EDUCORETAX
Volume 4 No.2, 2024

INTELLECTUAL CAPITAL AND FIRM VALUE: MODERATING ROLES OF TAX INCENTIVES IN R&D

Muhammad Fadhil Kusuma Wardana[1)], Ilham Permadana[2)], Amrie Firmansyah [3)]*

[1)] fadhil_4132230003@pknstan.ac.id, **Politeknik Keuangan Negara STAN**
[2)] ilham_4132230035@pknstan.ac.id, **Politeknik Keuangan Negara STAN**
[3)] amriefirmansyah@upnvj.ac.id, **Universitas Pembangunan Nasional Veteran Jakarta**
* correspondence author)

Abstract
This study investigates the effect of intellectual capital on firm value with tax incentives in research and development as a moderating variable. Utilizing the tax incentive as a moderating variable becomes this study's novelty since research that uses that moderating variable has never been conducted. The sample used in this study is 144 firm-year companies in the manufacturing sector listed on the IDX during the 2017-2022 period. The study used panel data and multiple linear regression analysis methods with a random effect model. The result of this study indicated that intellectual capital aggregately has a positive effect on the firm value. Individually, capital employed and human capital positively affect firm value, while structural capital does not significantly affect firm value. Furthermore, the tax incentives are proven to weaken the effect of aggregate intellectual capital and capital employed on firm value. Conversely, tax incentives strengthen the relationship between structural capital and firm value. Meanwhile, tax incentives are not moderating the relationship between human capital and firm value. The result of this study can be a piece of additional information for OJK to understand the firm's intrinsic value and consideration in formulating the regulation, disclosure, and supervision policy.
Keywords: Firm value, Intangible asset, Intellectual capital, Research and development, Tax incentives, Value-added intellectual coefficient (VAIC).

Abstrak
Penelitian ini bertujuan untuk menginvestigasi pengaruh modal intelektual terhadap nilai perusahaan dengan insentif pajak terhadap penelitian dan pengembangan sebagai variabel moderasi. Penggunaan variabel moderasi tersebut menjadi novelty dalam penelitian ini karena belum pernah digunakan pada penelitian sebelumnya. Sampel yang digunakan dalam penelitian ini adalah 144 tahun-perusahaan dari perusahaan-perusahaan sektor manufaktur yang terdaftar di BEI selama periode 2017-2022. Penelitian ini dilakukan dengan menggunakan data panel dengan metode analisis regresi linier berganda random effect model. Hasil penelitian menunjukkan bahwa modal intelektual secara agregat memiliki efek positif terhadap nilai perusahaan. Secara terpisah, capital employed dan human capital terbukti memiliki efek positif terhadap nilai perusahaan sedangkan structural capital tidak memiliki efek signifikan terhadap nilai perusahaan. Insentif pajak terbukti melemahkan efek dari modal intelektual secara agregat dan capital employed terhadap nilai perusahaan. Sebaliknya, insentif pajak memperkuat hubungan antara structural capital dan nilai perusahaan. Sementara itu, insentif pajak tidak memoderasi hubungan antara human capital dan nilai perusahaan. Hasil penelitian ini dapat menjadi informasi tambahan bagi OJK untuk memahami nilai intrinsik perusahaan dan menjadi dasar dalam pengambilan keputusan terkait regulasi, pengungkapan dan pengawasan.
Kata Kunci: Aset tidak berwujud, Modal intelektual, Nilai perusahaan, Penelitian dan pengembangan, Valued added intellectual coefficient (VAIC).

INTRODUCTION

The research on firm value has grown significantly in the last decades. Firm value becomes significant because it will be followed by high shareholder prosperity (Arsyad et al., 2021). Investigating the firm value will provide insight into the company's ability to generate profit and shareholder value (Aprilianda & Nur, 2023; Lubis et al., 2023). It will help the investor to make an informed decision and optimize their investment portfolios (Aprilianda & Nur, 2023; Arrahman & Mahardika, 2023; Ferjiana & Natalylova, 2023; Kurniawati et al., 2023; Ria, 2023).On the company side, investigating the firm value assists the management in evaluating the overall company performance (Lubis et al., 2023; Ria, 2023). It can be a benchmark to compare the company's performance with its competitors within the industry (Lubis et al., 2023; Ria, 2023). Hence, it helps the company consider its position in market competition and competitiveness (Aprilianda & Nur, 2023). It also can guide the manager in

making strategic decisions to increase the company's worth (Dancaková et al., 2022). Hence, investigating the determinant of the firm value can benefit both the company and the investor. However, previous scholars about firm value still yielded various results according to company sector, country, company stock, and stock exchange market characteristics. Hence, this study aims to fill the empirical gap by adding more empirical evidence related to the topic.

Previous studies on the effect of intellectual capital on firm value in Indonesia still yielded inconsistent results. Several studies suggested that intellectual capital positively affects the firm value, such as in pharmaceutical companies (Marcellina et al., 2022), IT companies (Trisanti et al., 2023), state-owned companies (Suzan & Ardiansyah, 2023) and LQ45 companies (Appah et al., 2023). Meanwhile, several studies also suggested that intellectual capital has no significant influence on a firm value, such as in the banking sector (Parimarma & Kufepaksi, 2023) and listed companies in IDX between 2011 and 2015 (Subaida et al., 2018). Even more, intellectual capital was shown to affect the firm value in mining companies negatively (Hanifah et al., 2023) and real estate and construction companies (Anggraini et al., 2020). In manufacturing companies, Suhendra (2015) stated that directly, intellectual capital has a negative effect on firm value but will generate positive results if supported by the firm performance. Studies conducted by Ayuningtyas et al. (2023), Astiti & Imbayani (2022) and Wiryawati et al. (2022) showed that intellectual capital has a positive effect on firm value. Meanwhile, Lucky & Tanusdjaja (2023) stated that intellectual capital negatively affects firm value. However, several studies, such as Febry (2018), Hakim & Priantinah (2018) and Wulandari et al. (2018), also stated that intellectual capital has no significant effect on firm value. The difference between this study and the previous study is the use of tax incentives on R&D as the moderating variable, which is still rarely used in previous studies.

Responding to this trend, several countries offer tax incentives to encourage and reward business expenditure on intellectual assets, particularly research and development and worker training (Warda, 2006). In Indonesia, the Indonesian government has increased the number of tax incentives in recent years. In 2019, Indonesia's Government enacted Government Regulation 45 2019 concerning the super deduction tax on R&D and worker training. In 2021, the Ministry of Finance enacted Minister of Finance Regulation Number 18 of 2021, giving another tax incentive for foreign experts in Indonesia. These regulations aim to increase the intensity of R&D activities in Indonesia by lowering the tax expense for research and development activities.

Several studies were conducted to investigate the impact of tax incentives on R&D activities. Several studies showed that R&D incentives have increased the investment in R&D (Dechezleprêtre et al., 2016; Ernst & Spengel, 2011) and corporate performance for innovative companies (Makeeva et al., 2019). The tax incentives on R&D aim to increase the intensity of R&D, which can lead to the creation of new knowledge, experience, and information, which are key components of intellectual capital. By investing more in R&D, companies can enhance their intellectual capital, which is crucial for value creation within the enterprise (Parlak, 2021). Several studies found that rising intangible capital in the form of R&D expenditure has a consistently positive impact on an enterprise's market value across diverse industries and countries (Dobrovič et al., 2021; Hulten & Hao, 2008; Piekkola, 2016; Tongliang & Wenyi, 2018). Hence, this study will use tax incentives as the moderating variable, which has rarely been employed in previous studies.

This study has several contributions. First, this study complements the empirical gap in previous literature by providing additional empirical evidence about the effect of intellectual capital on firm value in manufacturing companies. Furthermore, this study also complements the previous study by involving tax incentives in R&D as a moderating variable that promotes intellectual capital creation by providing additional tax benefits in R&D activities. This can be

additional information in evaluating the interaction between capital intellectual and firm value in financial accounting literature. For practical implications, the result of this study can be additional information for OJK to understand the firm value, which can be considered in formulating the regulation and supervision policy. In addition, this research can also be used by the Indonesia Tax Authority to evaluate the effectiveness of tax incentives policies on research and development.

