

THE EFFECT OF INTELLECTUAL CAPITAL AND SUSTAINABILITY REPORT ON FIRM VALUE MEDIATED BY FINANCIAL PERFORMANCE

PENGARUH INTELLECTUAL CAPITAL DAN SUSTAINABILITY REPORT TERHADAP NILAI PERUSAHAAN YANG DIMEDIASI OLEH KINERJA KEUANGAN

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ABSTRAK

Tujuan dari penelitian ini adalah untuk menguji pengaruh *intellectual capital*, yang diukur dengan proksi VAIC (*Value Added Intellectual Coefficient*), dan *sustainability report* yang diukur dengan proksi SRDI (*Sustainability Report Disclosure Index*), terhadap nilai perusahaan (*Tobin's Q*), yang dimediasi oleh kinerja keuangan (ROA) pada perusahaan-perusahaan yang terdaftar di Indeks LQ45 pada tahun 2018 sampai dengan tahun 2022. Penelitian ini menggunakan metode kuantitatif. Dengan sampel penelitian sebanyak 15 perusahaan, pendekatan *purposive sampling* digunakan untuk memilih sampel. Data sekunder yang diambil dari laporan tahunan dan laporan keberlanjutan perusahaan, diperoleh 75 data yang telah diolah. Penelitian ini menggunakan analisis jalur dan regresi data panel. Hasil penelitian menunjukkan bahwa secara parsial *intellectual capital* dan *sustainability report* tidak berpengaruh terhadap nilai perusahaan, ROA berpengaruh positif terhadap nilai perusahaan, dan secara simultan *intellectual capital*, *sustainability report*, dan ROA berpengaruh signifikan terhadap nilai perusahaan. Selanjutnya, baik secara parsial maupun simultan *intellectual capital* dan *sustainability report* berpengaruh positif terhadap ROA. Hasil penelitian ini juga menunjukkan bahwa ROA tidak mampu memediasi hubungan antara *intellectual capital* dan *sustainability report* terhadap nilai perusahaan.

Kata kunci: *Intellectual Capital, Sustainability Report, Kinerja Keuangan, Nilai Perusahaan*

ABSTRACT

The purpose of this study is to examine the impact of intellectual capital, as measured by the proxy VAIC (Value Added Intellectual Coefficient), and sustainability report, as measured by the proxy SRDI (Sustainability Report Disclosure Index), on firm value (Tobin's Q), as mediated by financial performance (ROA) in companies listed on the LQ45 Index from 2018 to 2022. This study employs quantitative methods. With a study sample of 15 firms, the purposive sampling approach was employed to choose samples. Secondary data taken from the company's annual report and sustainability report, obtained 75 processed data, was utilized. With the assistance of Eviews 12 software, this study employs path analysis and panel data regression. The results showed that partially intellectual capital and sustainability report have no effect on firm value, ROA has a positive effect on firm value, and simultaneously intellectual capital, sustainability report, and ROA have a significant effect on firm value. Furthermore, both partially and simultaneously intellectual capital and sustainability report have a positive effect on ROA. The results of this study also show that ROA is not able to mediate the relationship between intellectual capital and sustainability report on firm value.

Keywords: *Intellectual Capital, Sustainability Report, Financial Performance, Firm Value*

INTRODUCTION

Technological developments accompanied by rapid digital transformation

demand changes made by companies in today's business world to improve their competitiveness and performance as a

reflection of firm value. According to Salvatore (2005), the basic purpose of the corporation is to maximize shareholders through a growth in firm value. An increase in firm value reflects the high prosperity of shareholders. A high firm value suggests that the corporation is capable of effectively managing its management and that shareholder prosperity is likewise high. This is a good indicator that investors can invest in the firm. Tobin's Q is one of numerous indicators used to assess the value of a company.

Tobin's Q value can provide complete information and serve as a forward-looking indicator of company performance because it is able to predict the company's market value (Dezso & Ross, 2012). Tobin's Q comes from the name of the inventor in 1968, James Tobin from Yale University, this value represents the state of the company's future investment potential. (Tobin, 1969).

The following is a graph of the average Tobin's Q value of companies listed on the LQ45 Index which is the research sample from 2018 - 2022.

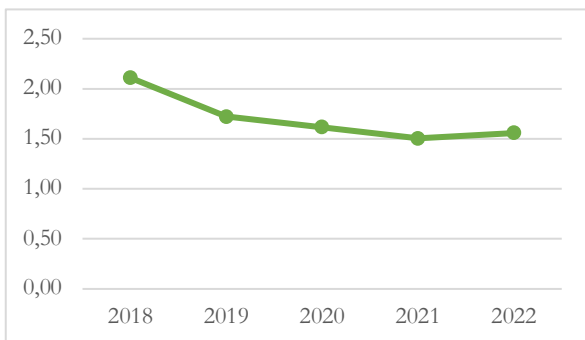


Figure 1 Chart of Average Tobin's Q Value

Source: Indonesia Stock Exchange (data processed, 2023)

The graph above shows that the company value tends to decrease during 2018 - 2021 and increases again in 2022, but during this period the Tobin's Q value is above 1. This shows that companies in the LQ45 index have good investment opportunities and high growth potential and company management

can manage their assets well, the greater the Tobin's Q value, the more valuable the firm.

The LQ45 index is still considered an important benchmark for the health of the stock market in Indonesia. This index reflects the performance of leading stocks, as evidenced by the data from www.ojk.go.id for the second semester of 2022, which has improved from 17.36% to 19.38%. The LQ45 index is a collection of stocks that have a large market capitalization with good company fundamentals, but in the period 2018 - 2022 the value of companies in this index tends to decline. Several factors may affect a company's rise and decline, including its financial performance, intellectual capital, and sustainability reports.

