HOW INTELLECTUAL CAPITAL MEDIATES THE RELATIONSHIP BETWEEN PROFITABILITY, TAX AVOIDANCE, CAPITAL INTENSITY, AND FIRM VALUE

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ABSTRACT

The purpose of this study is to examine the effect of profitability, tax avoidance, and capital intensity on intellectual capital and on firm value. In addition, it also examines the mediating effect of intellectual capital on profitability, tax avoidance, and capital intensity on firm value. The population of the study was companies in the Property and Real Estate Sector on the IDX. The sample was selected using non-probability sampling, and a sample of 51 companies from 2019 to 2022 was obtained—data analysis using Multiple Regression Analysis. The study results show that return on assets positively affects intellectual capital. Tax avoidance and capital intensity do not affect intellectual capital. Profitability does not affect firm value, and intellectual capital positively affects firm value. Profitability positively affects firm value mediated by intellectual capital, while tax avoidance and capital intensity through intellectual capital cannot affect firm value. Stockholders can use the implications of the results of this study in preparing and taking investment policies because firm value is one of the indicators that can explain the company's financial performance holistically.

ABSTRAK

Tujuan dari penelitian ini adalah untuk menguji pengaruh tingkat profitabilitas, tax avoidance, dan capital intensity terhadap intellectual capital dan terhadap nilai perusahaan. Selain itu juga menguji pengaruh mediasi intellectual capital terhadap profitabilitas, tax avoidance, dan capital intensity pada nilai perusahaan. Populasi penelitian adalah perusahan Sektor Property dan Real Estate di BEI. Sampel dipilih dengan non probability sampling dan diperoleh sampel sebanyak 51 perusahaan dari tahun 2019 -2022. Analisis data menggunakan Multiple Regression Analysis. Hasil penelitian menunjukan return on assets berpengaruh positif terhadap intellectual capital. Tax avoidance dan capital intensity tidak berpengaruh terhadap intellectual capital. Profitabilitas tidak berpengaruh terhadap nilai perusahaan dan intellectual capital berpengaruh positif terhadap nilai perusahaan. Profitabilitas berpengaruh positif terhadap nilai perusahaan dengan dimediasi intellectual capital, sedangkan tax avoidance dan capital intensity melalui intellectual capital tidak dapat mempengaruhi nilai perusahaan. Implikasi hasil penelitian ini dapat dihgunakan oleh stockholder dalam menyusun dan mengambil kebijakan investasi karena nilai perusahaan sebagai salah satu indikator yang dapat menjelaskan kinerja keuangan perusahaan secara holistik.

INTRODUCTION

Investment decisions are very dependent on the financial performance generated by the company, so investors can use many performance measurement instruments before making investment policies. In general, the most financial performance displayed by companies to attract the attention of potential investors is the value of retained earnings generated by the company in one financial period. Measurement of financial performance using the concept of retained earnings has caused several financial polemics, which have led to a lower level of investor confidence in the value of financial performance based on the profits that the company generates (Akgun et al., 2018; Ponsian, 2014; Pratiwi & Aligarh, 2021; Putri & Febrianty, 2016). Measuring company performance is not only based on the ability to generate profit, but also on the need to pay attention to the effective and efficient factors in managing the financial resources so that it can generate added value for the company and stakeholders. The company's ability to manage financial resources effectively and efficiently can be the main foundation for the company to increase its value (Argandoña, 2011; Jaya, 2020; Ponsian, 2014).

Firm value is a process of value creation between the company owner and stakeholders, either in the internal or external environment of the company (Pattitoni et al., 2014; Tui et al., 2017). This process illustrates the trust in the market in the company's performance in managing its financial resources effectively and efficiently. The profit generated by the company must have an indirect effect on the company's value, which illustrates the trust of the investor in assessing the company's performance (Tui et al., 2017). In general, a higher company value is also an indicator of the profit that investors will get from the difference in investment at this time. Company value can generally be seen from various perspectives by comparing stock prices with profit levels, book value, cash flow, and stock dividends (Akgun et al., 2018; Brigham & Houston, 2019). Measuring by comparing stock prices will produce measurement ratios that provide different perspectives in measuring company value. Based on the results of previous studies, measuring firm value often uses a combination of several ratios to get a more comprehensive analysis. In this study the authors use the measurement of firm value which can be measured by the calculation of Tobin's Q, which shows the ratio of the estimated share price in the market by comparing the ratio of the market value of shares to the book value of the company's equity, to provide rational information on the value of the company (Brigham & Houston, 2019; Puspitasari & Sudiyanto, 2010).

