The Impact of Intellectual Capital on Firm Performance: An Application of VAIC Model

(Empirical Study on Energy Sector Companies Listed on the Indonesia Stock Exchange in 2020-2022)

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Abstract. This study aims to analyze the impact of intellectual capital (IC) on firm performance as measured by Tobin's Q. In this study, intellectual capital is measured using the Value Added Intellectual Coefficient (VAIC) method which consists of three components, namely Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA). This study implements a quantitative method with panel data and is analyzed using the Random Effect model. The results show that VACA has a positive and significant influence on firm performance, while VAHU does not show a positive influence, and STVA shows a positive although insignificant influence. The findings suggest that the efficient use of physical and financial capital plays a crucial role in increasing the market value of the firm, while the role of human capital and structural capital still needs to be optimized. This study indicates that proper management of intellectual capital can be an important strategy to build sustainable competitive advantage.

Keywords: *Firm Performance, Intellectual Capital, STVA, Tobin's Q, VACA, VAIC, VAHU*

INTRODUCTION

Today's industry faces increasingly complex dynamics, where the success of a company depends not only on its physical assets but also on its intellectual capital. In this era of intense global competition, companies are required to improve their capacity, where the quality of internal resources plays an important role in achieving this goal. These resources take the form of intangible assets, which can make a tangible contribution to a company's competitive advantage, namely human knowledge and technology (Saraha et al., 2022). This is also stated in PSAK No. 19 on intangible assets. Intangible assets are a form of improvement made by a company. Companies typically only report on financial performance, thereby limiting the inclusion of information regarding the additional value held by the company. This value is referred to as intellectual capital. Intellectual capital encompasses the knowledge, skills, and innovations possessed by the company's employees and management.

Intellectual capital is created through the exchange and combination of knowledge, and this is made possible, among other things, by social relationships (Eva & Milena, 2015). Intellectual capital is an intangible asset based on knowledge management and the ability to create value for customers (Vishnu & Gupta, 2014). Information about intellectual capital is crucial for investors to assess a company's growth, so companies are required to disclose their intellectual capital. Intellectual capital disclosure refers to the communication of information about the intellectual resources owned by a company, which include various elements such as labour, customers, information technology, processes, research and development, and strategic statements (Aida & Rahmawati, 2015). Generally, intellectual capital is divided into three components: customer capital, human capital, and structural capital. According to Yuliusman & Putra (2023), customer capital is the value a company derives from its relationships with customers, including loyalty, satisfaction, brand image, and long-term relationships built with customers. Human capital is the value possessed by a company's employees, which is achieved through skills, knowledge, experience, and abilities. Human capital is considered to improve the

overall performance of a company because it is an important asset for the company that can contribute to productivity, innovation, and competitiveness. Meanwhile, structural capital is the capital owned by the company that can support employees in carrying out their duties, which includes infrastructure, processes, and knowledge bases.

These three components are included in the VAIC (Value Added Intellectual Coefficient) method. The VAIC method is a form of corporate effort to create business success and demonstrate its ability to create value added (VA). According to Lestari & Sapitri (2016), VAIC has three components, namely value added capital employed (VACA), value added human capital (VAHU), and structural capital value added (STVA). VACA is an indicator of VA created by physical capital units (Ulum, 2013). VA is the difference between output and input, where output (OUT) represents revenue and all products and services sold, while input (IN) is the cost incurred in obtaining output. VACA itself is a form of the relationship between VA and capital employed (CE), where it is expected that a company can obtain a greater return (assuming one unit of CE) than other companies, indicating that the company utilises CE more effectively than other companies. Furthermore, VAHU shows the contribution of employees in creating added value for the company, indicating how effectively a company utilises its human capital. Finally, STVA identifies how well a company utilises its structural capital. STVA is a tool for measuring the contribution of structural capital to the added value obtained by the company.