Financial performance is a summary of a company's financial state in a single reporting period, including features of raising and channeling funds as assessed by measures of liquidity, profitability, and capital adequacy (Fahmi, 2014). Return On Assets is a popular metric for determining a company's profitability; this figure represents the company's capacity to generate profits based on its assets. Company value is reflected in its financial performance, companies that prioritize the prosperity and welfare of shareholders will always try to improve financial performance so as to maximize share prices. The greater the company's financial performance, the greater its worth (Triagustina et al., 2015)

Intellectual Capital is an intangible asset as a form of knowledge and information in a company in order to create value in a company (Sulistiyowati, 2021). Intellectual capital is the information necessary by investors and stakeholders to make investment decisions, and it refers to vital knowledge-based assets that are not reflected on a comprehensive balance sheet. When the company can utilize its intellectual capital to the maximum, the company is considered good at creating its wealth in the future (Abdolmohammadi, 2005). Intellectual capital

is needed as added value for the company to increase competitiveness and create a competitive advantage for the company which will be reflected in the company's value. As a result, the disclosure of intellectual capital can have an impact on the company's worth.

Sustainability Reports is a report that tells about the company's performance and contribution to social, economic, and environmental sustainability. This report contains measurement, communication and requests to all managers of responsibilities related to the company's need to achieve the company's sustainability capabilities (Elkington, 1997). The purpose of the sustainability report is to provide additional information about the company's activities and as a means of signaling to stakeholders. Companies that transparently report sustainability reports can create added value for companies that have an impact on investor consideration. As a result, the more the disclosure of sustainability reports, the better the company's worth.

Several studies have been undertaken to evaluate the impact of intellectual capital and sustainability reports on firm value as mediated by financial performance, such as research by Najib et al. (2022) results in sustainability reports and intellectual capital have no significant effect on firm value, according to the findings of research by Hartawan et al (2022). Meanwhile, research conducted by P. P. Dewi & Dewi (2022) states that sustainability reporting and intellectual capital have a positive and significant effect on firm value, according to the findings of research by Hafni (2015), Setyawati (2022a).

A lot of factors contribute to the decline in corporate value. The LQ45 Index has a high percentage of profit over the last five years, but the value of companies listed on this index tends to decline. Intellectual capital, sustainability reports, and financial performance are all factors that influence firm value. These factors need to be analyzed so that company management can increase the value

of companies that tend to decline so that they return to stability which has a good impact on company performance.

The above explanation demonstrates that there are contradicting conclusions based on empirical phenomena and research results; so, this study attempts to examine and update the research by determining the variables which affect company value more fully.

LITERATURE REVIEW

Signaling Theory

Signaling theory refers to information released by firms in order to convey signals to investors about the success of the company. This information can be considered by investors in making decisions. This theory encourages management to always try to disclose positive signals and private information it is thought to be appealing to investors as a reason for them to invest in the firm (Suwardjono, 2014)

Randa & Solon (2012) stated that voluntary intellectual capital disclosure enables investors and others to better analyze the company's future potential, make proper appraisals of the company, and reduce risk perceptions. Positive signals from the disclosure of intellectual capital and sustainability reports are likely to generate a good market response, providing the company with a competitive edge and added value.

Legitimacy Theory

Dowling & Pfeffer (1975) put forward a legitimacy theory that explains the differences in norms that exist in the company with the norms that apply in society. This difference can cause the company to be threatened, known as the legitimacy gap. According to Adila & Syofyan (2016) legitimacy theory describes how companies interact with their consumers. A company will publish its operations willingly if management believes that this is what the society expects (Deegan & Unerman, 2004)

Intellectual capital will be disclosed if the corporation considers there is a compelling reason to do so. This can happen when a corporation discovers that it is unable to justify its status based on tangible assets that are widely recognized as indicators of company success (Ulum et al., 2008). Companies also need legalization from society by publishing sustainability reports that can be accessed by the public. Thus, acceptance by the community means that the company has received legality from the community.

Stakeholder Theory

Freeman & McVea (2005) defines that a stakeholder is a group that significantly influences the success of an organization or company. Stakeholder theory aims to help company executives understand the stakeholder environment and approach it more effectively. This theory is intended to assist firm management in increasing value as a result of the company's operations, in growing value though minimizing losses that may occur. This theory is that stakeholders have a higher position than company management. Stakeholders have to influence management in utilizing all the potential owned by the organization (Widarjo, 2011)

Firm Value

Keown (2005) defines firm value as the market value of a company's debt and equity. If the company's price rises, firm value can deliver optimum shareholder benefit (Fidhayatin & Dewi, 2012). If the firm can bring prosperity to its shareholders, the public will believe it has a high worth. High company value will entice investors to invest in a company, making them believe not just in the company's present success, but also in its future performance potential. Investment possibilities can offer a favorable signal about future company growth, increasing company value, and maximizing company value is the ultimate purpose of corporate management (Simarmata & Subowo, 2016)

Tobin's Q ratio may be used to calculate firm value; this ratio is an indication of corporate performance that demonstrates management performance in managing company assets. A low firm's Tobin's Q value ranges from 0 to 1, and a number greater than 1 implies that the company has superior growth possibilities (Simetris & Darmawan, 2019). This value is useful for measuring company value because it provides the best information on the company. Tobin's Q reveals that investment in assets generates returns that are more valuable than the initial expenditure.