Financial information about the company's value can indirectly attract attention and increase stakeholder trust in managing and utilizing its resources effectively and efficiently. Not only on tangible fixed assets (land, buildings, machinery and equipment), but also on intangible assets (intellectual capital) owned by the company. The success of the company in managing tangible fixed assets is highly dependent on how much investment the company makes in intangible assets (intellectual capital), because in increasing the value of the company, the company not only uses capital in financial terms, but also uses knowledge capital (intellectual capital). Given that many companies have changed their system from a labor-based business to a knowledge-based business. Intellectual capital is the company's intangible assets, including copyrights, intellectual property rights, patents, and franchises.

This study uses the stakeholder theory and value creation approach. In stakeholder theory, explaining that companies that are managed effectively and efficiently can create value for all stakeholders, such as shareholders, consumers, creditors, suppliers, employees, government, society, and other parties. Then, the shareholders and stakeholders can make policies that affect every company activity to consider the impact and broader responsibility on society. By prioritizing the interests of all stakeholders, the company can maintain operational sustainability in the long term. Value creation by companies requires extensive intellectual resources, because at this time companies that have superior intellectual capital resources, can maximize the use of other resources to produce effectiveness and efficiency in management (Alaika et al., 2023; Argandoña, 2011; Helennia et al., 2022). The theory of value

creation explains how organizations generate economic, social, or other forms of value that exceed input costs. At present, the value creation by companies is becoming more complex and multidimensional, involving various stakeholders by utilizing intangible assets such as the company's Intellectual Capital (Argandoña, 2011 dan Holiawati & Murwaningsari, 2019). Company value creation must be able to adapt to environmental changes, especially technological changes that require human capital that can generate new ideas.

Based on the background that the author has described above, the problem discussed in this study refers to the research phenomenon found by the author from several previous studies which state that profitability affects firm value (Jaya, 2020; Purwanto & Agustin, 2017), while the results of other previous studies state that profitability has no effect on firm value (Mahanani & Kartika, 2022; Pratiwi & Aligarh, 2021). The differences in research results found in the results of previous studies illustrate that the profitability factor does not always have a positive impact on firm value, so this phenomenon is an interesting research problem for the author to further analyze and test how much the profitability factor proxied through ROA affects the level of firm value proxied through the market value approach (Tobin's Q). In this study the authors focus on testing and analyzing the factors that affect firm value. This study aims to analyze the effect of Profitability, Tax Avoidance, and Capital Intensity on Firm Value with Intellectual Capital as a mediating variable.

The purpose of selecting this sector as the object of research is because companies in the property and real estate sector have fixed asset values and working capital with dynamic changes in market value according to changes in the global economic environment, so this can attract writers to understand more deeply about the performance of company value, and the factors that affect company value. The global property sector offers opportunities to compare and contrast markets in different countries and regions, understand the effects of globalization, and analyze the strategies of multinational companies in property management and investment. The property and real estate sector includes everything related to the ownership, use, development, and trading of property or real estate assets. The development of property and real estate companies in one country can affect the country's economy, because this sector makes a high contribution to gross domestic product (GDP). This can be seen in 2023 the contribution of the property industry as a leading sector that can drive the Indonesian economy in the second quarter GDP in 2023, based on data of 9.43% from the construction sector and 2.40% from the real estate sector. In addition, the property and real estate industry also provides a multiplier effect for supporting industries and affects the development of the financial sector and requires high human capital so as to reduce the level of unemployment in a country (Limanseto, 2023). Based on the objectives of the researcher above, the researcher is very interested in examining the property and real estate sector in more depth.

LITERATURE REVIEW
Firm Value
Measurement of company performance must show the real value owned by the company as a whole, the creation of company value is the contribution of company owners and stake holders in the internal and external environment of the company (Akgun et al., 2018; Argandoña, 2011; Doloksaribu et al., 2023). Firm value can show the value of tangible and intangible assets that the company currently owns. The higher the company value, the greater the prosperity owned by the company owner (Akgun et al., 2018; Brigham & Houston, 2019; Helennia et al., 2022; Puspitasari & Sudiyanto, 2010; Tui et al., 2017). High firm value is a competitive advantage for the company, and reflects the financial fundamentals owned by the company (Tui et al., 2017).