The process of managing intellectual capital is not always smooth and faces a number of challenges. Some of these include accurately assessing a company's intellectual assets, integrating intellectual capital into business strategy, and quantitatively measuring its impact on company performance. Company performance is a measure of the company's success. Company performance is demonstrated by the amount of profit the company generates. A company that can effectively manage its working capital is considered to have good performance. Company success is closely tied to company performance, so intellectual capital is closely related to performance and success. One method of measuring company performance is using Tobin's Q as a proxy. Tobin's Q is a metric for measuring company performance, particularly its value, reflecting management's ability to manage company assets (Puspita & Wahyudi, 2021). The Tobin's Q value is obtained by comparing the total market value of shares and the market value of debt with capital in production assets, which is then used as a metric to measure company performance.

According to the research findings of Fathi & Farahmand (2013) intellectual capital is defined as an important asset strategy for maintaining competitive advantage, where the researchers state that intellectual capital has a significant positive impact on ROA, ROE, and GR. The variable with a significant positive impact on all three ratios is only STVA, while VACA and VAHU are not significant with GR. These findings are inconsistent with Marbun & Saragih (2018) who state that only customer capital (VACA) has a significant positive impact, while human capital (VAHU) and structural capital (STVA) do not have a significant impact on company performance. Additionally, research by Xu & Liu (2020) also revealed results that differ from the two previous studies, namely that VACA has the most significant influence on company performance, VAHU has a positive influence on ROA and ROE, while STVA does not have a significant influence on company performance.

In this study, the influence of intellectual capital is analysed in energy sector companies listed on the Indonesia Stock Exchange (IDX). The energy sector is a collection of equities related to energy

production or supply, which is associated with the exploration and development of oil or gas reserves, as well as oil and gas drilling and refining (Chen, 2022). The energy business also includes integrated electricity companies, such as renewable energy and coal. Various factors make energy stocks attractive to investors. Investing in energy equities allows one to benefit from rising oil prices, as oil and gas prices typically rise during periods of inflation, making energy equities a useful inflation hedge (Brovet, 2024). To maintain investor confidence, energy sector companies are required to improve their performance. To achieve this goal, energy sector companies must be able to innovate. The energy sector industry is inseparable from the use of advanced technology and complex infrastructure. Therefore, in order to maximise the use of such technology, the energy sector heavily relies on human resources to manage company assets. Thus, intellectual capital in the form of knowledge, expertise, and innovation possessed by employees is very much needed. The success of the energy sector is driven by the intellectual capital it possesses. Energy sector companies that are able to manage their intellectual capital well can improve their long-term performance.

There are components used to calculate intellectual *capital in company performance, namely customer capital (VACA), human capital (VAHU), and structural capital (STVA). Although these factors are commonly used in analysing the influence of intellectual capital on company performance, there are differences in the results of previous studies. Therefore, this study aims to identify and analyse the impact of intellectual capital on company performance. Furthermore, this research is expected to contribute to various parties, particularly in providing insights into the impact of intellectual capital on company performance, with the hope that it can serve as a guideline for related research on listed companies on the stock exchange that have not yet been studied. Furthermore, it can serve as a study or literature that can be used to improve understanding of intellectual capital and as empirical evidence that can be used to strengthen the influence of intellectual capital on company performance in energy companies listed on the Indonesia Stock Exchange.*

METHOD

This type of research is quantitative research, which uses numerical data in its statistical analysis. The data collection method applied in this study is the documentation method, which involves gathering information relevant to the research, then recording and analysing it. The reports used in this study are the company's annual financial reports obtained through the official website of the Indonesia Stock Exchange (www.idx.co.id). The population used in this study includes energy sector companies listed on the Indonesia Stock Exchange for the period 2020-2022. The sampling method applied in this study is purposive sampling. Purposive sampling limits sample selection based on specific criteria. Based on the purposive sampling method that has been conducted, the following results were obtained:

Table 1. Sampling Criteria

No	Criteria	Total
1	Energy sector companies listed on the Indonesian stock exchange for the period 2020-2022	77
2	Energy sector companies that do not present financial reports and annual reports in the period 2020-2022	(15)
3	Energy sector companies that do not present complete data related to the variables used in the study in the period 2020-2022	(14)

4	Energy sector companies that listed in 2020-2022	0
	Number of company samples	46
	Amount of research data	138

1. Energy sector companies listed on the Indonesian stock exchange for the period 2020-2022
2. Companies thatr eport complete annual financial reports that contain data on the variables used in the study
3. Companies with incomplete data are not used as research samples
4. Companies that listed in 2020-2022 are not included in the sample

Furthermore, to research the data in this study, descriptive test, model selection, t tes, f test, and R-square test are required. This study was conducted to examine the effect of intellectual capital variables (VACA, VAHU, and STVA) on company performance using the indicator of Tobin's Q.