LITERATURE REVIEW

Resource-based view theory (RBV) explains that the capability to utilize resources plays a key role in creating competitive advantage (Barney, 2001; McGee, 2015; Wernerfelt, 1984). RBV theory states that a company must manage its resources effectively using its capabilities (Putra & Gantino, 2021). A firm can preserve and manage its advantages by possessing distinct and unique resources from its rivals (Indra & Trisnawati E., 2020). Unique resources are those valuable assets within a company that are rare, not easily duplicated by competitors, and impossible to replace, giving the company a distinct advantage in the marketplace (Widyaningdyah & Aryani, 2013). The RBV theory can be applied to intellectual capital as it fulfills the criteria for strategic and unique resources, which, if managed effectively, will generate a competitive advantage for the company and enhance its value (Dewi & Dewi, 2020). Based on RBV theory, the uniqueness of a company's intellectual capital can be leveraged to increase the value and performance of the company. Intellectual capital can be used to maximize a company's opportunities or manage potential threats (Doloksaribu et al., 2023; Mariani et al., 2023).

The concept of intellectual capital, which includes intangible and ideological capital, was first proposed by John Kenneth Galbraith in 1969 (Nama & Kanungo, 2023). Intellectual capital is a company's intangible asset that gives an advantage over its competitors, both explicit and tacit knowledge. Explicit knowledge is easily recognized and documented, while tacit is harder to document and transfer as it is mainly acquired from the experience of individuals or groups (Salzano et al., 2016). Engelman et al. (2015) stated that intellectual capital is a company's knowledge assets and how those assets are expected to change over time. The formation and use of intellectual capital to generate profit has become a necessary direction in the activities of modern companies (Strelnikova, 2022). The presence of these elements in the system of intellectual capital formation is extremely important in modern enterprises operating in a global economy (Berzkalne & Zelgalve, 2014). Good utilization of intellectual capital can lead to many benefits, such as more competent and motivated employees, increased customer loyalty, and more efficient utilization of company resources (Abdulaali, 2018).

Even though intellectual capital is intangible and hard to measure accurately, many studies have shown that it can significantly impact a firm's value. Several studies have investigated the impact of intangible assets on firm value. Wang (2015) concluded that intellectual capital and corporate governance have a positive impact on firm valuation in the Taiwanese tourism industry, and corporate governance influences the positive relationship between intellectual capital and firm value. This is also in line with the research conducted by Ni et al. (202), which found that intellectual capital positively affects firm value in Taiwan. Firms having employees with abundant knowledge will possess an advantage for innovation, and the excellent reputation, a part of goodwill for oriental firms, would encourage people to consume and invest more. In Indonesia, several studies showed that intellectual capital positively affects firm value in LQ45 companies (Appah et al., 2023), pharmaceutical companies (Marcellina et al., 2022), IT companies (Trisanti et al., 2023), banking companies (Oktaviani & Sukarmanto, 2023) and state-owned companies (Suzan & Ardiansyah, 2023). In the manufacturing sector, previous studies also showed that intellectual capital positively

affects firm value (Astiti & Imbayani, 2022; Ayuningtyas et al., 2023; Wiryawati et al., 2022). According to RBV theory, a company that can manage its resources, including intellectual capital, can leverage its value (Wiryawati et al., 2022). According to Ayuningtyas et al. (2023), a company with strong intellectual capital can develop effective resource management strategies to enhance business value. Additionally, intellectual capital is considered the superior company resource, which is difficult to imitate. Thus, it will provide value enhancement for the company in the marketplace.

H_1: Intellectual capital aggregately has a positive effect on firm value.

The signal theory explains how management conveys signals about the company's condition through the company's financial information disclosure (Spence, 1978). The financial information included in the disclosure will represent the company's condition in the past, present and future (R. R. Dewi & Rohman, 2023). The provided information will give a positive or negative signal for investors to make investment decisions (Ulfa & Prasetyo, 2018). In providing reliable information, the company must disclose every action conducted, including the action taken in response to tax incentives given by the government. Hence, the signal theory can be applied in this study since the company's financial performance disclosure can signal the stakeholders and investors to analyze the company's performance and assess how tax incentive affects the company's performance and value (R. R. Dewi & Rohman, 2023).

Tax incentives are incentives governments or tax authorities provide to encourage people or firms to do certain economic activities that provide common benefits. Responding to those advantageous effects that intellectual capital could provide on firm value022, 33 of the 38 OECD (The Organization for Economic Cooperation and Development) countries offer research and development incentives, up from 19 OECD countries back in 2000 (OECD, 2023). In Indonesia, the Indonesian government has increased the number of tax incentives in recent years. In 2019, Indonesia's Government enacted Government Regulation 45 2019 concerning the super deduction tax on R&D and worker training. In 2021, the Ministry of Finance enacted Minister of Finance Regulation Number 18 of 2021, giving another tax incentive for foreign experts in Indonesia. Hence, research activities can be promoted to boost technology, reduce costs, and increase the firm's willingness to invest (in new technology) (Esmaieli & Ahmadian, 2018). These tax incentives lower the tax expense for research and development activities, thus providing additional benefits for the company. With those government tax incentives, firms are expected to boost their intangible asset through research and development activities, thus increasing their competitive value among other firms in the market. Hence, the existence of tax incentives can give an advantage to the company and create a more conducive investment climate to maintain and support the company's sustainability (Na et al., 2021). This can signal the investors and stakeholders to invest more in the company, which will eventually leverage the firm's value.

Several studies show that tax incentives on R&D have increased investment in R&D (Dechezleprêtre et al., 2016; Ernst & Spengel, 2011; Na et al., 2021) and corporate performance for innovative companies (Makeeva et al., 2019). Tax incentives caused an economically and statistically significant increase in patenting, and there is no evidence that new patenting was of significantly lower value. The stimulation is not only for the firm directly affected but also from the spillover effect for other indirectly affected firms (Dechezleprêtre et al., 2016). Small firms seem to have a higher stimulation effect (Ernst & Spengel, 2011). Furthermore, according to Makeeva et al. (2019), the patent box provides the highest probability of success in R&D, while the super deduction incentive leads to decreased efficiency of money invested. Several studies have also found that rising intangible capital in R&D expenditure consistently impacts an enterprise's market value across diverse industries and countries (Piekkola, 2016; Tongliang & Wenyi, 2018). In Chinese manufacturing, the capital market regards R&D activities as a

powerful means for the company to gain a competitive advantage and invest in business development. Hence, investment in R&D can increase the firm value (Tongliang & Wenyi, 2018). In Finnish Countries, R&D investment provides higher benefits in organizational-intensive and R&D-intensive firms (Piekkola, 2016). Lastly, research about the impact of tax incentives on firm value has been conducted by Dewi & Rohman (2023), which proved that tax incentives positively affect firm value. Tax incentives can increase investor trust in the investment climate in Indonesia, which triggers investors to invest more. This result is similar to Hanlon et al. (2019), which stated that tax incentives could significantly increase investment, affecting firm value. The tax payment reduction will result in the firm having more cash available to reinvest in the business, raise worker compensation, reduce prices to consumers, or return value to shareholders.

H_2: tax incentives strengthen the positive effect of aggregate intellectual capital on firm value.

METHODS

This study uses a quantitative approach to analyze secondary data through intermediary media (Sugiyono, 2021). The data is taken from the financial statements of companies in the manufacturing sector for the 2017–2022 period published on IDX's related companies' websites. The manufacturing sector is chosen because of two reasons. First, manufacturing companies use intellectual capital and physical assets to sharpen their competitive edge (Ahangar, 2011). Second, it is the most susceptible to tax competition (Klemm & Parys, 2012). The years 2017–2022 are chosen to determine the effect of capital intellectual and firm value before and after implementing tax incentive policies. The data in this study were collected using literature study and documentation.