High company value is always desired by company owners, especially company value measured based on market value, because the value of the investment owned will contribute high profits for company shareholders (Brigham & Houston, 2019; Suwardika & Mustanda, 2017). In this study, the

authors used a proxy for firm value based on market value as measured using the Tobin's Q approach (Bolton et al., 2009). The author assumes that shareholders are more likely to expect a high market value, because it can provide high profits and reflect a high level of trust from shareholders (Akgun et al., 2018; Riahi-Belkaoui, 2003). Firm value can be measured using Tobin's Q. According to (Bolton et al., 2009; Puspitasari & Sudiyanto, 2010; Singh et al., 2018). Tobin's Q is an indicator to measure company performance, especially about company value, which shows a management proforma in managing company assets. Tobin's Q is calculated based on the following formula as follow.

$$Tobin's\ Q = \frac{Total\ Market\ Value + Total\ Liabilities}{Total\ Assets} \qquad (1)$$

Intellectual Capital

In general, the definition of intellectual capital is based on the findings of previous studies, there is no specific definition, which tends to be broader, and still requires further study and explanation (Bukh et al., 2005; Chen et al., 2005; Holiawati & Murwaningsari, 2019; Ozkan et al., 2017; Riahi-Belkaoui, 2003; Ting et al., 2011). Referring to capital generally invested in tangible fixed assets or intangible assets, changes in the corporate environment and technological advances provide considerable room for companies to increase the amount of capital that must be invested in intangible assets known as intellectual capital.

Intellectual capital is an intangible fixed asset that is very important for companies to improve the effectiveness and efficiency of financial resource management. The company's competitive advantage basically does not only depend on the value of tangible fixed assets but must also pay attention to the value of intangible assets such as the company's knowledge-based management system (Bukh et al., 2005; Ting et al., 2011). The author defines Intellectual capital is an intangible asset that comes from individual knowledge, legal assets, customers, suppliers and technology that can improve the efficiency and effectiveness of managing fixed asset resources owned (Akgun et al., 2018; Bukh et al., 2005; Ozkan et al., 2017). In the process of creating added value for the company, companies need to pay attention to aspects such as human resource development, improving systems and procedures, and managing relationships with external parties. In this case, the company also needs to conduct futures measurement and reporting of intellectual capital appropriately in order to monitor and evaluate the effectiveness of managing the company's intangible assets (Chen et al., 2005; Ozkan et al., 2017; Ting et al., 2011). Intellectual capital can be measured by the VAIC (Value Added Intellectual Coefficient) formula. According to (Yuliza et al., 2021) Intellectual capital is measured by measuring the 3 main components of VAIC which can be easily found in financial reports, namely human capital (VAHU), structural capital (STVA) and capital employed (VACA). Intellectual capital is formulated in five steps. First step is calculating value added (VA) as follow.

$$Value\ Added = total\ sales\ and\ other\ revenues - expenses\ (other\ than\ employee\ expenses) \qquad (2)$$

Second step is calculating value added capital employed (VACA). From the formula, value added is the difference between output and input and capital employed is available fund.

$$VACA = \frac{Value\ Added}{Capital\ Employed} \qquad (3)$$

Thrid step is calculating value added human capital (VAHU). From the formula, value added is the difference between output and input and human capital is employee expenses

$$VAHU = \frac{Value\ Added}{Human\ Capital} \qquad (4)$$

Fourth step is calculating value added structural capital (STVA). From the formula, structural capital is value added subtract with human capital an value added is the difference between output and input.

$$STVA = \frac{Structural\ Capital}{Value\ Added} \qquad (5)$$

Fifth Step is calculating value added intellectual coefficient (VAIC) which is the sum of value added capital employed, value added capital employed, and structural capital value added.

$$VAIC = VACA + VAHU + STVA \qquad (6)$$

Return On Assets

Return on assets is a ratio used to measure the company's ability to generate profits based on a certain level of assets it owns, return on assets also reflects how the company is able to survive in managing its business. The more effective and efficient the company is in utilizing assets to generate profits, the higher the return on assets value of the company (Brigham & Houston, 2019). Helennia et al. (2022) explain that return on assets shows the company's ability to use or manage all assets owned to generate profit after tax. The assets in question are the entire price of a company that has been obtained from own capital and foreign capital that has been converted by the company into assets used for a company. The higher the return on assets of a company, it shows that the profit that has been obtained by the company is getting bigger and will also affect the level of trust in investors which is getting bigger so that investors will be more interested in investing in the company, which will also have an impact on increasing the value of the company. According to Fahmi (2015) Likewise, on the contrary, if the return on assets of a company is low, it shows that the company is unable to generate maximum profit and will affect the decline in company value so that investors will consider investing more.