RESULT AND DISCUSSION

Descriptive Statistical Test

Based on the descriptive statistical test that has been carried out, the results of the average value (mean), median, maximal, minimum, and standard deviation of the variables studied are obtained.

Table 2. Descriptive Test Results

Variable	Obs	Mean	Std. dev.	Min	Max
y	138	55.48551	37.46711	2	118
x1	138	48.96377	33.26808	2	108
x2	138	86.39130	50.19428	1	171
x3	138	75.89855	4361900	1	149

Source: data processed (2025)

The results show that the average value of Tobin's Q is 55.48551, which indicates that the market value owned is much higher than the value of the asset. The higher the value of Tobin's Q, then the possibility of the company having a competitive advantage is also greater. However, the high standard deviation value indicates that some companies have high valuation while some are very low. This indicates significant inequality between companies. The varying values are also shown at maximum and minimum, which indicates disparity in performance between companies.

Furthermore, for the average value of VACA of 48.96377 shows that in general, the companies create a fairly high value in the procurement of physical capital efficiency. However, when viewed from the high standard deviation, there are differences that are significant between companies. This can also be seen from the high variation in the minimum value which is very low, indicating that losses are likely to be experienced by some companies, while the maximum value indicates that some companies can utilize their capital well.

In the human capital variable, it generally shows a very large contribution with an average value of 86.39130, which means that companies can rely on human capital to increase their value. Inequality is also shown in the management of human capital between companies as shown by the unbalanced VAHU, where some companies have very high values while some are very low. This indicates a significant difference in reliance on the utilisation of human capital, where some companies may rely more on technology or physical assets.

For the structural capital variable, seen from the average value of 75.89855, it shows that the majority of companies have fairly strong structural capital. Structural

capital here plays an important role in creating added value for the company. Although it has a high average value, some companies show a very low value seen from the minimum value of 1, meaning that there are still companies that have not been able to utilise their structural capital. The high standard deviation value shows that energy companies have various strategies in utilising their structural capital.

Multicollinearity Test

Multicollinearity is a statistical phenomenon in which there is a strong or even perfect relationship between variables (Oke et al., 2019). The purpose of multicollinearity testing is to assess the relationship between variables. This test is carried out by analysing the correlation coefficient value between independent variables. The appropriate correlation coefficient value to indicate the absence of multicollinearity is < 0.85. Based on the research conducted, the correlation coefficient between X_1 and X_2 is 0.5876, X_1 and X_3 are -0.3983, X_2 and X_3 are -0.4793. Therefore, it is concluded that this research data does not have multicollinearity.

Table 3. Multicollinearity Test Results

	x1	x2	x3
x1	1,0000		
x2	0,5876	1,0000	
x3	-0,3983	-0,4793	1,0000

Source: data processed (2025)

Heteroscedasticity Test

Heteroscedasticity is a phenomenon of violation of data statistical assumptions, which can cause a high level of data error. The heteroscedasticity test aims to test the differentiation of variance and residuals between variables. This test uses the Breushch-Pagan test with the criteria if the probability value > 0.05 then it does not experience heteroscedasticity (H_0), while if the probability value < 0.05 then it experiences heteroscedasticity (H1). In this study, the probability value shows 0.7931, indicating a value greater than 0.05. Therefore, it is concluded that this study does not experience heteroscedasticity.