The population used in this study is the manufacturing sector companies listed on the IDX in the 2017-2022 research period using purposive sampling. The criteria used in this study are as follows:

Table 1. List Population and Sample

No	Criteria	Companies
1	Manufacturing sector companies listed on IDX during the 2017-2022 research period.	168
2	Companies in the manufacturing sector that are not providing financial reports consecutively during the 2017-2022 research period.	(17)
3	Companies that do not disclose their intangible asset and other data are needed completely during the 2017-2022 research period.	(96)
4	Companies that have a net loss during the 2017-2022 research period.	(30)
Outliers		(1)
Number of Research Sample		24
Number of Processed Data (16 x 6)		144

The dependent variable of this research is firm value measured using Tobin's Q Ratio. Tobins's Q is considered to provide the most useful information because it is focused on the investors and the creditors (Marcellina et al., 2022). Tobins'Q was widely used in previous studies as a proxy of firm value, such as in Ahmed et al. (2019), Deniswara et al. (2019), Doloksaribu et al. (2023), Gaol et al. (2021), Marcellina et al. (2022), Parimarma & Kufepaksi (2023), Putri & Wirajaya (2023) and Salvi et al. (2020).

Tobin's Q ratio can be calculated using the following formula:

$$\text{Tobin's Q} = \frac{(\text{Market Value of Equity} + \text{Preferred Share} + \text{Book Value of Liabilities})}{\text{Book Value of Asset}}$$

Intellectual capital is the independent variable in this study. Independent variable is measured using the Value-Added Intellectual Coefficient (VAIC) component developed by Wang (2013), which was also used in previous studies such as in Doloksaribu et al. (2023) and

Gaol et al. (2021). Wang (2013) stated that VAIC is an instrument measuring the efficiency level of three companies' capitals: Capital Employed (CE) proxied as Value Added Capital Employed (VACA); Human Capital (HC) proxied as personnel cost or Value-Added Human Capital (VAHU); and structural capital (SC) which reflects the different between company value-added subtracted by value-added created by human capital proxied as Structural Capital Value Added (STVA). VAIC then can be calculated using the following formula:

$$\text{VAIC} = \text{VACA} + \text{VAHU} + \text{STVA}$$

$$\text{VACA} = \frac{(\text{Opearing Income} + \text{Personnel Cost})}{(\text{Total asset} - \text{Intangible Asset})}$$

$$\text{VAHU} = \frac{(\text{Opearing Cost} + \text{Personnel Cost})}{\text{Personnel Cost}}$$

$$\text{STVA} = \frac{\text{Operating Income}}{(\text{Operating Income} + \text{Personnel Cost})}$$

This study uses a moderating variable, i.e., the tax incentive. The moderating variable is the variable that strengthens or weakens the relationship between the dependent variable and the independent variable (Duli, 2019). The tax incentive reflects the tax incentives given by the government to encourage investment in intellectual capital and worker training (Warda, 2006). The tax incentive implemented in Indonesia can be seen as follows

Table 2. List of Tax Incentives for Intellectual Capital

Tax Incentive	Detail	Max rate or year	Year Implemented
Super Deduction For R&D	Super deduction provides an opportunity for a company to decrease the taxable income on some amount of money in R&D	300%	2019
Super Deduction For worker training	Super deduction provides an opportunity for a company to decrease the taxable income on some amount of money in workers' training	200%	2019
Tax Holiday for Expert	A Foreign expert who works in Indonesia are free from income tax for certain years	4	2021

Source: Makeeva et al. (2019), Peraturan Menteri Keuangan (2021), and Peraturan Pemerintah RI (2019).

The tax incentives were then measured and calculated using the model developed by (Klemm & Parys, 2012) as follows:

Table 3. Tax incentive variables, assumption, and calculation

Variable	Assumption and Calculation
CIT Rate	If multiple rates exist, the manufacturing rate for the most profitable firms is used.
Tax Holidays	The longest available corporate income tax holiday of the manufacturing sector in years
Investment Allowance	The most generous investment allowance of the manufacturing or export sector is in percent of the investment. If a tax credit is offered, it is divided by the tax rate for comparability.

Source: Klemm & Parys (2012)

Because the tax holidays variable before 2021 will be 0, the tax incentive variables in this study need to be calculated aggregately to avoid errors in the model. Because the corporate tax rate affects tax incentives oppositely, we then use the 1-Tax Rate as a proxy for the CIT tax rate. The tax incentive variable is calculated as follows.

$$\text{Tax Incentive} = \text{Investment Allowance} + \text{Tax Holidays} + (1 - \text{CIT})$$

Key control variables are included to increase the model's goodness of fit. Leverage is proxied as debt ratio, also used in previous studies such as Nguyen & Doan (2020) and William et al. (2019). Debt can leverage the value of a company, while excessive use of it in the company will cause financial difficulties and reduce the company's value or even cause bankruptcy (Dang et al., 2019). An increase in the use of debt is a negative signal to investors because it will reduce the shareholders' interest in the company if it cannot return the loan (Gomes I. et al., 2019). The following formula calculates leverage:

$$\text{Debt Ratio (DEBT)} = \frac{\text{Total Liability}}{\text{Total Asset}}$$

Firm size is a classification scale of the company's size to achieve the goal (Ulfa & Prasetyo, 2018). The greater the company, the more access it will have to the funding source because the number and the value of assets that can be pledged as collateral are greater (Gomes I. et al., 2019). If they can use their asset and manage them well to maximize profits, the company can provide a high rate of return for shareholders and easily obtain funding (Harmaini, 2021). The firm size is measured as the natural logarithm of the total assets, which was used in previous studies such as in Gomes I. et al. (2019), Parimarma & Kufepaksi (2023), William et al. (2019) and Zéghal & Maaloul (2010).

$$\text{Firm Size} = \ln(\text{Total Assets})$$

The multiple linear regression analysis method examines the study's hypotheses. Various regression models have been evaluated. Models 1 and 2 examine the relationship between VAIC and the firm value and VACA, VAHU, and STVA and the firm value:

Model 1

$$\mathbf{Tobin's\ Q_{it} = \beta_0 + \beta VAIC_{it} + \beta TAXINC_{it} + \beta SIZE_{it} + \beta LEV_{it} + \varepsilon it}$$

Model 2

$$\mathbf{Tobin's\ Q_{it} = \beta_0 + \beta VACA_{it} + \beta VAHU_{it} + \beta STVA_{it} + \beta TAXINC_{it} + \beta SIZE_{it} + \beta LEV_{it} + \varepsilon it}$$

Regression models 3 and 4 examine the effect of the interaction between VAIC and tax incentive (tax allowance, tax holiday, and income tax rate) on a firm value and the effect of interaction between VACA, VAHU, and STVA and tax incentive (tax allowance, tax holiday, and income tax rate) on firm' value.

Model 3

$$\mathbf{Tobin's\ Q_{it} = \beta_0 + \beta VAIC_{it} + \beta TAXINC_{it} + \beta VAIC_{it} * TAXINC_{it} + \beta SIZE_{it} + \beta LEV_{it} + \varepsilon it}$$

Model 4

$$\mathbf{Tobin's\ Q_{it} = \beta_0 + \beta VACA_{it} + \beta VAHU_{it} + \beta STVA_{it} + \beta TAXINC_{it} + \beta VACA_{it} * TAXINC_{it} + \beta VAHU_{it} * TAXINC_{it} + \beta STVA_{it} * TAXINC_{it} + \beta SIZE_{it} + \beta LEV_{it} + \varepsilon}$$

RESULT AND DISCUSSION

The result of descriptive statistics is given in Table 4. Based on the data collected in this study, all variables have higher average values than the standard deviation. It indicates that the distribution of those variables is even. In addition, we also analyze the data from the range between the average value and the minimum value and the range between the average value and the maximum value. Except for the firm value, all variables have balanced ranges between the average values and their minimum and maximum values. Conversely, the dependent variable has an unequal range between the average and their minimum and maximum values. These results indicate that this study's independent and moderating variables show an adequate data distribution.