According to Ross et al. (2021) return on assets measures the overall efficiency of company management in using the assets owned by the company, the return on assets value of the company can also be a consideration for investors to invest. A high return on assets tends to be more attractive in the eyes of today's investors. Return on assets describes the rate of return on the total assets that the company has used (Sari & Dwirandra, 2019). Return on assets is calculated by dividing net income by the company's total assets Fahmi, (2015) as follows.

$$Return\ On\ Assets\ (ROA) = \frac{Earning\ After\ Tax}{Total\ Assets} \qquad (7)$$

Tax Avoidance

Tax avoidance efforts or those carried out by companies that are carried out legally and safely for taxpayers because they do not violate tax regulations. Ngadiman & Puspitasari (2014) said that this tax avoidance practice is carried out by utilizing the loopholes in the applicable tax regulations, in carrying out tax avoidance practices, companies that have strong intellectual capital, such as quality human resources, good management systems, and mastery of information technology, tend to have a competitive advantage over companies that have low intellectual capital. These intellectual resources allow companies to identify loopholes in tax regulations and design complex but legal tax avoidance strategies (Mardiasmo, 2018). Tax avoidance or tax planning is a process of controlling actions to be free from the consequences of tax imposition that are not desired by stakeholders. Tax avoidance itself aims to be efficient and minimize the tax burden charged to the company. According to Ilmiani & Sutrisno (2014) large and multinational companies tend to be more aggressive in doing tax avoidance. This is due to their ability to hire competent tax experts, build sophisticated management information systems, and take advantage of loopholes in cross-country tax regulations. In addition, companies with a high level of research and development also tend to do more aggressive tax avoidance.

Companies with intellectual capital in the form of knowledge and technology can enable companies to design more complex and innovative tax avoidance strategies, in conducting legal tax avoidance, intellectual capital can be the key to success for implementing tax avoidance or utilizing existing loopholes. According to (Putri & Febrianty, 2016) Tax Avoidance can be measured by the ETR (Effective Tax Rate) ratio as follows.

$$Effective\ Tax\ Rate\ (ETR) = \frac{Tax\ Expense}{Earning\ Before\ Tax} \qquad (8)$$

Capital Intensity
Capital intensity is a ratio to measure how much fixed asset investment a company needs in carrying out its operations with its total assets (Brigham & Houston, 2019). Capital intensity shows the company's level of efficiency in using its assets to generate sales and illustrates the amount of company wealth invested in fixed assets (Fahrani et al., 2018) According to research by (Anggriantari & Purwantini, 2020), capital intensity is a form of fixed asset investment made by the company to achieve the company's operational goals. The form of fixed asset investment can show and illustrate the amount of company wealth invested in its fixed assets (Marlinda et al., 2020). Capital intensity is a ratio that can help companies describe the flexibility in allocating resources and facing changes in the business environment in the current global era. In today's knowledge-based economy, intellectual capital is becoming increasingly important for the sustainability and growth of the company. Capital intensity is an important factor to consider in making investment decisions and strategic management of the company. Fixed assets and intellectual capital have complementary roles in creating value for the firm, and this has a clear impact on the financial fundamentals of the firm, as fixed assets are required to efficiently improve the firm's production and operational processes. However, in today's increasingly competitive business environment, long-term competitive advantage often depends on a firm's ability to develop and utilize its intellectual capital (Chen et al., 2005; Vargas & Lloria, 2017). Intellectual capital owned by the company such as knowledge, innovation, and human resource expertise can boost the efficiency, productivity, and competitiveness of the company by utilizing the company's fixed assets.

Capital intensity has important implications for the sustainability of the company because of how much part of the company's value comes from its fixed assets. Of course, companies with a high level of capital intensity face challenges in terms of large capital requirements for fixed asset investment (Marlinda et al., 2020). Previous research conducted also revealed that high capital intensity can increase firm value if it is well managed and supported by strong intellectual capital. The formula for calculating capital intensity is as follows.

$$Capital\ Intensity = \frac{Total\ Fixed\ Asset}{Total\ Asset} \qquad (9)$$

Thus, the hypothesis for this study is as follows.
H_1: return on assets has a positive effect on intellectual capital.
H_2: tax avoidance has a positive effect on intellectual capital.
H_3: capital intensity has a positive effect on intellectual capital.
H_4: return on assets has a positive effect on firm value.
H_5: intellectual capital has a positive effect on firm value.
H_6: return on assets has a positive effect on firm value with intellectual capital as a mediating variable.
H_7: tax avoidance has a positive effect on firm value with intellectual capital as a mediating variable.
H_8: capital intensity has a positive effect on firm value with intellectual capital as a mediating variable.