Table 4. Heteroscedasticity Test Results

Aspek	Keterangan
Ch^{i2} (1)	0,07
p-value	0,7931
Kesimpulan	Tidak terdapat heteroskedastisitas

Source: data processed (2025)

Hypothesis Testing

Table 5. Linear Regression Results

R-squared:			Obs per group:	
			Min	
Within	=	0,0817	=	3
			avg	
Between	=	0,0005	=	3,0
			max	
Overall	=	0,0210	=	3
			Wald chi2 (3)	
			=	5,95
			Prob > chi2	
			=	0,1142

y	Coefficient	Robust std. err.	z	P > |z|	[95% conf.	interval]
x1	0.27646	0.1242498	2.23	0.026	0.0329349	0.5199851
x2	-0.0615342	0.0698884	-0.88	0.379	-0.1985131	0.0754446
x3	0.0160476	0.0864898	0.19	0.853	-0.1534692	0.1855645
_cons	46.04702	11.36978	4.05	0.000	23.76265	68.33138

Source: data processed (2025)

Multiple Linear Regression Analysis

The regression model equation estimated in this study is:

$$Y = 46.04702 + 0.27646X_1 - 0.0615342X_2 + 0.0160476X_3$$

From this equation, the interpretation obtained is as follows:

1. Assuming all independent variables are constant, the value of Tobin's Q is 46.04702.
2. The coefficient value of VACA is 0.27646. This indicates that if all other variables remain constant, then an increase of one unit of VACA will cause an increase in Tobin's Q value of 0.27646.
3. The coefficient value of VAHU is -0.0615342, which means that if VAHU increases by one unit, Tobin's Q will decrease by 0.0615342, assuming other variables remain constant.
4. The coefficient value for STVA is 0.0160476, which means that an increase in STVA by one unit will increase Tobin's Q by 0.0160476, assuming other variables do not change.

Partial Significance Test (T test)

The t test is a test conducted to identify the individual significance of each independent variable on the dependent variable. The hypothesis for conducting the t test is:

H_0: Variable coefficient = 0, then the variable has no significant impact on Tobin's Q

H_1: The variable coefficient ≠ 0, then the variable has a significant impact on Tobin's Q

The criterion for this test is to look at the probability value, where if the p-value < 0.05, the variable is considered significant. Conversely, if the p-value ≥ 0.05 then the variable is considered insignificant. In table 4, it can be seen that the probability value of VACA is 0.026 < 0.05, VAHU is 0.379 > 0.05, and STVA is

0.853 > 0.05. From these results it can be concluded that only VACA has a significant positive effect on Tobin's Q. While VAHU and STVA do not. Meanwhile, VAHU and STVA have no significant impact on Tobin's Q.

Simultaneous Significance Test (F Test)

The F test is a test conducted to identify the effect of independent variables together on the dependent variable. This test is based on the following hypothesis:

H_0: regression coefficient = 0, then all independent variables have no simultaneous effect on Tobin's Q

H1: regression coefficient ≠ 0, then there is at least one independent variable that has a significant effect on Tobin's Q

The criteria for this test are based on the probability value. If the p-value < 0.05, then H0 is rejected. This means that the independent variables jointly influence Tobin's Q. Conversely, if the p-value ≥ 0.05 then H0 fails to be rejected, meaning that the independent variables simultaneously have no effect on the dependent variable. From the tests that have been carried out, the regression output of the f test results is obtained, namely the chi2 probability of 0.1142. These results indicate that H0 is accepted, so VACA, VAHU, and STVA together do not significantly affect Tobin's Q.

Test Coefficient of Determination (R-Square)

The R-Square test is used to estimate how well the regression model can explain variations in the dependent variable. The R-Square value is in the range of 0 to 1, where if the R-Square is close to 1, the model is very good at explaining the variation in Y. Meanwhile, if the R-Square is close to 0, the model is very poor at explaining the variation in Y. Based on the regression results, it is found that the overall R-Squared value is 0.021. Overall R-squared measures the overall predictive ability of the model in describing the total variation in the dependent variable. The value shows that only 2.1% of the variation in Tobin's Q is explained by the independent variables. This minimal value indicates that the model has almost no capacity to explain Tobin's Q.