Table 4. Descriptive Statistics for Selected Variables

Variable	Obs	Mean	Std. dev.	Min	Max
TOBINS'Q	144	1.9625	1.6904	0.4000	12.9600
VAIC	144	3.4626	0.9133	1.6800	5.9000
VACA	144	0.2182	0.0917	0.0531	0.4829
VAHU	144	2.7476	0.9386	1.1456	5.1889
STVA	144	0.4970	0.1858	0.1500	1.2416
TAXINC	144	4.4317	2.5152	1.7500	7.7800
SIZE	144	29.5635	1.8425	25.8000	33.6600
LEV	144	0.3994	0.1576	0.0900	0.7900

Source: Processed by using the STATA Application

TOBIN'S Q exhibits a mean of approximately 1.96 with a standard deviation of 1.69, indicating substantial variability in firm market valuation. Meanwhile, VAIC has a mean of 3.46 and a relatively narrow standard deviation of 0.91, suggesting a more consistent performance. VACA shows a mean of 0.22 and a standard deviation of 0.09, implying moderate variability in firm efficiency in utilizing capital. VAHU has a mean of 2.75 and a standard deviation of 0.94, highlighting considerable diversity in human capital management across firms. STVA has a mean of 0.4970 and a standard deviation of 0.1858, indicating modest variability in this metric. TAXINC exhibits a mean of 4.4317 and a standard deviation of 2.5152, suggesting significant diversity in tax incentives across the years observed. The SIZE variable shows a mean of 29.5635, indicating the average size of the observed firm, with a standard deviation of 1.8425, suggesting some variability in size. Lastly, LEV displays a mean of 0.3994, indicating the average leverage level across the sample, with a standard deviation of 0.1576, suggesting some dispersion in leverage ratios.

Table 5. Multicollinearity Test Results

	VAIC	**VACA**	**VAHU**	**STVA**	**TAXINC**	**SIZE**	**LEV**
VAIC	1						
VACA	0.1567	1					
VAHU	0.9787	0.0891	1				
STVA	-0.1072	-0.1747	-0.2856	1			
TAXINC	-0.0857	-0.0967	-0.0775	0.0192	1		
SIZE	-0.1783	-0.1703	-0.0668	-0.4524	0.0930	1	
LEV	-0.3458	-0.4119	-0.3458	0.2530	0.0771	0.2750	1

Source: Processed by using the STATA Application

Based on the result in Table 5, the highest correlation coefficient is 0.9787 between VAIC and VAHU. These variables will be used in different models, so there will be no multicollinearity problem. Meanwhile, the other variable's coefficient is still lower than the critical values of ± 0,8 or ±0.9 proposed by Farrar & Glauber (1967), also used in Salvi et al. (2020). This value indicates that there is no multicollinearity in all models, and there is no correlation between the independent variables. We conduct several tests to determine the best regression model, i.e., the Chow Likelihood test, the Lagrange Multiplier Breusch Pagan test, and the Hausman test. The test results indicate that the best model is the random effect model, with details as follows.

Table 6. The Best Model Selection Tests Result

Tests	Model 1	Model 2	Model 3	Model 4
Chow Likelihood test	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model	Fixed Effect Model
Lagrange Multiplier Breusch Pagan test	Random Effect Model	Random Effect Model	Random Effect Model	Random Effect Model

Hausman test	Random Effect Model	Random Effect Model	Random Effect Model	Random Effect Model
Best Model Result	Random Effect Model	Random Effect Model	Random Effect Model	Random Effect Model

Source: Processed by using the STATA Application

The random effect model is chosen according to the model selection. The random effect model used generalized least squares (GLS) to estimate. Hence, the classic assumption test can be ignored (Gujarati, 2009). Table 7 (appendix 1) shows every model's random effect regression results. The P>|t| values shown in the table have been adjusted by dividing P>|t| values from the STATA application by two to find one-tailed statistical test results illustrated by the study hypothesis. A one-tailed statistical test occurred when an alternative hypothesis determines a thing is higher or lower than the others (Kasim, 2008).

The effect of intellectual capital aggregately on a firm' value

The first hypothesis testing result indicates that intellectual capital aggregately positively affects firm value. This is similar to studies conducted by Ahmed et al. (2019), Chandra (2017), Marcellina et al. (2022), Nguyen & Doan (2020), Putri & Wirajaya (2023), and Ulfa & Prasetyo (2018). Intellectual capital is considered the source of competitive advantage obtained by a company, creating a gap between market value and book value (Boujelbene & Affes, 2013; Chen et al., 2005; Edvinsson, 1997; Rieg & Vanini, 2015; Ruta, 2009; Yang & Lin, 2009). Companies with strong intellectual capital could create effective strategies to manage resources and analyze firm value. Intellectual capital helps companies understand and utilize their knowledge, skills, and experience to make good business decisions. Effective resource allocation could leverage the company's competitive advantage based on RBV theory. Furthermore, the uniqueness of a company's intellectual capital can be leveraged to enhance the value and performance of the company. Intellectual capital can maximize a company's opportunities or performance and manage potential threats (Doloksaribu et al., 2023; Mariani et al., 2023). Intellectual capital can also help companies build good relationships with external parties, such as government funding, which can be a competitive advantage in manufacturing pieces of evidence (Ayuningtyas et al., 2023). In the manufacturing sector, the competitive advantage benefits the company in two ways. First, competitive advantage can provide lower production costs through efficient value-chain activities. Second, it can also deliver more value to customers with the same cost of production (Hansen & Mowen, 2007). Both of these will increase the company's profitability since several studies showed that price still determines buying decisions in Indonesia (Mediti & Murti, 2020; Pratiwi et al., 2020; Sari & Mahanani, 2017). Higher profitability will trigger shareholders to invest more in the company, thus increasing the firm value.

Additionally, the capital employed (VACA) individually positively affects firm value. This is in line with the study conducted by Ahmed et al. (2019), Deniswara et al. (2019), Marcellina et al. (2022), Nuryaman (2015), and Puspita & Wahyudi (2021). A company that can establish good relationships with internal and external parties can create more competitive advantages. For instance, companies can choose reliable and quality distributors or increase customer loyalty (Marcellina et al., 2022). Companies can also choose reliable suppliers who can provide lower production costs. Those advantages can lead to a higher competitive advantage, increasing firm value.

Furthermore, individual human capital (VAHU) positively affects firm value. This is similar to the study by Ahmed et al. (2019), Arief (2014), and Marcellina et al. (2022). Human capital can create value for the company through motivation, commitment, competency, and effective teamwork. The value added that the employee could contribute is done through the company competency development, transfer of knowledge from employee to company and

management cultural change (Deniswara et al., 2019; Parimarma & Kufepaksi, 2023). Different people managing the same asset can create different value added. Hence, a company's tangible assets are passive without human capital, which can manage and create value for the company.

Conversely, the testing result indicates that structural capital (STVA) does not significantly affect firm value. It is similar to the study conducted by Deniswara et al. (2019) and Parimarma & Kufepaksi (2023) and not in line with the study conducted by Ahmed et al. (2019), Marcellina et al. (2022), Nuryaman (2015) and Midiantari & Agustia (2020). Based on the result of this study, structural capital owned by manufacturing companies in this study has not been able to increase the employees' ability to increase value added to the company. Hence, it will not affect the company.

