm size, and financial performance. Sofian and Susanto (2024) also examined *intellectual capital* and firm size in analyzing a corporate outcomes of manufacturing companies.

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF	Description
Intellectual Capital (X1)	0.991	1.009	No multicollinearity
Firm Size (X2)	0.991	1.009	No multicollinearity

Source: SPSS Output Data, 2026

According to Table 3, both independent variables have a *tolerance* value of 0.991 and a VIF value of 1.009. These values indicate the absence of multicollinearity in the regression model. Therefore, *intellectual capital* and firm size can be used simultaneously because they do not exhibit an excessive linear relationship. The distinct characteristics of the two variables can also be observed, with *intellectual capital* representing intellectual-resource resources, whereas firm size represent the measurement of the company's assets (Sari & Masdupi, 2021).

Table 4. Autocorrelation Test Results

Durbin-Watson	Description
1.830	No autocorrelation

Source: SPSS Output Data, 2026

The Durbin-Watson value of 1.830 points to the fact the regression model does not experience autocorrelation. Therefore, the residuals across observations do not exhibit a relationship pattern that could interfere with the research model. This condition supports the suitability of the model for testing the effects in intangible asset and firm size on financial performance during the research timeframe.

4.2 Hypothesis Testing

Table 5. Coefficient of Determination Test Results

R	R Square	Adjusted R Square	Std. Error
0.923	0.852	0.848	0.00618

Source: SPSS Output Data, 2026

The R Square value of 0.852 points to the fact *intellectual capital* and firm size jointly account for 85.2% of the observed variation in financial performance in the subset. The remaining 14.8% is relevant to factors outside the variables included in the model. The high R Square points to the fact the two predictors provide substantial explanatory information for variations in ROA within the observed subset.

The relatively high explanatory power may be related to the characteristics of the research subset. The study focuses specifically on 15 food and beverage companies observed repeatedly over five years, resulting in 75 observations. Companies within the same subsector tend to operate under relatively similar production, asset utilization, and business activity characteristics. Financial performance is also assessed using ROA, while firm size is according to aggregate value. The conceptual proximity between asset-related information and ROA may contribute to the model's ability to explain variations in financial performance. The inclusion in intangible asset, which captures the optimization for resources used to generate value, may provide additional explanatory information.

The R Square value should nevertheless be interpreted as the proportion of variation in ROA statistically accounted for by the predictors on a model, rather than as evidence that *intellectual capital* and firm size causally determine 85.2% of financial performance. The research uses secondary data and an observational regression design, so the statistical relationship identified in the model does not by itself establish a causal mechanism. The remaining 14.8% also points to the fact other factors outside the model may be relevant to financial performance.

Table 6. F-Test Results

F-Statistic	Sig.	Description
206.737	0.000	Simultaneously significant

Source: SPSS Output Data, 2026

The F-test results show an F-statistic of 206.737 with a significance value of 0.000. Since the significance value is less than 0.05, *intellectual capital* and firm size simultaneously have a statistically significant relationship with financial performance. The result points to the fact the two variables, when considered together, provide significant explanatory information regarding variations in ROA in the observed companies. This finding is consistent with Agustia et al. (2021), who discovered that the

management in intangible asset can support the performance of manufacturing companies.

From the RBV perspective, the simultaneous result can be understood conceptually by means of the complementary roles of intellectual-resource resources and resource capacity. *Intellectual capital* represents intangible resources that can support value creation, while firm size represent the measurement of resources available to the company. The combination of these characteristics may provide a broader explanation of financial performance than considering either resource-related factor separately. The statistical significance of the model, however, should be interpreted as an empirical association within the observed data rather than direct evidence that these resources cause changes in ROA.

Table 7. t-Test Results

Variable	t-Statistic	Sig.	Description
Intellectual Capital (X1)	16.460	0.000	Positive and substantial impact
Firm Size (X2)	13.476	0.000	Positive and substantial impact

Source: SPSS Output Data, 2026

The results show that *intellectual capital* and firm size have a positive and substantial impact on a corporate outcomes of manufacturing companies in the food and beverage sector listed on the Indonesia Stock Exchange during the 2020–2024 period. The simultaneous test also points to the fact both variables jointly have a substantial impact on financial performance. These findings indicate that a company's ability to manage internal resources, including intellectual resources and owned assets, is relevant to the achievement of financial performance. *Intellectual capital* represents a crucial resource because it encompasses a company's ability to utilize human competencies, capital, and institutional mechanism to create added value (Suciati et al., 2024).

4.3 Effect in intangible asset on Financial Performance

Intellectual capital has a positive and substantial impact on financial performance. This means that higher levels in intangible asset efficiency are relevant to higher ROA among the companies observed on a study. The measurement in intangible asset by means of VAIC, consisting of VACA, VAHU, and STVA, reflects different dimensions of the company's ability to utilize resources in creating value. The finding suggests that intellectual-resource resources constitute a crucial part of the resource structure of the observed food and beverage companies.