The Effect of Value Added Capital Employed (VACA) on Company Performance

Value Added Capital Employed (VACA) is an indicator used to represent how efficiently an entity uses its tangible assets in an effort to create added value. VACA illustrates the company's ability to convert its financial resources into tangible outcomes, which indicates that VACA is a very crucial factor in assessing the company's success. As a significant metric in the concept of resource based theory (RBT), VACA specifically assesses how well a firm is able to generate value which can provide insight into the operational efficiency and overall performance of the firm. From the perspective of RBT proposed by Barney (2001), it is argued that firms with valuable, rare, and difficult-to-imitate strategic resources can transform these advantages into superior market performance. The findings of this study indicate that VACA has a significant positive effect on firm performance. This proves that energy companies are able to optimise their employee capital optimally. Several studies that have been conducted state similar results regarding the relationship between VACA and company performance. Putri et al. (2023) dan Loen (2022) state the same thing that companies with higher capital utilisation efficiency experience significantly higher market valuations, which indicates that efficient capital utilisation is a major signal for investors regarding potential future earnings. This statement is also supported by Sutisna et al. (2023) who stated that, together with structural capital, VACA significantly impacts firm performance in various sectors.

The Effect of Value Added Human Capital (VAHU) on Company Performance

Value Added Human Capital (VAHU) is simply everything other than

physical capital such as property, equipment, and financial capital (Pasban & Nojedeh, 2016). Human capital consists of creativity and innovation, knowledge and expertise, added value, competitive advantage, and increasing customer satisfaction in the company. Based on the concept of resource-based theory, human capital should be a strategic asset that drives competitive advantage, emphasising that companies can achieve superior performance not only through tangible assets but also skills, knowledge, and experience. According to Uysal (2020), uman capital is a valuable and irreplaceable asset; however, its contribution to firm performance can only be fully realised if it is complemented by complementary resources and effective management practices. Based on the results of this study, VAHU has no significant impact on company performance. This finding indicates the company's inability to properly manage and utilise its human resources. This also implies that a possible contributing factor is the heavier valuation of other aspects, which allows investors to prioritise tangible assets and traditional financial metrics over the contribution of human capital. This is in line with the research of Trisanti et al. (2023), which revealed that among the various components of intellectual capital, only VACA significantly impacts firm value, while VAHU does not have a significant impact on market valuation as measured by Tobin's Q. This is confirmed by Suzan & Kusworo (2022), that although value added capital employed (VACA) has a positive effect on firm performance, VAHU sometimes does not show a direct effect on firm value.

Effect of Structural Capital Value Added (STVA) on Company Performance

Structural capital in the literature refers to organisational systems and structures that are able to optimally support employee intellectuals in order to achieve better performance (Bontis, 1998). Structural capital is the capacity of an organisation or company to meet routine processes and systems that support employee efforts in achieving maximum results in intellectual aspects and business as a whole (Sumiati et al., 2022). The idea of Suzan & Kusworo (2022) highlights STVA as an important metric that describes the ability of structural capital to generate value for the company's activities. This is in accordance with resource-based theory which states that STVA serves as an important component of intellectual capital that reflects the firm's ability to leverage its structural resources. RBT reveals that firms can achieve competitive advantage through their resources which include intangible assets such as organisational processes, patents, and intellectual property. However, this study states the opposite result, where there is a positive direction but not enough to be called significant. This proves that energy companies have not been able to utilise their structural capital optimally. Despite being an important aspect in supporting the company's competitive advantage, the lack of effect of STVA may be due to the limited increase in structural capital undertaken by the company. On the other hand, STVA is a long-term capital support, so the results cannot be seen in the short term. In a study conducted using the Partial Least Squares Structural Equation Model (PLS-SEM), it was stated that STVA did not significantly affect firm value, which means that in sectors where intangible assets play an important role, the benefits of structural capital may not be directly reflected in market valuations (Trisanti et al., 2023). Another study conducted by Jonnius & Marsudi (2021) states that the profitability ratio contributes significantly to Tobin's Q compared to STVA.