The moderation effect of tax incentives in the association between capital intellectual and firm value

The second hypothesis testing result suggests that tax incentives weaken the relationship between intellectual capital and firm value. Similarly, the testing result shows that the tax incentives variable weakens the relationship between capital employed and firm value. Meanwhile, tax incentives are not moderating the relationship between human capital and firm value. This is the inverse effect of the previous direction before the moderation. It implies that the possible downfall effects of tax incentives mentioned above are higher than the benefits of tax incentives. There are two possible explanations for this result.

First, the tax incentive is given as a super deduction tax. Super deduction tax allows the company to decrease a tax-paid sum to a higher level. It creates a moral hazard for management to invest more in R&D by sacrificing the quality of R&D, which leads to the inefficient use of additional cash (Makeeva et al., 2019). This inefficient resource allocation can lower the company's value according to RBV theory. Second, the tax incentive in R&D can also trigger management to do aggressive tax avoidance by "re-labeling" non-R&D activities as R&D activities to qualify for the incentives (Guellec & Potterie, 2003; Zhu et al., 2006). This aggressive tax avoidance can increase the firm risk since it is short-term oriented, risky, and leads to less transparency and greater information asymmetry (Guenther et al., 2017). According to signaling theory, an increase in firm risk will give a bad signal to the investor, which will reduce firm value. Hence, it is a weakening effect of the capital intellectual aggregately and the capital employed on firm value. Conversely, the tax incentives strengthen the relationship between structural capital and firm value. The tax incentives provide the company with additional benefits from a lower tax burden by investing in its structural capital, thus increasing the value for the shareholder.

CONCLUSION

From the empirical tests that were conducted, it was found that intellectual capital aggregately has a positive effect on firm value. The uniqueness of a company's intellectual capital can be leveraged to increase the value and performance of the company. It can be a competitive advantage and help the company manage its resources effectively. Individually, capital employed and human capital positively affect firm value, while structural capital does not significantly affect firm value. Tax incentives are proven to weaken the effect of intellectual capital aggregately and capital employed on firm value. There are two possible explanations for this. First, the super deduction tax incentives may lead to inefficient use of additional cash. Second, the incentives trigger the management to engage in aggressive tax avoidance, which leads to higher firm risk. Conversely, tax incentives strengthen the relationship between structural capital and firm value. The tax incentives provide the company with additional benefits from a lower tax burden by investing in their structural company, thus increasing the

value for the shareholder. Meanwhile, tax incentives are not moderating the relationship between human capital and firm value.

Limitation

This study has limitations in taking research samples. Due to tight sample criteria, the study sample was not large enough and selected from the Indonesian Stock Exchange manufacturing sector. Because of the small sample, the findings can't be generalized to all manufacturing firms. There is a need for research on IC for other sectors, and a comparative study should also be conducted for other markets since the effect of tax incentives might be different in other sectors and countries. The study may also use different proxies of tax incentives since different incentives might have different effects. The study may also use other indicators of firm value, such as market value, or the company's performance indicators, such as sales growth and total turnover. Lastly, further study may also be conducted with a wider sample, such as ASEAN countries, to provide more comprehensive evidence, especially in ASEAN countries.

Suggestion

Based on the results of the empirical tests, we suggest OJK evaluate the disclosure policies in intellectual capital since intellectual capital information might be important for investors to assess the value of the company they invest in. Furthermore, we suggest OJK evaluate its disclosure policy on tax incentives and how management adapts to them since it also might be important information for the investor to reassess their investment. In addition, we also suggest that the Indonesian tax authority evaluate the implementation of tax incentives in R&D. The Indonesian Tax Authority must enforce the monitoring of the "re-labeling" practice of non-R&D activities labeled as R&D activities to qualify for the tax remissions. Therefore, it can avoid increasing potential tax loss without additional benefits purposed.

REFERENCES

Abdulaali, A. R. (2018). The impact of intellectual capital on business organization. *Academy of Accounting and Financial Studies Journal*, *22*(6), 1–16. https://www.proquest.com/openview/c1b010442a6da91f4d0be9830980530d/1?pq-origsite=gscholar&cbl=29414

Ahmed, A., Kashif Khurshid, M., Usman Yousaf, M., Coordinator, R., & Bank Faisalabad, A. (2019). Impact of intellectual capital on firm value: the moderating role of managerial ownership. *Preprint*, *Preprint*, 1–15. https://doi.org/10.20944/preprints201901.0318.v1

Anggraini, F., Seprijon, Y. P., & Rahmi, S. (2020). Pengaruh intellectual capital terhadap nilai perusahaan dengan financial distress sebagai variabel intervening. *Jurnal Informasi, Perpajakan, Akuntansi, Dan Keuangan Publik*, *15*(2), 169–190. https://doi.org/10.25105/jipak.v15i2.6263

Appah, T. R., Yuniarti, S., Sisharini, N., Sunarjo, S., & Yahya, N. (2023). Does profitability matter in the relationship between intellectual capital and firm value? *Media Ekonomi Dan Manajemen*, *38*(1), 57–70. https://doi.org/http://jurnal.untagsmg.ac.id/index.php/fe/article/view/3255/1991

Aprilianda, E. N., & Nur, I. (2023). Dampak nilai perusahaan dengan ukuran perusahaan sebagai variabel moderasi pada sektor makanan dan minuman di Bursa Efek Indonesia. *Reslaj: Religion Education Social Laa Roiba Journal*, *5*(6), 3259–3270. https://doi.org/10.47467/reslaj.v5i6.3805

Arief, M. I., Erlina., & Y. I. (2014). Pengaruh modal intelektual terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening pada perusahaan perbankan yang

terdaftar di Bursa Efek Indonesia. *Jurnal Telaah & Riset Akuntansi. Universitas Sumatera Utara*, *7*(2), 142–155. https://doi.org/https://jurnal.unsyiah.ac.id/TRA/article/view/10640

Arrahman, E., & Mahardika, D. P. K. (2023). Pengaruh profitabilitas, hedging, dan tingkat utang terhadap nilai perusahaan sub sektor batu bara. *Jurnal Informatika Ekonomi Bisnis*, *5*(2), 567–572. https://doi.org/10.37034/infeb.v5i2.581

Arsyad, M., Haeruddin, S. H., Muslim, M., & Pelu, M. F. A. R. (2021). The effect of activity ratios, liquidity, and profitability on the dividend payout ratio. *Indonesia Accounting Journal*, *3*(1), 36–44. https://doi.org/10.32400/iaj.30119

Astiti, N. P. Y., & Imbayani, I. G. A. (2022). The effect of capital structure, profitability and intellectual capital on company value in manufacturing companies. *International Journal of Multidisciplinary Research and Analysis*, *05*(12), 3442–3449. https://doi.org/10.47191/ijmra/v5-i12-19

Ayuningtyas, I. S., Fidiana, & Mildawati, T. (2023). The effect of intellectual capital and sustainability report disclosure on company value with profitability as a moderation variable. *Lead Journal of Economy and Administration*, *1*(4), 133–143. https://doi.org/10.56403/lejea.v1i4.101

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, *27*(6), 643–650. https://doi.org/10.1177/014920630102700602

Berzkalne, I., & Zelgalve, E. (2014). Intellectual capital and company value. *Procedia - Social and Behavioral Sciences*, *110*, 887–896. https://doi.org/10.1016/j.sbspro.2013.12.934

Boujelbene, M. A., & Affes, H. (2013). The impact of intellectual capital disclosure on cost of equity capital: A case of French firms. *Journal of Economics Finance and Administrative Science*, *18*(34), 45–53. https://doi.org/10.1016/S2077-1886(13)70022-2

Chandra, H., & Djajadikerta, H. (2017). The influence of intellectual capital, profitability, and leverage on company value in property, real estate, and building construction companies listed on the Indonesia Stock Exchange. *Ultima Accounting*, *9*(2), 1–14. https://doi.org/https://doi.org/10.31937/akuntansi.v9i2.726

Chen, M. C., Cheng, S. J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, *6*(2), 159–176. https://doi.org/10.1108/14691930510592771