Table 1. Descriptive Statistical Analysis

	ROA	Tax Avoidance	Capital Intensity	Intellectual Capital	Tobin's Q
Mean	0,023	0,147	61.431,06	11.170	0,805
Median	0,027	0,090	57.485,50	7.277	0,712
Maximum	0,175	0,740	96.284,00	46.981	2,020
Minimum	-0,038	-0,108	20.504,00	2.036	0,381
Std. Dev.	0,052	0,223	21.705,32	10.704	0,358

RESEARCH METHOD

This study uses associative quantitative research to examine the effect of return on assets, tax avoidance, and capital intensity on firm value with intellectual capital as a mediating variable. The secondary data obtained from the results of financial reports (annual reports) from property and real estate sector companies incorporated on the Indonesia Stock Exchange for the period 2019-2022 which were obtained accessed through the official IDX website. The population in this study were all companies in the Property and Real Estate sector on the *Indonesia Stock Exchange* (IDX). The observation period of this study was carried out from 2019-2022. The sampling technique in this study was purposive sampling. The population are 87 Property and Real Estate companies listed on the Indonesia Stock Exchange between 2019 - 2022.

The sample comprises 51 companies from the population that meet the sample criteria of this study. The criteria are Property and Real Estate companies listed on the Indonesia Stock Exchange that have survived throughout 2019-2022, and companies that provide complete financial data throughout 2019-2022. The data analysis method used is multiple regression analysis. The data analysis in this study is panel data, a combination of time series and cross section. The panel data regression model in this study consists of the Common Effect Model, Fixed Effect Model, and Random Effect Model, which, before determining the model, we must test the suitability of the panel data regression model to get the best estimate (Farid & Akhmadi, 2023). The following is a multiple linear regression equation to determine the effect of mediation in this study. The $X_{1,2,3}$ is Return on Assets, Tax Avoidance, and Capital Intensity; Z is Intellectual Capital; Y is Firm Value; α is constant; $\beta_{1,2,3}$ is unidirectional coefficient.

$$Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \qquad (10)$$
$$Y = \alpha + \beta_1 X_1 + \alpha + \beta_2 Z_2 \qquad (11)$$

RESULT AND DISCUSSIONS

Descriptive Statistics Testing

Descriptive statistical analysis aims to provide an overview or description of the variables to be studied, so that the data can be easily understood. The following is presented as a descriptive statistical output of the data used in this study. Based on the table above, it can be seen that the most significant average value is obtained by the Capital Intensity variable, which is 61.431.06. In contrast, the ROA variable has the smallest average value, 0.023. The Capital Intensity variable also gets the maximum value, namely 96.284.00, while the ROA variable also gets the smallest maximum value among all variables, namely 0.175. The minimum value obtained by Capital Intensity is 20.504.00 and the smallest minimum value obtained by the ROA variable with a value of -0,038.

Table 2. Chouw Test for Structural 1 and 2

Effects Test	Structural 1			Structural 2		
	Statistic	d.f.	Prob	Statistic	d.f.	Prob
Cross-section F	1,800	(3,9)	0,217	0,940	(3,10)	0,457
Cross-section Chi-square	7,520	3	0,057	3,974	3	0,264

Table 3. LM Test for Structural 1 and 2

Effects Test	Structural 1			Structural 2		
	Cross-section	Time	Both	Cross-section	Time	Both
Cross-section F	0,615	0,995	1,610	0,092	0,504	0,596
Cross-section Chi-square	(0,433)	(0,319)	(0,205)	(0,762)	(0,478)	(0,440)

Testing and Selection of Model Assumptions

The Chow test aims to determine the best model to use between the Common Effect Model (CEM) or Fixed Effect Model (FEM) in estimating panel data. The Chow test is a test to compare the Common effect model with the fixed effect (Napitupulu et al., 2021)The cross-section probability value F provides the basis for decision-making in the Chow test. Then, the model assumptions are tested through the Lagrange Multiplier Test, which aims to determine the best model between the random effect approach and the common effect approach that should be used in panel data modeling. Based on the Chow Test results in Table 2, structural 1 has a probability value of 0,057> 0,05, and structural 2 has a probability value of 0,264 > 0,05, so that both structural 1 and 2, the selected model is the Common Effect Model because the probability value > 0,05. If the selected model is the Common Effect Model, the Hausman Test can be skipped and continued with the Lagrange Multiplier Test. Based on the LM test conducted, it is known that the Breusch-Pagan probability value in structural 1 is 0.433 > 0.05, and structural 2 gets a probability of 0.762 > 0.05, which means that the selected model is the Common Effect Model. Based on the results of the two tests that have been carried out, the Common Effect Model is the selected and best regression model for both structures. Then the multiple regression equations for structural 1 and 2 are obtained as follows (see Table 4).