CONCLUSIONS

Based on the findings and analyses conducted, it is concluded that the components of intellectual capital assessed by the VAIC approach have varying contributions to firm performance:

1. Value Added Capital Employed (VACA) has a positive and significant impact on firm performance measured using Tobin's Q. This proves how the efficient utilisation of physical and financial capital contributes directly to generating added value. This proves how the efficient utilisation of physical capital and financial capital contributes directly in generating added value and competitive advantage of the company. This finding is also consistent with the concept of Resource Based Theory (RBT) which states that employee capital as a productive asset that is managed efficiently can be a sustainable competitive advantage for the company.
2. Value Added Human Capital (VAHU) shows a negative and insignificant effect on firm performance. This result indicates that although human capital is a strategic key in increasing economic value and competitive advantage, energy companies are still unable to manage it optimally. As a result, the company's contribution to market value is also not achieving maximum results.
3. Structural Capital Value Added (STVA) shows a positive but insignificant impact. This positive impact is so low that it is interpreted as insignificant. This indicates that in a short time span, structural capital has not been able to reflect the company's performance.

Overall, this study identifies the conclusion that of the three components of intellectual capital, only VACA consistently provides a significant contribution to the improvement of firm performance.

SUGGESTIONS

Based on the research results that show that not all components of intellectual capital contribute significantly to organisational performance, the suggestions are as follows:

1. Maximising the utilisation of physical and financial assets (VACA)

   Since VACA is proven to have a positive and significant impact on business performance, management is advised to further improve efficiency in the utilisation of physical and financial assets. This can be done by developing a more targeted investment strategy and ensuring that the assets owned actually contribute to the value creation process.
2. Strengthen human resource management and development (VAHU)

   Although employees are an important asset for the company, the results of this study show that VAHU has not had a significant impact. Therefore, companies need to develop training programmes, skills enhancement, and reward systems that encourage employees to make optimal contributions to company goals.
3. Developing company systems and processes (STVA)

   Structural capital, such as work systems, technology, and organisational culture, does not have a significant impact in the short term. However, these elements are important to build gradually as they can provide a strong foundation for productivity and efficiency.

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BIBLIOGRAPHY

Aida, R. N., & Rahmawati, E. V. I. (2015). Pengaruh Modal Intelektual dan Pengungkapannya Terhadap Nilai Perusahaan : Efek Intervening Kinerja Perusahaan. *JURNAL AKUNTANSI & INVESTASI*, 96–109. https://doi.org/10.18196/JAI-2015.0035

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, *27*(6). https://doi.org/https://doi.org/10.1177/014920630102700602

Bontis, N. (1998). Intellectual Capital: an exploratory studythat develops measures and models. *Management Decision*, *36*(2), 63–76. https://doi.org/https://doi.org/10.1108/00251749810204142

Brovet, T. (2024). *The Best Energy Stocks to Buy Now*. Morningstar. https://www.morningstar.com/stocks/best-energy-stocks-buy

Chen, J. (2022). *Energy Sector: Understanding Which Types of Companies Comprise It*. Investopedia. https://www.investopedia.com/terms/e/energy_sector.asp

Eva, J., & Milena, J. (2015). Diversity Management as a Tool of Managing Intellectual Capital. *Journal of Competitiveness*, *7*(4), 3–17. https://doi.org/10.7441/joc.2015.04.01

Fathi, S., & Farahmand, S. (2013). Impact of Intellectual Capital on Financial Performance. *International Journal of Academic Research in Economics and Management Sciences*, *2*(March), 5–17.

Jonnius, J., & Marsudi, A. S. (2021). PROFITABILITY AND THE FIRM'S VALUE. *DINASTI INTERNATIONAL JOURNAL OF MANAGEENT SCIENCE*, *3*(1). https://doi.org/https://doi.org/10.31933/dijms.v3i1.977

Lestari, N., & Sapitri, R. C. (2016). Pengaruh Intellectual Capital Terhadap Nilai Perusahaan. *Jurnal Akuntansi, Ekonomi Dan Manajemen Bisnis*, *4*(1), 28–33.

Loen, M. (2022). Pengaruh intellectual capital terhadap nilai perusahaan pada sektor industri dasar dan kimia di bursa efek indonesia tahun 2020-2022. *Jurnal Akuntansi Dan Bisnis Krisnadwipayana*, *9*(3). https://doi.org/https://doi.org/10.35137/jabk.v9i3.808

Marbun, G., & Saragih, A. E. (2018). Pengaruh Intellectual Capital Terhadap Kinerja Perusahaan Pada Perusahaan Perbankan yang Terdaftar Di Bursa Efek Indonesia. *JRAK*, *4*(1), 39–60.

