

# INTELLECTUAL CAPITAL AND SUSTAINABILITY REPORT DISCLOSURE TOWARD COMPANY VALUES ANALYSIS

Case study of company listed in LQ-45 stock group for the period 2015 – 2017

Niken Savitri Primasari, SE.,MM.

Accounting Departement, Economic and Business Faculty  
University of Nahdlatul Ulama Surabaya, Indonesia  
Surabaya, East Java-Indonesia  
[niken@unusa.ac.id](mailto:niken@unusa.ac.id)

## Abstract

The purpose of this study is to determine the effect of Intellectual Capital and sustainability disclosure on firm value, for industries listed in LQ 45 period 2015-2017. Independent variable in this research were intellectual capital measured by VAIC<sup>TM</sup> and sustainability report disclosure measured by SRD. Dependent variable in this research was company's value measured by Tobin's Q with chung approximate methods.

By using purposive sampling method, the total amount of samples obtained in this research were 45 companies. The data were analyzed by using multiple linear regression method. The results of this research showed that intellectual capital has a positive and significant effect on company's value and sustainability report disclosure has significant effect on company's value.

**Keywords:** *intellectual capital, sustainability report disclosure, company's value*

## Introduction

Knowledge based business is one form of intangible assets, namely knowledge assets, such as ideas, information, creativity, and knowledge of human resources. Knowledge assets are better known as intellectual capital (Nikmah & Irsyaha, 2016). The transition to knowledge-based business has led to intellectual capital, particularly the efficiency of Intellectual Capital use has increased significantly (Ousama & Fatima, 2015).

Intellectual capital (IC) is the entire dimension of the company, namely relationships with customers, company workforce, and supporting procedures created with innovation, current knowledge modification, knowledge transfer, and sustainable learning that can ultimately increase the value of the company (Gozali & Hatane, 2014). Along with the increasing attention to intellectual capital (IC), an important issue arises regarding the difficulty of measuring and assessing the IC. This is the background (Pulic, 1998) proposes measurements to assess IC. IC measurement initiated by (Pulic, 1998) is called the VAIC<sup>TM</sup> method (Value Added Intellectual Coefficient).

The main component of VAIC<sup>TM</sup> is physical capital (VACA - Value Added Capital Employed), human capital (VAHU - Value Added Human Capital), and structural capital (STVA - Structural Capital Value Added) (Pulic, 1998). The VAIC<sup>TM</sup> method has attracted attention for the past 2 decades. Some researchers and practitioners have adopted the VAIC<sup>TM</sup> method as an IC measurement method. Although in the measurement, this method does not directly measure the IC of the company, because it only shows the efficiency of value added as a result of the company's IC capabilities.

For companies that have gone public, indicators of company value are reflected in the price of shares traded in the capital market. The higher the stock price, the higher the value of the company. The high value of the company is the desire of the owners of the company, because with high value shows the prosperity of shareholders is also high (Hermuningsih, 2013). According to (Utama & Mirhard, 2016), effective intellectual capital disclosure is in the sustainability report because stakeholders are common readers of the report.

By revealing intellectual capital in the sustainability report, it can provide positive signals to investors or potential investors for investment decisions because investors will prefer to invest in companies that have high intellectual capital (Wang, 2008). With so many investors investing in the company, it can increase the company's stock market price and automatically increase the value of the company. Therefore, the company must be more concerned about the sustainability report and parts of the IC (human capital, structural capital, and capital employed) because it can improve the company's performance (Utama & Mirhard, 2016). Based on the background described earlier, the hypotheses formulated in this thesis are,

### (1) Intellectual Capital Influence on Company Value

Resource based theory, companies will gain competitive advantage by utilizing their resources, including intellectual capital, both employees (human capital), physical assets (physical capital), and structural capital so that companies must realize how important management is intellectual capital owned (Ningrum, 2012). Companies that have high intellectual capital will be responded positively by investors by investing so that it

will have an impact on the increase in company value (Indrajaya, 2015). Based on several previous studies regarding intellectual capital and company value, the hypotheses in this study are as follows:  
Hypothesis 1 : Intellectual Capital have a positive effect on Company Value