The finding can be explained by means of the Resource-Based View (RBV). Withon a perspective, intellectual capital represents an intangible resource that can contribute to performance when the company is capable of organizing and utilizing it effectively. VACA reflects the optimization fornet asset in generating value added.

Efficient use of net asset allows physical and financial resources to support production and operational activities more effectively. When the value generated from capital utilization increases relative to the resources employed, the company has greater potential to generate profit from its asset base. This mechanism provides a conceptual connection between VACA and ROA.

VAHU represents the optimization for human capital in generating value added. Human resources in food and beverage companies are involved in production, quality control, product development, distribution, customer service, and other operational activities. Employee knowledge, skills, and experience can support the efficiency and quality of these activities. When human capital is utilized productively, the company can potentially generate greater value from the expenditure relevant to its employees. The resulting improvement in value creation may be reflected in profitability and, consequently, in ROA.

STVA represents the role of structural capital in supporting the utilization of human and organizational resources. Production procedures, information systems, organizational routines, databases, and internal processes allow knowledge and employee capabilities to be incorporated into the company's operational system. Effective structural capital can reduce inefficiencies, facilitate coordination, and support more consistent business processes. These mechanisms can contribute worth creation and profitability, which may subsequently be reflected in ROA.

The three VAIC components therefore represent complementary mechanisms rather than identical forms of resource utilization. VACA concerns the optimization for net asset, VAHU concerns the contribution of human capabilities, and STVA concerns the organizational infrastructure that supports the use of those capabilities. When these resources are effectively organized, the company can transform available resources in worth added. The empirical result on a study is consistent with this RBV explanation because higher intellectual capital efficiency is statistically relevant to higher financial performance. The result does not mean that the regression directly proves the causal process from each VAIC component to ROA; rather, the RBV provides a theoretical explanation for why such a positive relationship may occur.

These results are consistent with Davita and Susanti (2024), who discovered that intellectual capital has a positive and substantial impact on a corporate outcomes of manufacturing companies. Agustia et al. (2021) also discovered that the management in intangible asset components is relevant to improved financial performance. The consistency of these findings points to the fact intellectual-resource resources can provide economic value when they are effectively utilized. The findings also complement Sari and Masdupi (2021), who reported that the contribution in intangible asset components may differ across companies. Differences among VACA, VAHU, and STVA indicate that the process of value creation may depend on how a company combines capital, human resources, and institutional mechanism.

The food and beverage industry provides a relevant setting for this relationship because the production process requires the coordination of physical assets, employees, institutional mechanism, and relationships with customers and other stakeholders. The ability to combine these resources may be particularly important for maintaining production efficiency and generating profits. The positive relationship identified on a study therefore supports the conceptual argument that intangible resources can complement tangible resources in the process of value creation.

4.4 Effect of Firm Size on Financial Performance

Firm size also has a positive and substantial impact on financial performance. This finding points to the fact larger companies in the observed subset tend to have higher ROA. On a study, firm size is assessed according to the napierian transformation of aggregate value. A larger asset base can provide greater capacity to support production, investment, distribution, technology adoption, and business development. When these resources are utilized effectively, greater resource capacity can be relevant to improved financial performance.

The result can be interpreted by means of the RBV perspective by positioning firm size as an indicator of resource capacity rather than as a strategic resource itself. Companies with larger asset bases may have broader access to resources that can sustain functional activities and the development of organizational capabilities. Greater resource capacity can also provide opportunities to utilize intellectual capital more extensively. The positive coefficient therefore suggests that, within the observed subset and period, the additional resource capacity relevant to larger firm size was statistically related to higher financial performance.

The positive relationship does not imply that increasing company size will indefinitely improve ROA. Larger companies can obtain economies of scale because fixed costs may be distributed over a larger production volume, purchasing capacity may increase, and operational infrastructure can be utilized across broader activities. These conditions may support cost efficiency and profitability. Larger companies may also possess greater financial and organizational capacity to invest in technology, develop products, and respond to market changes.

At the same time, firm expansion may create diminishing returns. As a company becomes larger, coordination becomes more complex, decision-making may involve more organizational layers, and administrative and operating costs may increase. Additional assets may also become less productive when they are not fully utilized. Under these conditions, an increase in aggregate value would not necessarily be accompanied by a proportional increase in profit. The positive finding on a study therefore points to the fact the companies observed during 2020–2024 appear to have benefited, on average, from greater resource capacity, but it should not be interpreted as evidence that firm size will always produce increasingly higher financial performance.

This interpretation is important because previous studies have reported different findings. Davita and Susanti (2024) discovered that firm size does not have a substantial impact on financial performance. Candra and Kusumawardani (2025) also emphasize that larger assets do not automatically result in better performance because the effectiveness of resource management remains important. The difference between these findings and the present result may be related to differences in industry characteristics, company composition, research timeframes, economic conditions, and evaluation framework.