$$Z = 1.746 + 174{,}958X_1 + 8{,}055X_2 + 6.872X_3$$
$$Y = 0{,}535 + 0{,}969X_1 + 0{,}022Z$$

Hypothesis Test

Table 4 shows the results of structural hypothesis tests 1 and 2 to determine the relationship between the following research variables. Based on the test results from structural 1 above, it can be seen for the t test results, the first on the ROA variable produces a positive t-statistic value and a probability value of 0.000 < 0.05, then H_1 is accepted, and H_0 is rejected, meaning that ROA has a positive effect on intellectual capital, when the company can generate high profits using all of its assets, the company will increase its investment in intellectual capital. The results of this study are in accordance with previous research conducted by (Kadarningsih et al., 2020). This is in line with the theory of value creation which explains that companies that can generate higher profits from their assets tend to have a better ability to create added value in the form of increased intellectual capital (Hermans & Kauranen, 2005).

Table 4. T-test, F-test, and R^2 test of Structural 1 and Structural 2

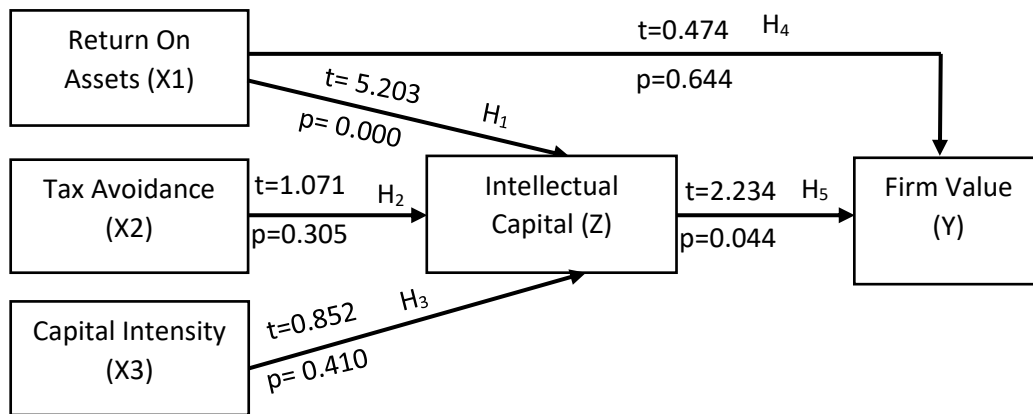| Variable	Coefficient	Std. Error	t-Statistic	Prob.	Adjusted R-squared	Prob(F-statistic)
Structural 1						
C	1,746	5,643	0,309	0,762	0,631	0,002
X1	174,958	33,627	5,203	0,000		
X2	8,055	7,524	1,071	0,305		
X3	6,870	8,060	0,852	0,410		
Structural 2						
C	0,535	0,098	5,450	0,000	0,552	0,002
X1	0,969	2,047	0,474	0,644		
Z	0,022	0,010	2,234	0,044		

Figure. 1. Conceptual Framework of Research

In the test for the tax avoidance variable, it is known that the value of tax avoidance is 0.305 > 0.05, then H_2 is rejected, and H_0 is accepted, meaning that tax avoidance has no effect on intellectual capital, this test means that tax avoidance by the company is not invested in the company's intellectual capital (Desai et al., 2009). In the test for the capital intensity variable, it is known that the value of capital intensity is 0.410 > 0.05, then H_3 is rejected, and H_0 is accepted, meaning that capital intensity does not affect intellectual capital, the higher the company's fixed assets, the company will not increase its intellectual capital or human capital (Alam, 2024). In the F test (goodness of fit model) for structural 1 in Table 4, it is known that the F-statistic probability value is 0.002 <0.05, which means that the ROA, tax avoidance, and capital intensity variables together affect intellectual capital. In testing the coefficient of determination (R^2) in structural 1, it can be concluded that the ROA, tax avoidance, and capital intensity variables are able to explain the intellectual capital variable by 0.631 or 63% while other variables explain the remaining 37%.