Dancaková, D., Sopko, J., Glova, J., & Andrejovská, A. (2022). The impact of intangible assets on the market value of companies: Cross-sector evidence. *Mathematics*, *10*(20), 1–14. https://doi.org/10.3390/math10203819

Dang, H. N., Vu, V. T. T., Ngo, X. T., & Hoang, H. T. V. (2019). Study the impact of growth, firm size, capital structure, and profitability on enterprise value: Evidence of enterprises in Vietnam. *Journal of Corporate Accounting and Finance*, *30*(1), 144–160. https://doi.org/10.1002/jcaf.22371

Dechezleprêtre, A., Einiö, E., Martin, R., Nguyen, K.-T., & Reenen, J. Van. (2016). *Do tax incentives for research increase firm innovation? An rd design for R&D* (22405; NBER Working Paper). National Bureau of Economic Research, 1 –33. http://www.nber.org/papers/w22405

Deniswara, K., Uyuun, R. F. M., Lindawati, A. S. L., & Willnaldo, ; (2019). Intellectual capital effect, financial performance, and firm value: An empirical evidence from real estate firm in Indonesia. *Journal The Winners*, *20*(1), 49–60. https://doi.org/https://doi.org/10.21512/tw.v20i1.5500

Dewi, H. R., & Dewi, L. M. C. (2020). Modal intelektual dan nilai perusahaan pada industri jasa dan pertambangan di Indonesia. *Proceeding of National Conference on Accounting & Finance*, 132–143.

Dewi, R. R., & Rohman, A. (2023). Job market signaling analisis pengaruh insentif pajak terhadap kinerja dan nilai perusahaan (studi empiris pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia tahun 2018-2021). *Diponegoro Journal of Accounting*, *12*(3), 1–13. https://ejournal3.undip.ac.id/index.php/accounting/article/view/40142

Dobrovič, J., Čabinová, V., Gallo, P., Partlová, P., Váchal, J., Balogová, B., & Orgonáš, J. (2021). Application of the DEA model in tourism SMES: An empirical study from Slovakia in the context of business sustainability. *Sustainability*, *13*(13), 1–19. https://doi.org/10.3390/su13137422

Doloksaribu, R. P., Hardiantoro F, & Firmansyah, A. (2023). Does intellectual capital have a moderating role in the association between tax avoidance and firm value? *Substansi: Sumber Artikel Akuntansi, Auditing, Dan Keuangan Vokasi*, *6*(2), 43–55. https://doi.org/https://doi.org/10.35837/subs.v6i2.2074

Duli, N. (2019). *Metodologi Penelitian Kuantitatif: Beberapa Konsep Dasar untuk Penulisan Skripsi & Analisis Data dengan SPSS.* DeepPublish. https://edeposit.perpusnas.go.id/collection/metodologi-penelitian-kuantitatif-beberapa-konsep-dasar-untuk-penulisan-skripsi-analisis-data-dengan-spss-sumber-elektronis/12908#

Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning*, *30*(3), 366–373. https://doi.org/10.1016/S0024-6301(97)90248-X

Engelman, R., Fracasso, E. M., Schmid, S. S., & Neto, H. F. (2015). The influence of intellectual capital on absorptive capacity and product innovation. *XVI Congreso Latino-Iberoamericano de Gestión Tecnológica*, 1–18. https://altec2015.nitec.co/altec/papers/120.pdf

Ernst, C., & Spengel, C. (2011). *Taxation, R&D tax incentives and patent application in Europe* (11–024). ZEW-Centre for European Economic Research, 1-37. https://doi.org/10.2139/ssrn.1805762

Esmaieli, M., & Ahmadian, M. (2018). The effect of research and development incentive on wind power investment, a system dynamics approach. *Renewable Energy*, *126*, 765–773. https://doi.org/10.1016/j.renene.2018.04.009

Indra, F., & Trisnawati E. (2020). Pengaruh modal intelektual terhadap kualitas laba dengan manajemen laba sebagai pemediasi. *Jurnal Paradigma Akuntansi*, *2*(4), 1753–1762. https://doi.org/10.24912/jpa.v2i4.9371

Farrar, D. E., & Glauber, R. R. (1967). Multicollinearity in regression analysis: The problem revisited. *The Review of Economics and Statistics*, *49*(1), 92–107. https://doi.org/10.2307/1937887

Febry, I. H. (2018). Pengaruh modal intelektual terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening. *Jurnal Manajemen Bisnis Indonesia (JMBI)*, *7*(3), 284–293. https://journal.student.uny.ac.id/index.php/jmbi/article/view/12920

Ferjiana, T., & Natalylova, K. (2023). Faktor-faktor yang memengaruhi nilai perusahaan. *E-Jurnal Akuntansi TSM*, *3*(1), 119–130. https://doi.org/10.34208/ejatsm.v3i1.1897

Gaol, G. A. L., Firmansyah, A., & Irawati, A. D. (2021). Intellectual capital, corporate social responsibility, and firm value in Indonesia's banking industries. *Jurnal Riset Akuntansi Terpadu*, *14*(1), 76–87. https://doi.org/https://doi.org/110.35448/jrat.v14i1.10229

Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: an empirical investigation in an Iranian company. *African Journal of Business Management*, *5*(1), 88–95. https://doi.org/10.5897/AJBM10.712

Gomes I., N. G. I., Semuel, H., & D., D. (2019). Intellectual capital disclosure, information asymmetry, cost of capital, and firm value: Empirical studies on Indonesian manufacturers.

Petra International Journal of Business Studies, *2*(1), 27–35. https://doi.org/10.9744/ijbs.2.1.27-35

Guellec, D., & Potterie, B. V. P. D. La. (2003). The impact of public R&D expenditure on business R&D. *Economics of Innovation and New Technology*, *12*(3), 225–243. https://doi.org/10.1080/10438590290004555

Guenther, D. A., Matsunaga, S. R., & Williams, B. M. (2017). Is tax avoidance related to firm risk? *The Accounting Review*, *92*(1), 115–136. https://doi.org/10.2308/accr-51408

Gujarati, D. and P. D. (2009). *Dasar-Dasar Ekonometrika (Terjemahan)*. Salemba Empat.

Hakim, L., & Priantinah, D. (2018). Faktor-faktor yang mempengaruhi nilai perusahaan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia. *Jurnal Profita: Kajian Ilmu Akuntansi*, *6*(8), 1–15. https://journal.student.uny.ac.id/index.php/profita/article/view/13847/13372

Hanifah, A., Zulkarnain, I., Riyanti, & Herliyana, D. (2023). Intellectual capital and company value in mining companies on The Indonesia Stock Exchange. *PENANOMICS: International Journal of Economics*, *2*(1), 48–61. https://doi.org/10.56107/penanomics.v2i1.103

Hanlon, M., Hoopes, J. L., & Slemrod, J. (2019). Tax Reform Made Me Do It!. *Tax Policy and the Economy*, *33*, 33–80. https://doi.org/10.1086/703226

Hansen, D. R., & Mowen, M. M. (2007). *Management accounting* (8th ed.). South Western.

Harmaini. (2021). Factors affecting value of companies (case study of the Indonesian pharmaceutical industry). *BASKARA: Journal of Business and Enterpreneurship*, *3*(2), 77–92. https://doi.org/https://doi.org/10.54268/baskara.v3i2.9000

Hulten, C., & Hao, X. (2008). *What is a company really worth? Intangible capital and the "market to book value" puzzle* (1458; NBER Working Paper). National Bureau of Economic Research National Bureau of Economic Research, 1 –36. https://doi.org/10.3386/w14548

Kasim, F. (2008). *Metodologi Penelitian Biomedis*. Danamartha Sejahtera Utama.