The food and beverage sector may have characteristics that allow asset capacity to contribute relatively directly to operational activities. Production facilities, inventories, distribution infrastructure, and other assets are important for maintaining production and meeting market demand. During the 2020–2024 period, companies also faced changes in demand, input prices, supply conditions, and business adaptation. These conditions may influence how effectively asset capacity is transformed into revenue and profit. Consequently, the positive relationship identified on a study should be understood as a finding specific to the observed companies, sector, period, and measurement model rather than a universal relationship applicable to all manufacturing companies.

4.5 Discussion of the Model and Overall Findings

Overall, intellectual capital and firm size are statistically relevant to financial performance in the observed food and beverage companies. The findings indicate that both intellectual-resource resources and resource capacity provide relevant explanatory information regarding variations in ROA. Intellectual capital is relevant to the optimization for human capital, structural capital, and net asset, whereas firm size represents the scale of assets and the resource capacity available to the company. These findings are consistent with the resource-based view perspective, which emphasizes the importance of internal resources and the company's ability to organize and utilize them to support performance (Abid et al., 2023).

The high R Square of 85.2% provides further information about the explanatory capacity of the model within the observed subset. The result suggests that variations in intellectual capital and firm size correspond closely with variations in ROA in the data analyzed. Several characteristics may contribute to this high explanatory power. The subset is limited to 15 companies within the same food and beverage subsector and covers a five-year period, resulting in observations with relatively similar industry characteristics. The variables also capture closely related aspects of resource utilization: VAIC measures the optimization for resources in generating value added, firm size reflects total asset capacity, and ROA measures profitability relative to assets.

The high R Square should nevertheless be interpreted carefully. It does not mean that intellectual capital and firm size cause 85.2% of financial performance, nor does it imply that other variables are unimportant. The value indicates the proportion of observed variation in ROA statistically accounted for by the predictors included in the regression

model. Factors such as sales growth, leverage, liquidity, operating efficiency, market conditions, managerial decisions, and other company-specific characteristics may also contribute to financial performance but are not included in the present model. The secondary-data and observational design further limits the interpretation of the findings as causal effects.

The overall findings support the theoretical relevance of RBV in explaining the correlation among internal resources and financial performance. Intellectual capital provides intellectual-resource capabilities that can support value creation, while firm size represents the capacity of a company to mobilize and utilize a broader asset base. The empirical findings are consistent with the possibility that companies with more effectively utilized internal resources and greater resource capacity tend to exhibit better ROA within the observed subset. The statistical results, however, should be distinguished from the theoretical mechanism: RBV offers a conceptual explanation for the observed relationships, while the regression results establish statistical associations according to the available secondary data.

These findings provide an empirical contribution by examining intellectual capital and firm size simultaneously in food and beverage publicly traded on the Indonesia Stock Exchange during 2020–2024. The result concerning intellectual capital reinforces the relevance of intellectual-resource resources in explaining financial performance, while the positive correlation among firm size and ROA points to the fact resource capacity was relevant to better financial performance in the observed subset. The differences between the present findings and previous studies that reported insignificant relationships also indicate that the correlation among internal resources and financial performance may depend on the specific characteristics of the industry, companies, research timeframe, and research model.

5. Conclusion and Suggestions

According to the findings, intellectual capital and firm size are positively relevant to financial performance in food and beverage manufacturing publicly traded on the Indonesia Stock Exchange during 2020–2024. The findings provide theoretical support for the Resource-Based View (RBV) by showing that internal resources, particularly intellectual capital, are relevant to financial performance, while firm size can be understood as an indicator of resource capacity rather than a strategic resource itself. The results also indicate that VACA, VAHU, and STVA reflect complementary aspects of value creation by means of net asset, human capital, and structural capital. Practically, companies should strengthen human resource development by means of training, competency development, and knowledge sharing, while improving institutional mechanism, information systems, knowledge management, and internal coordination. Companies should also ensure that production facilities, technology, inventories, and other assets are utilized productively so that greater resource capacity can sustain

functional efficiency and financial performance. The R Square value of 85.2% indicates substantial explanatory capacity within the research model, although it does not imply that intellectual capital and firm size causally determine 85.2% of financial performance.

Future research can develop a more comprehensive model by incorporating variables with clear theoretical relationships with financial performance, such as leverage, liquidity, capital structure, firm growth, and good corporate governance. These variables may provide additional explanations related to financing decisions, resource availability, resource allocation, investment opportunities, and resource control. Future studies may also use a longer research timeframe and broader subsets covering other manufacturing subsectors or industries to examine the stability and generalizability of the findings under different economic and industry conditions. Mediation or moderation models can be applied to investigate the mechanisms by means of which intellectual capital contributes to financial performance, including the roles of innovation capability, operational efficiency, competitive advantage, or organizational characteristics. Separating VACA, VAHU, and STVA in future analysis is also recommended to identify which dimension in intangible asset contributes most strongly to ROA and to provide a more detailed explanation of the value-creation mechanism proposed by RBV.

6. References

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