Financial Performance

Financial performance is an accomplishment that has been reached through maximal effort and consists of a balance sheet, income statement, and statement of changes in capital as a measuring tool in knowing the company's success during a specific time (Husnan, 2015). The capacity of the firm to produce a profit in its activities is the primary emphasis in evaluating the company's success.

Profitability is an indicator of meeting responsibilities to stakeholders and is part of the company's value generation in relation to the company's future possibilities. Higher profitability can show the strength and excellence of the company.

Intellectual Capital

Brooking (1996) revealed that intellectual capital is a term known to describe intangible assets which are a combination of market and human-centered intellectual property and corporate infrastructure that allows for corporate development. All organizational knowledge, people, and firm skills in the production of value added and lasting competitive advantage are considered intellectual capital. Intellectual capital is described as a set of intangible resources, abilities, and competition that may drive performance and provide value to a company (Bontis, 1998)

Intellectual capital is intended to close the knowledge gap between corporations and financial statement readers. Pulic (1998) used the VAIC (Value Added Intellectual Coefficient) to assess the performance of intellectual capital.

Sustainability Report

Sustainability report is a report that includes non-financial information that assists the firm in developing in a sustainable manner; this report covers the company's responsible performance (Elkington, 1997). Sustainability report describes a company's performance and contribution to social, economic, and environmental sustainability. A sustainability report demonstrates a company's dedication to the environment and society.

Sustainability Reports consists of three components, namely economic, environmental and social performance as a means of corporate accountability to stakeholders for their operational activities. In making sustainability reports, companies need to refer to applicable regulations, but there are many frameworks in meeting the standards for making sustainability reports themselves. The framework most often used by companies is the GRI Standard (Global Reporting Initiative Standard).

Based on the description above, the relationship between variables in this study is encapsulated in the conceptual model illustrated below.

Information:

- ▶ = Partial effect
- ▶ = Simultaneous effect
- ▶ = Mediation effect

Based on the conceptual model above, the following hypothesis is determined:

- H₁: Return On Assets has a positive effect on Tobin's Q
- H₂: Intellectual Capital has a positive effect on Tobin's Q
- H₃: Sustainability Report has a positive effect on Tobin's Q
- H₄: Return On Assets, Intellectual Capital, and Sustainability Report simultaneously have a positive effect on Tobin's Q
- H₅: Intellectual Capital has a positive effect on Return On Assets
- H₆: Sustainability Report has a positive effect on Return On Assets
- H₇: Intellectual Capital, and Sustainability Report simultaneously have a positive effect on Return On Assets
- H₈: Return On Assets mediates the effect of Intellectual Capital on Tobin's Q
- H₉: Return On Assets mediates the effect of Sustainability Report on Tobin's Q.

RESEARCH METHODS

This study used an associative descriptive quantitative approach to evaluate the impact of one variable on another. With a quantitative approach, the hypothesis that has been formulated can be tested based on previously collected data. Secondary data used in this study include companies listed in the

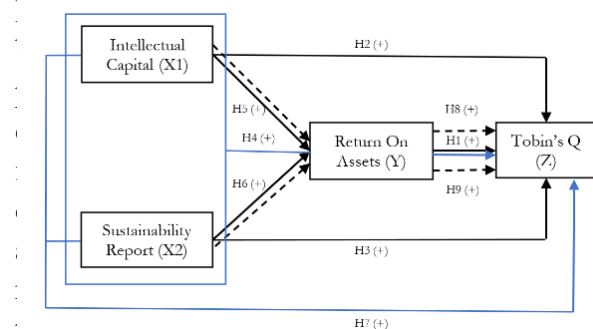


Figure 2 Conceptual Model

study. This study used path analysis data analysis techniques to examine the direct and

indirect impacts of research variables, with panel data regression serving as the test model.

Population and Sample

The population in this study is companies listed in the LQ45 Index for the period 2018-2022, with a total of 69 companies entering as LQ45 Index companies. This index is comprised of premier stocks with significant liquidity and market size, as well as strong company fundamentals. Because LQ45 is seen as a high-performing index, it is frequently utilized as a barometer of the health of the Indonesian stock market.

The sample for this study was selected utilizing a purposive selection strategy using a non-probability sampling approach. This approach is used to compute sample size based on the researcher's criteria. These are the sample selection criteria:

1. Consistently listed in the LQ45 Index during the period 2018 - 2022.
2. Complete reporting of year reports, sustainability reports, and did not experience losses during the 2018 - 2022 period.

Based on the above criteria, a research sample of 15 companies was obtained from a total of 69 companies listed on the LQ45 Index during the period 2018 to 2022.

Research Variable

Dependent Variable

The dependent variable used is firm value with Tobin's Q measuring instrument. Tobin's Q is used to evaluate managerial performance and forecast a firm's market value. The formula for calculating Tobin's Q is as follows:

$$\text{Tobin's Q} = \frac{(\text{Market Value of Equity} + \text{Debt})}{\text{Total Asset}}$$

Independent Variable

1. Intellectual Capital

Pulic (1998) assesses intellectual capital performance using Value Added (VA) generated by VAHU (human capital), VACA (physical capital), and STVA (structural capital). The VAIC (Value Added Intellectual Coefficient) represents the sum of all three value added. The steps for determining the value of intellectual capital are as follows:

a. Value Added (VA)

Value Added is the most objective statistic of business performance since it indicates the company's capacity to create value. The following is the formula:

$$\text{VA} = \text{OUT} - \text{IN}$$

Description:

Output (OUT): Comprehensive income

Input (IN): Expenses and Other Costs

b. Value Added of Capital Employed (VACA)