(2) Effect of Sustainability Report Disclosure on Company Value

Based on the definition of intellectual capital, IC consists of 3 components, namely human capital, structural capital, and relational capital. Information about the IC components can be found at the annual report and sustainability report. The annual report shows the number of these components, while the sustainability report explains in detail the components of the IC (Utama & Mirhard, 2016). Research conducted by (Oliveira et al., 2010), (Cinquini et al., 2012), and (Utama & Mirhad, 2016) found that sustainability reports can be an effective medium for disclosing information related to intellectual capital owned by the company Based on the above description, the hypothesis that can be prepared is as follows:

Hypothesis 2 : Sustainability Report Disclosure have positive effect on Company Value

## Research methods

The type of data used in this study is secondary data. The sample used in this study is a go public company that listed on group LQ-45 of the Indonesia Stock Exchange during the period 2015 to 2017 with certain criteria. The sampling method that will be used is a purposive sampling method based on criteria, (1) the company that presents its annual report in www.idx.co.id during the 2015-2017 period. (2) Companies that do not experience bankruptcy and are delisted from the IDX within the period 2015-2017. (3) The company's annual report has complete data relating to research variables and financial reports which are presented in the form of rupiah.

This study uses intellectual capital variables and sustainability report disclosures as independent variables and firm value as the dependent variable. Independent variables are variables that cause or influence the dependent variable. In this study, the independent variables used in this study were intellectual capital and sustainability report disclosures.

Intellectual capital was measured by the Value Added Intellectual Coefficient (VAICTM) method developed by (Pulic, 1998) which was measured based on the value added created by the three components, namely Value Added Capital Employed (VACA), Value Added Human Capital (VAHU) and Structural Capital Value Added (STVA).

The first stage : Calculating Value Added (VA).

$$VA = OP + EC + D + A$$

Which are,

OP : Operating profit

EC : Employee cost

D : Depreciation

A : Amortisation

The second stage : Calculating Value Added Capital Employed

$$VACA = VA / CE$$

Which are,

VACA : Value Added Capital Employed

VA : Value Added

CE : Capital Employed : total aset

The third stage : Calculating Value Added Human Capital (VAHU).

$$VAHU = VA / HC$$

Which are,

VAHU : Value Added Human Capital

VA : Value Added

HC : Human Capital : (total salaries, bonus and wages)

The fourth stage : Calculating Structural Capital Value Added (STVA).

$$TVA = SC / VA$$

Which are,

STVA : Structural Capital Value Added

SC : Structural Capital (VA – HC)

VA : Value Added

The fourth stage : Calculating Value Added Intellectual Coefficient (VAICTM).

$$VAICTM = VACA + VAHU + STVA$$

VAICTM indicates the intellectual ability of companies that can also be considered as BPI (Business Performance Indicators). VAICTM is the sum of the three previous components, namely VACA, VAHU, and STVA (Ulum, 2009). Furthermore, the sustainability report disclosure as an independent variable. Sustainability report

provides information about ICs that can help companies to further add value creation processes (Utama & Mirhard, 2016). This study uses SRD proxy in measuring sustainability report disclosure because research related to intellectual capital disclosure in the sustainability report is still very limited so researchers choose to use proxies that have been used previously by (Oliveira et al., 2010) and also because this proxy can re-present all items from the IC that are in the sustainability report. The formulation of intellectual capital disclosure in the sustainability report is explained as follows:

$$SRD = \frac{\sum_{i=1}^m di}{m}$$

where 0 or 1, if,

di : 0 if the item is not disclosure

di : 1 if the item are disclosure

m : maximum number of items disclosed (88 items)