Based on the test results from structural 2 in Table 4, it can be seen for the t test results, the first on the ROA variable produces a probability value of 0.644 > 0.05, then H_4 is rejected, H_0 and accepted, meaning that ROA has no effect on firm value proxied by Tobins'Q, high corporate profits are not always an attraction for investors to invest in the company, factors that may affect the value of the company being studied today such as dividend policy, solvency, company size, and good corporate governance (Mahanani & Kartika, 2022). This is also in accordance with stakeholder theory and value creation theory where the value of the company is not only determined by financial performance, but also by the company's ability to meet the interests of various stakeholders and emphasizes that the value of the company is more determined by its ability to create added value than just making a profit (Argandoña, 2011).
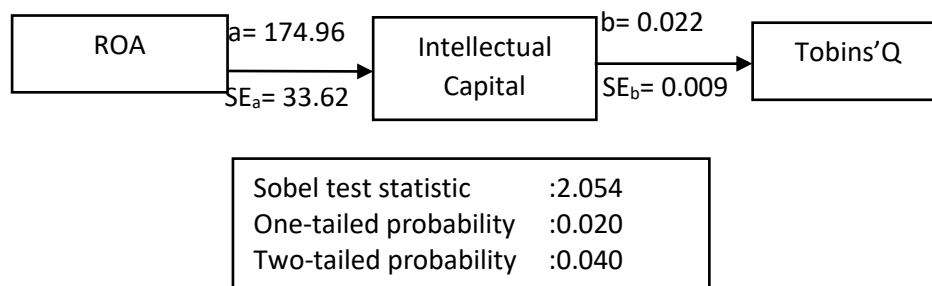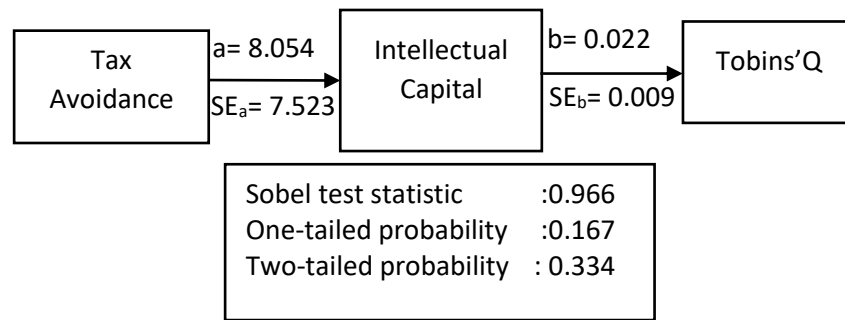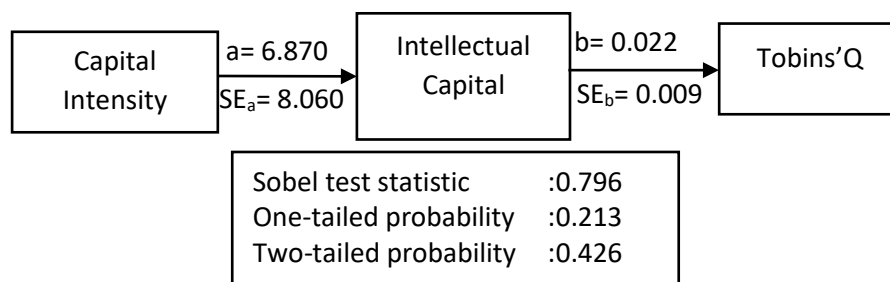

Figure. 2. Sobel Test X_1 on Y through Z

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┌──────────────┐ a= 8.054    ┌──────────────┐ b= 0.022    ┌──────────────┐
│     Tax      │─────────────│ Intellectual │─────────────│   Tobins'Q   │
│  Avoidance   │ SEₐ= 7.523  │   Capital    │ SE_b= 0.009 │              │
└──────────────┘             └──────────────┘             └──────────────┘
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Sobel test statistic	:0.966
One-tailed probability	:0.167
Two-tailed probability	: 0.334

Figure 3. Sobel Test X_2 on Y through Z

The test for the intellectual capital variable is known to result in a positive t-statistic value and a probability value of 0.044 < 0.05, then H_5 is accepted, and H_0 is rejected, meaning that intellectual capital has a positive effect on firm value. Companies that have high intellectual capital can better manage their companies by utilizing the three main pillars of intellectual capital, so as to provide benefits for shareholders or investors, which can increase company value. This is in line with research conducted by (Riahi-Belkaoui, 2003) (Randa & Ariyanto Solon, 2012). In the F test (simultaneous influence) for structural 2 above, it is known that the F-statistic probability value is 0.002 < 0.05, which means that the ROA and intellectual capital variables jointly affect firm value. In testing the coefficient of determination (R^2) in structural 2, it can be concluded that the ROA and intellectual capital variables can explain the firm value variable by 0,552 or 55%. In comparison, other variables explain the remaining 45%.