VACA is a measure of the VA created from a single unit of physical capital. VACA is the VA/CE (capital employed) ratio. This ratio indicates the impact of each unit of CE to the firm's value added. The following is the formula:

$$\text{VACA} = \text{VA} / \text{CE}$$

Description:

VACA : Ratio of VA to CE

VA: The difference between OUT and IN

CE: Funds provided (equity, net income)

c. Value Added Human Capital (VAHU)

VAHU represents the quantity of VA that can be generated with labor funds. This ratio depicts how much each rupiah invested in HC contributes to the company's value added. The following is the formula:

$$\text{VAHU} = \text{VA} / \text{HC}$$

Description:

VAHU: VA to HC Ratio

VA: the difference between OUT and IN

HC: employee expenses

d. Structural Capital Value Added (STVA)

STVA highlights the role of structural capital (SC) in value development. STVA is the SC to VA ratio. The following is the formula:

$$SC = VA - HC$$

$$STVA = SC / VA$$

Description:

SC: The distinction between VA and HC

VA: The distinction between OUT and IN

HC: Employee Expenses

e. Value Added Intellectual Coefficient (VAIC)

The VAIC model determines the value added intellectual capital coefficient, which is a combination of three coefficients: human capital, physical capital, and structural capital. The following is the formula:

$$VAIC = VACA + VAHU + STVA$$

2. Sustainability Report

A sustainability report describes a company's performance and contribution to economic, social, and environmental sustainability. According to the framework utilized, the SRDI (Sustainability Reports Disclosure Index) is used to measure sustainability reports. Each disclosure of sustainability report items by the firm is given a score of 1 in assessing the SRDI value, and a score of 0 if the item is not revealed. The formula is as follows:

$$SRDI = n / k$$

Description:

n: Number of disclosure items made by the company

k: The expected amount of items

Intervening Variable

In this study, financial performance interacts with the proxy ROA. ROA measures a company's capacity to generate profits from its assets. The following formula can be used to calculate:

$$ROA = (EAT / \text{Total Assets}) \times 100\%$$

Description:

EAT: Earnings After Tax

Research Model

Panel Data Regression

There are three processes in panel data regression to obtain the optimal computational estimating model: FEM (Fixed Effect Model), CEM (Common Effect Model), and REM (Random Effect Model).

Table 1 Panel Data Regression Model Test Criteria

Name of Test	Criteria
Chow Test	H ₀ : CEM H ₁ : FEM Prob < 0.05, FEM was chosen. Prob > 0.05, CEM was chosen.
Hausman Test	H ₀ : REM H ₁ : FEM Prob < 0.05, FEM was chosen. Prob > 0.05, REM was chosen.
Lagrange Multiplier Test	H ₀ : CEM H ₁ : REM Prob < 0.05, REM was chosen. Prob > 0.05, CEM was chosen.

Source: data processed (2023)

In panel data regression there are 2 models used for hypothesis testing, this model is chosen to be the best model based on research data. The panel data regression model testing criteria above are used to select the best model in this study.

After obtaining the best model, the following regression equation is used:

Regression Model 1

Equation (1) presents the regression model used to test hypotheses H₁ - H₄ which expect that Intellectual Capital, Sustainability Report, and ROA partially or simultaneously have a positive effect on Firm Value.

$$Z_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 Y_{3it} + \varepsilon_{it} + \mu_{it}$$

Regression Model 2

Equation (2) presents the regression model used to test hypotheses H₅ - H₇ which expect that Intellectual Capital, and Sustainability Report partially or simultaneously have a positive effect on ROA.

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \varepsilon_{it} + \mu_{it}$$

Information

- X1 : Intellectual capital
 X2 : Sustainability report
 Y : Return On Assets
 Z : Tobin's Q
 β₀ : Intercept
 β₁- β₃ : Regression coefficient of each independent variable
 ui : Random confounding variable
 ε : Error
 i : The number of observations
 t : The number of time

To test hypotheses H₈ and H₉, an analysis will be carried out based on the results of the path analysis so that the mediating effect of Financial Performance on the relationship between Intellectual Capital and Sustainability Report to Firm Value can be known.

RESULT AND DISCUSSION

Descriptive Statistic

Table 2 The Results of the Descriptive Statistical Analysis Test

	N	Min	Max	Mean	Std. Dev
Q	75	0.91	9.50	1.70	1.31
ROA	75	-6.00	46.66	9.71	10.98
VAIC	75	-7.31	37.88	5.04	5.95
SRDI	75	0.03	0.98	0.62	0.24

Source: data processed (2023)

The following descriptive statistics of the variables used in the study are presented based on the outcomes of the descriptive statistical analysis test, with a total of 75 firm data from annual reports, financial reports, and sustainability reports from the 2018-2022 period:

1. Tobin's Q in the 2018-2022 period range from 0.91 to 9.50, with a mean of 1.70 and standard deviation of 1.31.
2. Return on Assets range from -6 to 46.66, with a mean of 9.71 and standard deviation of 10.98.
3. Intellectual Capital range from -7.31 to 37.88, with a mean of 5.04 and standard deviation of 5.95.
4. Sustainability Report range from 0.03 to 0.98, with a mean of 0.62 and standard deviation of 0.24.

Panel Data Regression Model Selection Results

Table 3 Panel Data Regression Model Selection Results

Chow Test			
	Prob.	Result	Desc
Cross-section F	0.0000	FEM	Prob < 0.05
Hausman Test			
	Prob.	Result	Desc
Cross-section Random	0.9746	REM	Prob > 0.05
Lagrange Multiplier Test			
	Prob.	Result	Desc
Prob. Breusch-pagan	0.0000	REM	Prob < 0.05

Source: data processed (2023)

Based on the results above, this study uses Random Effect Model (REM) as a data analysis testing model. This model residuals (disturbances) between time and between

individuals are assumed to have a relationship that may be interconnected. Parameters that differ between individuals and between times are included in the error so that this model is also referred to as the error component model.