Oke, J. A., Akinkunmi, W. B., & Etebefia, S. O. (2019). USE OF CORRELATION , TOLERANCE AND VARIANCE INFLATION FACTOR FOR. *Global Scientific Journal*, *7*(5).

Pasban, M., & Nojedeh, S. H. (2016). A Review of the Role of Human Capital in the Organization. *Procedia - Social and Behavioral Sciences*, *230*, 249–253.

Puspita, G., & Wahyudi, T. (2021). Modal Intelektual (Intellectual Capital) dan Nilai Perusahaan Pada Industri Manufaktur. *Owner: Riset & Jurnal Akuntansi*, *5*(Ic), 295–306.

Putri, R. A., Maryani, M., & Damayanti, D. (2023). Pengaruh Intellectual Capital Terhadap Kinerja Keuangan Perusahaan Makanan dan Minuman

yang Terdaftar di Bursa Efek Indonesia. *Jurnal Akuntansi Keuangan Dan Manajemen*, *4*(4). https://doi.org/https://doi.org/10.35912/jakman.v4i4.2348

Saraha, F. A., Gusmiarni, G., & Nuzulul, N. (2022). Pengaruh Modal Intelektual dan Mekanisme GCG terhadap Nilai Perusahaan. *Owner*, *6*(3), 3281–3295. https://doi.org/10.33395/owner.v6i3.1056

Sumiati, S., Wijayanti, R., Yuana, P., & Nikmah, C. (2022). Improving company value: the role of human capital, structural capital, capital employed, investment decisions, and manager's attitude to risk. *BISMA (Bisnis Dan Manajemen)*, *14*(2), 110–123. https://doi.org/10.26740/bisma.v14n2.p110-123

Sutisna, E., Pasolo, F., Sutisman, E., & Mariana, L. (2023). The Effect of Intellectual Capital on Financial Company: Empirical Study from Indonesia. *Journal of Humanities and Social Sciences Innovation*, *3*(1). https://doi.org/https://doi.org/10.35877/454RI.daengku1347

Suzan, L., & Kusworo, J. S. P. (2022). COMPANY SIZE AND INTELLECTUAL CAPITALON COMPANY VALUE IN THE CONSUMER GOODS INDUSTRY SECTOR LISTED ON THE INDONESIA STOCK EXCHANGE. *Jurnal Akuntansi, Audit Dan Sistem Informasi Akuntansi*, *6*(3). https://doi.org/10.36555/jasa.v6i3.1901

Trisanti, T., Saputro, J. A., Algifari, & Arini, P. R. (2023). Assessing the Relationship between Company Value and Intellectual Capital Disclosure Before and During Covid-19: Evidence Indonesia IT Companies. *JEFMS JOURNAL*, *06*(07). https://doi.org/https://doi.org/10.47191/jefms/v6-i7-01

Ulum, I. (2013). MODEL PENGUKURAN KINERJA INTELLECTUAL CAPITAL DENGAN IB-VAIC DI PERBANKAN SYARIAH. *INFERENSI, Jurnal Penelitian Sosial Keagamaan*, *7*(1), 185–206.

Uysal, G. (2020). Mediating role of human capital between shrm and firm performance. *Management Studies*, *8*(4). https://doi.org/https://doi.org/10.17265/2328-2185/2020.04.007

Vishnu, S., & Gupta, V. K. (2014). Intellectual capital and performance of pharmaceutical firms in India. *Journal of Intellectual Capital*, *15*(1), 83–99. https://doi.org/10.1108/JIC-04-2013-0049

Xu, J., & Liu, F. (2020). The Impact Of Intellectual Capital On Firm Performance: A Modified and Extended VAIC Model. *Journal of Competitiveness*, *12*(1), 161–176. https://doi.org/10.7441/joc.2020.01.10

Yuliusman, D., & Putra, D. W. E. (2023). *Kunci Sukses Investasi R&D: Tata Kelola Intellectual Capital, Finance Slack, dan Corporate Governance*. CV. Sketsa Media.