Klemm, A., & Parys, S. V. (2012). Empirical evidence on the effects of tax incentives. *International Tax and Public Finance*, *19*(3), 393–423. https://doi.org/10.1007/s10797-011-9194-8

Kurniawati, A. W., Samrotun, Y. C., & Wijayanti, A. (2023). Determinan firm value pada perusahaan property dan real estate tahun 2017-2021. *Ekonomis: Journal of Economics and Business*, *7*(1), 508–514. https://doi.org/10.33087/ekonomis.v7i1.864

Lubis, H. A., Sutriyanti, L. H., & Puspitasari, D. P. (2023). Pengaruh tax avoidance terhadap nilai perusahaan sebagai respon kenaikan tarif PPN 11%. *Jurnal Akuntansi, Kewirausahaan Dan Bisnis*, *8*(1), 99–106. https://doi.org/10.35145/kurs.v8i1.3175

Lucky, C., & Tanusdjaja, H. (2023). Pengaruh intellectual capital, profitabilitas, dan struktur modal terhadap nilai perusahaan. *Jurnal Paradigma Akuntansi*, *5*(1), 2033–2043. https://doi.org/10.24912/jpa.v5i1.22165

Makeeva, E., Murashkina, I., & Mikhaleva, I. (2019). The impact of R&D tax incentive programs on the performance of innovative companies. *Foresight*, *21*(5), 545–562. https://doi.org/10.1108/FS-06-2018-0063

Marcellina, L. G., Syaipudin, U., & Kusumawardani, N. (2022). Effect of intellectual capital and leverage on firm value in pharmaceutical companies listed on Indonesia Stock Exchange. *Asian Journal of Economics and Business Management*, *1*(3), 304–311. https://doi.org/10.53402/ajebm.v1i3.210

Mariani, D., Nursanty, I. A., & Rusdi, R. (2023). Pengaruh struktur modal, kebijakan dividen, efisiensi penggunaan modal kerja dan modal intelektual terhadap nilai perusahaan IDX80

di Bursa Efek Indonesia tahun 2017-2019. *Kompeten: Jurnal Ilmiah Ekonomi Dan Bisnis*, *1*(4), 141–156. https://doi.org/10.57141/kompeten.v1i4.28

McGee, J. (2015). Resource-based view. In C. L. Cooper (Ed.), *Wiley Encyclopedia of Management* (pp. 1–8). Wiley. https://doi.org/10.1002/9781118785317.weom120134

Midiantari, P. N., & Agustia, D. (2020). Impact of intellectual capital on firm value through corporate reputation as a mediating variable. *Journal of Security and Sustainability Issues*, *9*(4), 1204–1213. https://doi.org/https://jssidoi.org/jssi/papers/papers/view/534

Peraturan Menteri Keuangan. (2021). *Peraturan Menteri Keuangan Nomor 18/PMK.03/2021 tentang Pelaksanaan Undang-Undang Nomor 11 Tahun 2020 tentang Cipta Kerja di Bidang Pajak Penghasilan, Pajak Pertambahan Nilai dan Pajak Penjualan atas Barang Mewah, serta Ketentuan Umum dan Tata Cara Perpajakan*. https://jdih.kemenkeu.go.id/download/39fdb2fc-1736-4ebb-80f5-d257f75df0b5/18~PMK.03~2021Per.pdf

Peraturan Pemerintah RI. (2019). *Peraturan Pemerintah Nomor 45 Tahun 2019 tentang Perubahan atas Peraturan Pemerintah Nomor 94 Tahun 2010 tentang Penghitungan Penghasilan Kena Pajak dan Pelunasan Pajak Penghasilan dalam Tahun Berjalan*. https://jdih.kemenkeu.go.id/FullText/2019/45TAHUN2019PP.pdf

Na, H.-J., Kang, H., & Lee, H.-E. (2021). Does tax incentives affect future firm value for corporate sustainability? *Sustainability*, *13*(22), 1–17. https://doi.org/10.3390/su132212665

Nama, D. K., & Kanungo, R. (2023). Intellectual capital. In B. Marco-Lajara, P. Zaragoza-Sáez, & J. Martínez-Falcó (Eds.), *Intellectual Capital as a Precursor to Sustainable Corporate Social Responsibility* (pp. 148–165). IGI Global. https://doi.org/10.4018/978-1-6684-6815-9.ch009

Nguyen, A. H., & Doan, D. T. (2020). The impact of intellectual capital on firm value: Empirical evidence from Vietnam. *International Journal of Financial Research*, *11*(4), 74–85. https://doi.org/10.5430/ijfr.v11n4p74

Ni, Y., Cheng, Y.-R., & Huang, P. (2021). Do intellectual capitals matter to firm value enhancement? Evidences from Taiwan. *Journal of Intellectual Capital*, *22*(4), 725–743. https://doi.org/10.1108/JIC-10-2019-0235

Oktaviani, R. N., & Sukarmanto, E. (2023). Pengaruh intellectual capital terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening. *Bandung Conference Series: Accountancy*, *3*(1), 330–336. https://doi.org/10.29313/bcsa.v3i1.6360

Nuryaman, N. (2015). The influence of intellectual capital on the firm value with the financial performance as intervening variable. *Procedia–Social and Behavioral Sciences*, *211*, 292–298. https://doi.org/https://doi.org/10.1016/j.sbspro.2015.11.037

OECD. (2023). *The impact of R&D tax incentives: Results from the OECD microBeRD+ project*. OECD Directorate for Science, Technology and Innovation Committee on Industry, Innovation and Entrepreneurship Committee for Scientific and Technological Policy, 1–86. https://one.oecd.org/document/DSTI/CIIE/STP(2022)3/FINAL/en/pdf

Parimarma, L. A. I., & Kufepaksi, M. (2023). The effect of intellectual capital on company value of banking companies in Indonesia. *Journal Economy and Currency Study (JECS)*, *5*(1), 16–29. https://doi.org/10.51178/jecs.v5i1.1309

Parlak, N. (2021). The effect of intellectual capital efficiency on financial performance: A research on participation banks. *Journal of Life Economics*, *8*(3), 281–287. https://doi.org/10.15637/jlecon.8.3.01

Piekkola, H. (2016). Intangible investment and market valuation. *Review of Income and Wealth*, *62*(1), 28–51. https://doi.org/10.1111/roiw.12149

Pratiwi, A., Junaedi, D., & Prasetyo, A. (2020). Pengaruh harga terhadap keputusan pembelian konsumen. *El-Mal: Jurnal Kajian Ekonomi & Bisnis Islam*, *1*(2), 150–160. https://doi.org/10.47467/elmal.v1i2.473

Puspita, G., & Wahyudi, T. (2021). Modal intelektual (intellectual capital) dan nilai perusahaan pada industri manufaktur. *Riset & Jurnal Akuntansi*, *5*(2), 295–306. https://doi.org/10.33395/owner.v5i2.471

Putra, D. R., & Gantino, R. (2021). Pengaruh profitabilitas, leverage, dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Bisnis Dan Manajemen*, *11*(1), 81–96.