Random Effect Model has intercept disparities accommodated by each company's error terms, the advantage is that this model can eliminate heteroskedasticity. In short, this model helps overcome the uncertainty problem in models that use dummy variables in panel data.

Path Analysis Test Results

Table 4 Result Testing Summary

ROA	Coef.	Sig	Desc
VAIC	0.3018	0.0231	Significant
SRDI	9.0327	0.0073	Significant
N		75	
F		0.0048	Significant
Adjusted R Square		11.39%	
Tobin's Q			
	Coef.	Sig	Desc
VAIC	-0.0218	0.1270	Not Significant
SRDI	-0.2565	0.2902	Not Significant
ROA	0.0638	0.0000	Significant
N		75	
F		0.0002	Significant
Adjusted R Square		20.02%	
Y = 2.5704 + 0.3018 X₁ + 9.0327 X₂			
Z = 1.3526 - 0.0218X₁ - 0.2565 X₂ + 0.0638 Y			

Source: data processed (2023)

Equation I

$$Y = \text{pyx}_1 X_1 + \text{pyx}_2 X_2 + \varepsilon_1$$

$$Y = 0.3018 X_1 + 9.0327 X_2 + 2.5704$$

Based on the equation above, the interpretation is as follows:

1. The effect of Intellectual Capital on ROA based on the table above has a coefficient value of 0.3018 with a positive sign. This means that every 1% increase in intellectual

capital, the return on assets will increase by 0.30% assuming other variables.

2. The effect of Sustainability Report on ROA based on the table above has a coefficient value of 9.0327 with a positive sign. This means that every 1% increase in the sustainability report, the return on assets will increase by 9.03% assuming other variables.
3. ε_1 represents the effect of other factors on the return on assets variable, and the quantity is 2.57%.

Equation II

$$Z = \text{pzx}_1 X_1 + \text{pzx}_2 X_2 + \text{pzy}Y + \varepsilon_1$$

$$Z = -0.0218X_1 - 0.2565 X_2 + 0.0638 Y + 1.3526$$

Based on the equation above, the interpretation is as follows:

1. The effect of Intellectual Capital on Firm Value based on the table above has a coefficient value of 0.0218 with a negative sign. This means that every 1% increase in intellectual capital, the company value will decrease by 0.02% assuming other variables.
2. The effect of Sustainability Report on Firm Value based on the table above has a coefficient value of 0.2565 with a negative sign. This means that every 1% increase in the sustainability report, the company value will decrease by 0.25% with the assumption of other variables.
3. The effect of ROA on Firm Value based on the table above has a coefficient value of 0.0638 with a positive sign. This means that every 1% increase in return on assets, the company value will increase by 0.06% assuming other variables.
4. ε_1 represents the effect of other factors on the return on assets variable, and the quantity is 1.35%.

Direct Effect of Variable

1. The effect of Intellectual Capital on Return On Assets is 0.3018
2. The effect of Sustainability Report on Return On Assets is 9.0327
3. The effect of Intellectual Capital on Firm Value is -0.0218
4. The effect of Sustainability Report on Firm Value is -0.2565
5. The effect of Return On Assets on Firm Value is 0.0638

Indirect Effect of Variable

1. The effect of Intellectual Capital on Firm Value through Return On Assets

Mediation coefficient = $p_{zx1} (-0.0218) \times p_{zy} (0.0638) = -0.0014$

The calculation of the indirect effect is obtained from the coefficient value of X1 on Z through Y. Based on the above calculation, the coefficient of -0.0014 is smaller than the direct effect of intellectual capital on firm value of -0.0218. Thus, H₈ is rejected where return on assets cannot mediate the effect of intellectual capital on firm value.

2. The effect of Sustainability Report on Firm Value through Return On Assets

Mediation coefficient = $p_{zx2} (-0.2565) \times p_{zy} (0.0638) = -0.0167$

The calculation of the indirect effect is obtained from the coefficient value of X2 on Z through Y. Based on the above calculation, the coefficient of -0.0167 is smaller than the direct effect of sustainability report on firm value of -0.2565. Thus, H₉ is rejected where return on assets cannot mediate the effect of sustainability reports on firm value.

Hypotesis Test

Table 5 Hypotesis Test Result

No	Hypothesis	Coef	Prob	Desc	Result
1.	H ₁	0.0638	0.0000	(+) Significant	accepted

2.	H ₂	-0.0218	0.1270	Not Significant	rejected
3.	H ₃	-0.2565	0.2902	Not Significant	rejected
4.	H ₄	5.7597	0.0043	(+) Significant	accepted
5.	H ₅	0.3018	0.0231	(+) Significant	accepted
6.	H ₆	9.0327	0.0073	(+) Significant	accepted
7.	H ₇	7.1772	0.0002	(+) Significant	accepted
8.	H ₈	-0.0014	-	< -0.0218	rejected
9.	H ₉	-0.0167	-	< -0.2565	rejected

Source: data processed (2023)

Several findings were obtained based on the outcomes of the research hypothesis testing done above to quantify the effect on Financial Performance and Firm Value. In the first model, the dependent variables Tobin's Q (Z), Intellectual Capital (X1), Sustainability Report (X2), and ROA (Y) are used to measure firm value. In partial testing, it is found that the independent variables X1 and X2 have a significance value above 0.05 and a negative coefficient value, meaning that Intellectual Capital and Sustainability Report have no effect on Firm Value. However, the significance value of ROA is obtained (0.0000 < 0.05), meaning that ROA has a significant effect on Firm Value. Simultaneous testing is carried out to test X1, X2, and Y against Z and the results obtained F-statistic Value of (0.0043 < 0.005), this indicates a significant effect of the relationship between Intellectual Capital, Sustainability Report, and ROA on Firm Value.