Then, the Sobel test is carried out to test how much the indirect effect between the independent and dependent variables is through the mediating variable. Based on the results of the sobel test calculation above, the t value is 2.054> t table 1.97, then H_6 is accepted and H_0 is rejected, meaning that ROA positively affects firm value with intellectual capital as a mediating variable. The profits generated by the company tend to be utilized and appropriately managed to invest in human capital, structural capital, and customer capital, so effective and efficient utilization will indirectly increase the company's value. This is in line with research conducted by (Ulum, 2017).

Based on the results of the Sobel test calculation above, the t value is 0.966 < t table 1.97, then H_7 is rejected and H_0 is accepted, meaning that tax avoidance has no effect on firm value with intellectual capital as a mediating variable. The tax avoidance by the company is reduced due to the awareness of the intellectual capital owned by the company, the workers are more obedient to tax regulations and minimize the utilization of existing loopholes, so that the reduced utilization has no impact on the firm value (Alaika et al., 2023). Based on the results of the sobel test calculation above, the t value is 0.796 < t table 1.97, then H_8 is rejected and H_0 is accepted, meaning that capital intensity has no effect on firm value with intellectual capital as a mediating variable. It can be concluded that companies with a lot of fixed assets managed by workers or corporate intellectual capital cannot have an influence on firm value (Aniatun et al., 2022).

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┌──────────────┐ a= 6.870    ┌──────────────┐ b= 0.022    ┌──────────────┐
│   Capital    │─────────────│ Intellectual │─────────────│   Tobins'Q   │
│  Intensity   │ SEₐ= 8.060  │   Capital    │ SE_b= 0.009 │              │
└──────────────┘             └──────────────┘             └──────────────┘
```

Sobel test statistic	:0.796
One-tailed probability	:0.213
Two-tailed probability	:0.426

Figure 4. Sobel Test X_3 on Y through Z

The results of the research findings in this study, have provided answers to the problems and research objectives carried out in this study where the factor of company value at this time with changes in a dynamically developing environment requires high intellectual capital to manage the resources owned by the company, at this time the value of intangible assets has a higher value growth rate than the value of tangible fixed assets. In addition, the results of the study also provide information that can be taken into consideration by stakeholders in making investment decision policies. Then the sustainability of the results of this study can provide important information for subsequent researchers to be able to develop a company value measurement instrument, so that the information obtained from the measurement results will provide valid and reliable values by considering the current economic conditions, which are adjusted to the company's operational area. There are several hypotheses that are not accepted. Tax Avoidance has no effect on Intellectual Capital: This can occur because the funds from tax savings are more directed to other interests, such as the expansion of fixed assets or dividend payments. Capital Intensity has no effect on Intellectual Capital: Companies tend to maximize the use of physical assets for operations rather than investing in intangible assets such as human resource development or technology. Profitability (ROA) has no effect on Firm Value: This result can be caused by external factors such as economic uncertainty or market sentiment, where investors do not only look at profitability alone, but also take into account other aspects such as risk management, dividend policy, and corporate governance.

CONCLUSION

The results of the study show that of the 8 hypotheses proposed, it was found that H_1, which states that profitability affects intellectual capital, then H2 and H3, state that tax avoidance and capital intensity do not affect intellectual capital. Tax avoidance and capital intensity do not affect intellectual capital. Then H_4 states that profitability does not directly affect firm value. Meanwhile, H_5 states that intellectual capital affects firm value. The results of hypothesis testing on path model-1 (H_6) explain that profitability through Intellectual capital affects firm value. The results of hypothesis testing on path model-2 (H_7) explain that tax avoidance through intellectual capital does not affect firm value. The results of hypothesis testing on path model-3 (H_8) indicate that capital intensity through Intellectual capital does not affect firm value. The results show that measuring firm value must adjust companies' economic conditions and characteristics in each country because it will produce different values. This is in accordance with the basic theory researchers use, namely Stakeholder Theory and Value Creation. Creating firm value adjusts the development of the company's environment, which is currently very dynamic and changing quickly. Managerial implications: The results of this study provide implications for stakeholders' decisions about preparing and making investment policies because firm value is an indicator that can holistically explain the company's financial performance. The results of this study can provide important information for the following researchers to develop a firm value measurement instrument using a sample based on technology capital that is growing rapidly and dynamically. Then, in the following research discussion, the measurement of firm value must distinguish the value of assets invested in human capital and technological capital.The study's results contribute important information for stakeholders in making investment decision policies, because measuring the performance of the company's value validly and reliably will reduce the risk in making investment decisions. This study provides a clear picture that the value of the company used in measuring company performance must adjust to the characteristics and environmental changes in the company's operational area. The author proposes suggestions for the development of measurements by combining the value of fixed assets owned with the market value of shares owned by the company so that the company can assess the effectiveness and efficiency in managing its total assets.

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