Putri, N. K. S. R., & Wirajaya, I. G. A. (2023). Modal intelektual, nilai perusahaan, dan manajemen risiko sebagai variabel moderasi. *E-Jurnal Akuntansi*, *33*(11), 3043–3055. https://doi.org/10.24843/EJA.2023.v33.i11.p16

Ria, R. (2023). Profitability moderation on the effect of tax avoidance on company value. *Jurnal Multidisiplin Madani*, *3*(5), 1099–1104. https://doi.org/10.55927/mudima.v3i5.3000

Rieg, R., & Vanini, U. (2015). Value-relevance of intangibles and intellectual capital disclosure on market-to-book value ratio: a longitudinal multilevel regression of German DAX firms. *SSRN Electronic Journal*, 1–26. https://doi.org/10.2139/ssrn.2906636

Ruta, C. D. (2009). HR portal alignment for the creation and development of intellectual capital. *The International Journal of Human Resource Management*, *20*(3), 562–577. https://doi.org/10.1080/09585190802707318

Mediti, S. P., & Murti, O. C. (2020). Analisis pengaruh harga dan kualitas layanan elektronik terhadap kepuasan konsumen pada pengguna aplikasi Shopee. *Jurnal Ilmu Manajemen*, *8*(4), 1290–1300. https://doi.org/10.26740/jim.v8n4.p1290-1300

Salvi, A., Vitolla, F., Giakoumelou, A., Raimo, N., & Rubino, M. (2020). Intellectual capital disclosure in integrated reports: The effect on firm value. *Technological Forecasting and Social Change*, *160*, 1–8. https://doi.org/10.1016/j.techfore.2020.120228

Salzano, K. A., Maurer, C. A., Wyvratt, J. M., Stewart, T., Peck, J., Rygiel, B., & Petree, T. (2016). A knowledge management framework and approach for clinical development. *Therapeutic Innovation & Regulatory Science*, *50*(5), 536–545. https://doi.org/10.1177/2168479016664773

Sari, B., & Mahanani, E. (2017). Analisis pengaruh harga, produk, perilaku konsumen terhadap keputusan pembelian Telon Lang. *Jurnal STEI Ekonomi*, *26*(02), 296–316. https://doi.org/10.36406/jemi.v26i02.238

Spence, M. (1978). Job market signaling. In P. Diamond & M. Rothschild (Eds.), *Uncertainty in Economics* (pp. 281–306). Elsevier. https://doi.org/10.1016/B978-0-12-214850-7.50025-5

Strelnikova, L. (2022). Formation and use of intellectual capital as a factor of the innovative development of Russian the transport complex enterprises. *Transportation Research Procedia*, *63*, 2053–2063. https://doi.org/10.1016/j.trpro.2022.06.229

Subaida, I., Nurkholis, N., & Mardiati, E. (2018). Effect of intellectual capital and intellectual capital disclosure on firm value. *Jurnal Aplikasi Manajemen*, *16*(1), 125–135. https://doi.org/10.21776/ub.jam.2018.016.01.15

Sugiyono. (2021). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (2nd ed.). Alfabeta.

Suhendra, E. S. (2015). The influence of intellectual capital on firm value towards manufacturing performance in Indonesia. *International Conference on Eurasian Economies, 54*–61. https://www.avekon.org/papers/1192.pdf

Suzan, L., & Ardiansyah, D. (2023). Good corporate governance, intellectual capital, and operational efficiency: Affect company value. *Jurnal Akademi Akuntansi*, *6*(2), 294–311. https://doi.org/10.22219/jaa.v6i2.27101

Tongliang, A., & Wenyi, W. (2018). R&D value of Chinese manufacturing listed companies. *China Political Economy*, *1*(2), 241–262. https://doi.org/10.1108/CPE-10-2018-012

Trisanti, T., Agung Saputro, J., Algifari, A., & Rosita Arini, P. (2023). Assessing the relationship between company value and intellectual capital disclosure before and during covid-19: evidence Indonesia IT companies. *Journal of Economics, Finance and Management Studies*, *06*(07), 2996–3007. https://doi.org/10.47191/jefms/v6-i7-01

Ulfa, Z., & Prasetyo, K. (2018). The Effect of Intellectual Capital and Revenue Growth on Firm Value. *Proceedings of The Journal of Contemporary Accounting and Economics Symposium*, 422–428. https://pdfs.semanticscholar.org/e53d/a5e69cf1ee3a2f9a32efcd67b87628b790a2.pdf

Wang, M.-C. (2013). Value relevance on intellectual capital valuation methods: the role of corporate governance. *Quality & Quantity*, *47*(2), 1213–1223. https://doi.org/10.1007/s11135-012-9724-1

Wang, M.-C. (2015). Value relevance of tobin's q and corporate governance for the Taiwanese tourism industry. *Journal of Business Ethics*, *130*(1), 223–230. https://doi.org/10.1007/s10551-014-2339-9

Warda, J. (2006). *Tax Treatment of Business Investments in Intellectual Assets: An International Comparison* (04). OECD Science, Technology and Industry, 1–51. https://doi.org/10.1787/672304513676

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. https://doi.org/10.1002/smj.4250050207

Widyaningdyah, A. U., & Aryani, Y. A. (2013). Intellectual capital dan keunggulan kompetitif (studi empiris perusahaan manufaktur versi Jakarta Stock Industrial Classification-JASICA). *Jurnal Akuntansi Dan Keuangan*, *15*(1), 1–14. https://doi.org/10.9744/jak.15.1.1-14

William, F., Gaetano, M., & Giuseppe, N. (2019). The impact of intellectual capital on firms financial performance and market value: empirical evidence from Italian listed firms. *African Journal of Business Management*, *13*(5), 147–159. https://doi.org/10.5897/ajbm2018.8725

Wiryawati, K., Rinofah, R., & Maulida, A. (2022). Pengaruh modal intelektual terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening pada perusahaan manafaktur yang terdaftar di BEI periode 2018-2020. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*, *5*(3), 1062–1079. https://doi.org/10.47467/alkharaj.v5i3.1476

Wulandari, D., Paramita, P. D., & Suprijanto, A. (2018). Pengaruh modal intelektual, struktur modal,profitabilitas, terhadap nilai perusahaan dengan kinerja keuangan sebagai variabel intervening (pada perusahaan manufaktur yang terdafrar di BEI sub sektor aneka industri tahun 2011-2015). *Journal of Accounting*, *4*(4), 1–14. https://jurnal.unpand.ac.id/index.php/AKS/article/view/944/919

Yang, C.-C., & Lin, C. Y.-Y. (2009). Does intellectual capital mediate the relationship between HRM and organizational performance? perspective of a healthcare industry in Taiwan. *The International Journal of Human Resource Management*, *20*(9), 1965–1984. https://doi.org/10.1080/09585190903142415

Zéghal, D., & Maaloul, A. (2010). Analysing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital*, *11*(1), 39–60. https://doi.org/10.1108/14691931011013325

Zhu, P., Xu, W., & Lundin, N. (2006). The impact of government's fundings and tax incentives on industrial R&D investments - empirical evidences from industrial sectors in Shanghai. *China Economic Review*, *17*(1), 51–69. https://doi.org/10.1016/j.chieco.2005.04.002

Appendix 1

Table 7. The Result of Random Effect Regression Model

	Model 1			Model 2			Model 3			Model 4		
	Coeff	P>|t|		Coeff	P>|t|		Coeff	P>|t|		Coeff	P>|t|	
C	-4.4199	0.1240		-7.5258	0.0320		-5.0605	0.098		-5.4073	0.0550	
VAIC	0.3263	0.0675	*	-	-		0.5701	0.0150	**	-	-	
VACA	-	-		8.7571	0.0000	***	-	-		10.7804	0.0000	***
VAHU	-	-		0.3838	0.0250	**	-	-		0.5548	0.0075	***
STVA	-	-		-0.1943	0.4180		-	-		-2.2313	0.0390	**
TAXINC	-0.1556	0.0000	***	-0.1389	0.0000	***	0.0845	0.2735		-0.0101	0.4795	
VAICTAXINC	-	-		-	-		-0.0701	0.0380	**	-	-	
VACATAXINC	-	-		-	-		-	-		-0.7011	0.0605	*
VAHUTAXINC	-	-		-	-		-	-		-0.0458	0.1195	
STVATAXINC	-	-		-	-		-	-		0.3036	0.0645	*
SIZE	0.2631	0.0195	**	0.2638	0.0165	**	0.2544	0.0250	**	0.1938	0.0250	**
LEV	-4.5947	0.0000	***	-1.4128	0.1055		-4.4716	0.0000	***	-1.3560	0.0900	*
Overall R Squared		0.2638			0.4425			0.2660			0.4949	
F-Test		0.0000			0.0000			0.0000			0.0000	

Notes: *** = significant at the 1% level (1-tailed); ** = significant at 5% level (1-tailed); and * = Significant at the 10% level (1-tailed)

Source: Processed by using STATA Application