In testing the second model, partially or simultaneously the independent variables X1 and X2 have a significance value below 0.05, meaning that variables X1 and X2 have a significant effect on financial performance. Furthermore, the role of ROA in mediating the effect of X1 and X2 on Z and the coefficient value is obtained below the direct effect value where X1 (-0.0014 < -0.0218) and X2 (-0.0167 < -0.2565), meaning that the ROA variable cannot mediate the effect of the relationship between Intellectual Capital, Sustainability Report on Firm Value.

The Effect of Return On Assets on Tobin's Q

Based on testing the first hypothesis, financial performance measured by ROA has a positive effect on Firm Value. This discovery is congruent with the findings of study undertaken by (Wahongan, 2019) and (N. Dewi et al., 2019). Increased profits are important for the creation of value added and the company's competitive advantage. ROA measures the level of success of company management in managing its assets and capital which has an impact on increasing the company's share price.

The welfare of shareholders is the main goal of the company, so that when the profit generated continues to increase, dividends received by investors will also increase. Companies that maintain the welfare of shareholders will cause a good assessment and appreciation from investors of the company's performance. The increase in stock prices in the market reflects the better company value for investors.

The Effect of Intellectual Capital on Tobin's Q

Based on testing the second hypothesis, the implementation of Intellectual Capital has no effect on Firm Value, according to the findings of research by (Najib et al. 2022) and (Hartawan et al., 2022) which state that intellectual capital has no effect on firm value. In its disclosure, the effect of intellectual capital does not occur directly, because there is no standardized measurement of the intellectual capital component in the financial accounts of the corporation. Intellectual capital has not been used as a decision-making tool as a result of which the market does not place a high value on enterprises that have weak intellectual capital.

This finding contradicts signaling theory, which holds that the disclosure of intellectual capital in a company's annual report is significant information that might

affect investors' decisions. However, the company's intellectual capital disclosure is still ineffective as a signal to shareholders and other stakeholders, therefore the increase in firm value is unaffected.

The Effect of Sustainability Report on Tobin's Q

Based on testing the third hypothesis, it states that the Sustainability Report has no effect on Firm Value. This finding is in line with the results of research conducted (Ermanda & Puspa, 2022) dan (Hartawan et al., 2022). The disclosure of the company's sustainability report has not become the most awaited information by investors, because the sustainability report is still temporary, so the company has not been consistent in its disclosure. Sustainability reports have not become an important instrument to encourage an increase in firm value.

This result is not consistent with stakeholder theory, which states that companies need to account for their performance through financial reports and sustainability reports to external parties, which is necessary to attract stakeholder interest and trust. However, the disclosure of the company's sustainability report has not been able to become a benchmark for investor confidence, because the company's role in the environment, social and economy needs to be disclosed more optimally.

The Effect of Intellectual Capital on Return On Assets

Based on testing the fourth hypothesis, Intellectual Capital has a positive effect on ROA. This finding is consistent with the research results from (Chen et al., 2005) and (N. Dewi et al., 2019). Intellectual capital is essential in the creation of added value and in increasing financial performance. If the corporation can use its intellectual capital, potential to make profits with its entire assets will improve.

This finding is consistent with signal theory, which posits that disclosing intellectual capital can be a good signal for stakeholders and investors, increasing their interest in investing in the company and so increasing profitability.

The Effect of Sustainability Report on Return On Assets

Based on the fifth hypothesis testing, it states that the sustainability report has a positive effect on financial performance as measured by ROA. This finding is consistent with the research results from (N. Dewi et al, 2019) dan (Putra & Subroto, 2022). Sustainability reports assist organizations in setting goals, measuring performance, and managing change in order to improve the sustainability of their operations. The information contained in the sustainability report will help shareholders make investment decisions in the company, as a result it will be clear how good the company's image and performance is, if its performance is considered satisfactory by its shareholders, then investment in the company will continue, which will lead to an increase in company revenue.

Return On Assets mediates the effect of Intellectual Capital on Tobin's Q

Based on testing the eighth hypothesis which states that ROA cannot mediate the relationship between Intellectual Capital and Firm Value. There are several other factors that affect firm value, the relationship between intellectual capital and firm value has a complex nature. This finding is consistent with the results of research conducted by (Wulandari, 2020), the relation between Intellectual Capital and Firm Value cannot be mediated by financial performance. This occurs because the market or investors have not been able to give a more comprehensive assessment of organizations that have effectively managed intellectual capital to generate financial success and profit generation.

Although the company's intellectual capital disclosure can increase company profits, it is still not enough to increase company value, because intellectual capital is a tangible asset held by the corporation, any disclosure of intellectual capital by the company is not considered key information desired by investors. The contribution of financial performance is unable to generate a positive signal, resulting in no meaningful changes in the company's worth.

Return On Assets mediates the effect of Sustainability Report on Tobin's Q

Based on the eighth hypothesis testing which states that ROA cannot mediate the relationship between intellectual capital and firm value. This finding is consistent with the results of research conducted by (Anna & Dwi R.T, 2019), the company's sustainability report is considered not optimal and the disclosure of information is not complete. This will affect the assessment of investors in assessing company performance, where companies that disclose sustainability reports to improve financial performance in generating profits have not been able to move investors to provide good value for the company.

The disclosure of the company's sustainability report has not been able to provide positive signals to investors and the contribution of financial performance is not significant in its influence on firm value, so that changes in firm value are not significant.

CONCLUSION AND SUGGESTION

The purpose of this study was to determine the effect of Intellectual Capital and Sustainability Report on Firm Value mediated by Financial Performance in companies listed in the LQ45 Index for the period 2018 - 2022. Based on the hypothesis testing carried out, the conclusions that can be drawn as research findings are as follows:

1. Testing Return On Assets as a proxy for financial performance, confirms the assumption that the application of the

independent variables Intellectual Capital and Sustainability Report has a significant effect on ROA. These findings acquired study results that reveal a substantial positive association, both partially and concurrently, between Intellectual Capital and Sustainability Report with Return On Assets and support signal theory. An increase in Return On Assets indicates that the company has maximized the intellectual resources owned by the company and plays an active role in accounting for its performance on economic, social and environmental issues in the sustainability report.

2. Firm Value measured by Tobin's Q, produces mixed findings. The Return On Assets variable has a positive and significant effect on firm value, while the Intellectual Capital and Sustainability Report variables have no significant effect on firm value. The firm value measurement model simultaneously provides significant results for all independent variables. This finding does not support Stakeholders Theory with an insignificant relationship with firm value. The company's Intellectual Capital and Sustainability Report disclosure is considered unable to become a benchmark for investor confidence and information that attracts stakeholders to invest in the company.
3. This study also looks at the mediating effect of the relationship between Intellectual Capital and Sustainability Report on Firm Value. These findings shows that Return on Assets cannot mediate the relationship between Intellectual Capital and Sustainability Report on Firm Value. Companies that release their Intellectual Capital and Sustainability Report are seen to be unable to drive lucrative growth in terms of profit generation. The contribution of financial performance is unable to generate a positive signal, resulting in no

meaningful changes in the company's worth.

Because this research has limitations, further research development needs to be considered. Some of these limitations include:

1. This study has not considered macro factors that can affect firm value. The variables used in this study are not sufficient to measure the effect on firm value, several additional variables are needed.
2. This research only covers one stock index. Broader research can be done to find out the deeper influence on firm value.
3. The number of samples is limited because companies that disclose intellectual capital and sustainability reports are still relatively small.

Given the constraints described above, the following are recommendations for future research improvements:

1. Future researchers can add macro and micro variables related to firm value.
2. Further researchers can take a wider research object.
3. Further research can be carried out by paying attention to the research sample in accordance with the variables studied.

REFERENCES

- Abdolmohammadi, M. J. (2005). Intellectual capital disclosure and market capitalization. *Journal of Intellectual Capital*, 6(3), 397–416. <https://doi.org/10.1108/14691930510611139>
- Adila, W., & Syofyan, E. (2016). Pengaruh Corporate Governance dan Karakteristik Perusahaan Terhadap Pengungkapan Sustainability Report: Studi Empiris pada Perusahaan yang Terdaftar di BEI tahun 2010-2014. *Jurnal WR*, 4(2), 777–792.
- Anna, Y. D., & Dwi R.T, D. R. (2019). Sustainability Reporting : Analisis Kinerja Keuangan dan Nilai Perusahaan. *Jurnal ASET (Akuntansi Riset)*, 11(2), 238–255.

- <https://doi.org/10.17509/jaset.v1i12.18804>
- Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management Decision*, 36(2), 63–76. <https://doi.org/10.1108/00251749810204142>
- Brooking, A. (1996). *Intellectual Capital: Core Assets for the Third Millenium Enterprise*. International Thompson Business Press. <https://books.google.co.id/books?id=trzBnQAACAAJ>
- Chen, M., Cheng, S., & 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>
- Deegan, C., & Unerman, J. (2004). *Financial Accounting Theory Critical Perspectives of Accounting*.
- Dewi, N., Kamaliah, K., & Silfi, A. (2019). Pengaruh Tata Kelola Perusahaan, Modal Intelektual dan Pengungkapan Laporan Keberlanjutan terhadap Nilai Perusahaan dengan Kinerja Keuangan sebagai Variabel Mediasi (Studi pada Perusahaan yang Terdaftar di LQ 45 Periode 2014-2017). *Jurnal Ekonomi*, 27(2), 190–204. <https://je.ejournal.unri.ac.id/index.php/JE/article/view/7904>
- Dewi, P. P., & Dewi, K. A. K. (2022). Pengungkapan Sustainability Reporting, Intellectual Capital, dan Nilai Perusahaan. *E-Jurnal Akuntansi*, 32(12), 3761. <https://doi.org/10.24843/eja.2022.v32.i12.p20>
- Dowling, J., & Pfeffer, J. (1975). Organizational Legitimacy: Social Values and Organizational Behavior. *The Pacific Sociological Review*, 18(1), 122–136. <https://doi.org/10.2307/1388226>
- Elkington, J. (1997). John Elkington, Cannibals With Forks: The Triple Bottom Line of 21st Century Business. *Journal of Business Ethics*, 23(2), 229–231. <https://doi.org/10.1023/A:1006129603978>
- Ermanda, M., & Puspa, D. F. (2022). Pengaruh Kepemilikan Institusional, Sustainability Report Dan Intellectual Capital Terhadap Nilai Perusahaan. *Jurnal Kajian Akuntansi Dan Auditing*, 17(2), 135–147. <https://doi.org/10.37301/jkaa.v17i2.89>
- Fahmi, I. (2014). *Pengantar manajemen keuangan: Teori dan soal jawab*.
- Fidhayatin, S. K., & Dewi, N. H. U. (2012). Analisis Nilai Perusahaan, Kinerja Perusahaan Dan Kesempatan Bertumbuh Perusahaan Terhadap Return Saham Pada Perusahaan Manufaktur Yang Listing Di Bei. *The Indonesian Accounting Review*, 2(02), 203. <https://doi.org/10.14414/tiar.v2i02.96>
- Freeman, R. E., & McVea, J. (2005). A Stakeholder Approach to Strategic Management. *Journal of Chemical Technology and Biotechnology*, 77(6), 671–677. <https://doi.org/10.1002/jctb.619>
- Hafni, A. F. (2015). *Pengaruh Pengungkapan Sustainability Reporting Dan Intellectual Capital Terhadap Nilai Perusahaan Pada the Influence of Sustainability Reporting Disclosure and Intellectual*. 1–13.
- Hartawan, I. M. W., Werastuti, D. N. S., & Yuniarta, G. A. (2022). The Influence of Intellectual Capital and Sustainability Reporting on Company Value with Investment Opportunity Set as Moderating Variables. *International Journal of Social Science and Business*, 6(4), 512–518. <https://doi.org/10.23887/ijssb.v6i4.49019>
- Husnan, S. (2015). *Dasar-Dasar Teori Portofolio & Analisis Sekuritas* (5th ed.). UPP STIM YKPN.
- Keown, A. J. (2005). *Manajemen Keuangan Prinsip-Prinsip dan Aplikasi*. Jakarta: Pearson Education Inc.
- Najib, P., Syafitri, Y., & Hadya, R. (2022). Pengaruh Pengungkapan Sustainability Reporting Dan Intellectual Capital Terhadap Nilai Perusahaan (Studi Empiris Pada Perusahaan LQ-45 yang terdaftar di Bursa Efek Indonesia Periode 2016-2018). *Pareso Jurnal*, 4(3), 735–748.

- Pulic, A. (1998). *Measuring the Performance of Intellectual Potential (IP) in Knowledge Economy*.
<https://www.bib.irb.hr/35384>
- Putra, Y. P., & Subroto, T. A. (2022). Pengaruh Pengungkapan Sustainability Report Terhadap Kinerja Keuangan Perusahaan. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis*, 10(2), 60–71.
<https://doi.org/10.37676/ekombis.v10i2.2272>
- Randa, F., & Solon, S. A. (2012). Pengaruh Modal Intelektual Terhadap Nilai Perusahaan (Studi Empiris pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal Indonesia Sosial Teknologi*, 2(08), 1386–1402.
<https://doi.org/10.36418/jist.v2i8.208>
- Setyawati, E. J. (2022). Pengaruh Pengungkapan Sustainability Report Terhadap Nilai Perusahaan. *Ilmu Dan Riset Akuntansi*, 3(2), 1–9.
- Simarmata, R., & Subowo, S. (2016). Pengaruh Intellectual Capital Terhadap Kinerja Keuangan Dan Nilai Perusahaan Perbankan Indonesia. *Accounting Analysis Journal*, 5.
<https://api.semanticscholar.org/CorpusID:156899177>
- Simetris, S. A., & Darmawan, A. (2019). Pengaruh Diversifikasi, Leverage, dan Profitabilitas Terhadap Nilai Perusahaan (Studi pada Perusahaan industri Barang Konsumsi yang Terdaftar di Bursa Efek Indonesia Tahun 2013-2017). 74 No. 1.
<http://administrasibisnis.studentjournal.u-b.ac.id/index.php/jab/article/view/2943>
- Sulistiyowati, L. N. (2021). Kinerja Keuangan Sebagai Variabel Moderasi Antara Faktor Modal Intelektual Dengan Nilai Perusahaan Manufaktur. *Widya Cipta: Jurnal Sekretari Dan Manajemen*, 5(2), 90–99.
<https://doi.org/10.31294/widyacipta.v5i2.10135>
- Suwardjono. (2014). *Teori Akuntansi : Perekayasaan Pelaporan Keuangan Edisi Ketiga*. BPFE Yogyakarta.
- Triagustina, L., Sukarmanto, E., & Helliana. (2015). Pengaruh Return On Asset (ROA) Dan Return On Equity (ROE) Terhadap Nilai Perusahaan Pada Perusahaan Manufaktur Subsektor Makanan Dan Minuman Yang Terdaftar Di Bursa Efek Indonesia Periode 2010-2012. *Prosiding Akuntansi*, 28–34.
<http://karyailmiah.unisba.ac.id/index.php/akuntansi/article/view/1549>
- Ulum, I., Ghozali, I., & Chariri, A. (2008). Intellectual Capital Dan Kinerja Keuangan Perusahaan ; Suatu Analisis Dengan Pendekatan Partial Least Squares. *Simposium Nasional Akuntansi XI*, 19(19), 23–24.
- Wahongan, L. (2019). Effects of Financial Performance and Corporate Social Responsibility on Company Values: Case of Banks Listed on the Indonesia Stock Exchange. *Accountability*, 8(2), 75.
<https://doi.org/10.32400/ja.24758.8.2.2019.75-84>
- Widarjo, W. (2011). Pengaruh Modal Intelektual Dan Pengungkapan Modal Intelektual Pada Nilai Perusahaan Yang Melakukan Initial Public Offering. *Jurnal Akuntansi Dan Keuangan Indonesia*, 8(2), 157–170.
<https://doi.org/10.21002/jaki.2011.10>