SRD : Sustainability Report Disclosure

Then for the dependent variable used is the value of the company. Company value is measured using Tobin's Q. Tobin's Q is a comparison between market value of equity plus debt with book market value plus debt. According to Suranta & Mas'ud (2003) in (Bemby et al., 2015), firm value is measured through Tobin's Q which is formulated as follows:

$$Q = \frac{EMV + D}{EBV + D}$$

Where,

Q : Company Value

EMV : Equity Market Valu

D : Book Value of Total Debt

EBV : Equity Book Value

In its use, Tobin's q has been modified. Tobin's q modifications by Chung and Pruitt (1994) have been used consistently because they are simplified in various game simulations. This version modification is statistically approximately close to Tobin's original q and produces an estimated 99.6% of the formulation the original used by Lindenberg & Ross (1981). The formula formulation is as follows:

$$Q = (MVS + D)/TA$$

Which,

MVS = Market value of all outstanding shares.

D = Debt.

TA = Firm's asset's.

Interpretation of Tobins score q <1 Describes that stocks are undervalued, stating that Management has failed to manage company assets, and the potential for investment growth is low. Tobin's q = 1 Describes that stocks are in an average condition. Management is stagnant in managing assets. Investment growth potential does not develop. Tobin's q > 1 Describes that stocks are overvalued. Management is successful in managing company assets.

## Research Results and Discussion

The results of descriptive statistical analysis show that all mean data have a higher level of value than the value of deviation. This implies that the input data has a normal level for the next statistical test.

Table 1. Descriptive Statistics Results

| Variables | N  | Minimum | Maximum | Mean | Standard Deviation |
|-----------|----|---------|---------|------|--------------------|
| VAIC      | 45 | 1.97    | 9.20    | 4.01 | 1.018              |
| SRD       | 45 | 0.23    | 0.57    | 0.48 | 0.087              |
| TBQ       | 45 | 0.48    | 2.57    | 1.07 | 0.728              |

Test the normality of the data, using the Kolmogorov-Smirnov (K-S) test. If the Kolmogorov-Smirnov test results show asymp values. Sig > 0.05, then the data is normally distributed and vice versa, if the value is asymp. Sig < 0.05, the data is not normally distributed. The results of the Kolmogorov-Smirnov (K-S) test show the asymp value. Sig > 0.05 that is equal to 0.132 which means that the data in this study are normally distributed.

Table 2. Result Normality Kolmogorov-Smirnov Test

| Indicators           | Uns_Residual |
|----------------------|--------------|
| N                    | 45           |
| Mean Parameters      | 0.000        |
| Deviiasi Parameters  | 0.318        |
| Kolmogorov Smirnov Z | 0.124        |
| Significant 2 tailed | 0.132        |

Testing heteroscedasticity in the regression model is done by the Glejser test. The glejser test is done by regressing the residual absolute value (abs\_res1) to the independent variable (Ghozali, 2013). If the SPSS output shows the Sig. > 0.05 or 5% there is no heteroscedasticity, and vice versa. The following are the results of heteroscedasticity tests using the Glejser test.

Table 3. Heteroscedasticity result with Glejser Test

| No | Variables | Standardized Coefficients | Significant model 1 |
|----|-----------|---------------------------|---------------------|
| 1  | Constant  | .                         | 0.792               |
| 2  | VAIC      | 0.219                     | 0.365               |
| 3  | SRD       | 0.098                     | 0.124               |
| 4  | TBQ       | 0.353                     | 0.567               |

The next residual test is to see whether the data is free or not from one observation to another, using autocorrelation detection with the Durbin-Watson test. Based on the results of the tests that have been carried out, the following are the results of the DW Test values.

Table 4. Autokorelasi Result Test with Uji Durbin Watson Test

| Model | N  | K | Error Estimate | dU    | Durbin Watson | 4-dU  | The explanation            |
|-------|----|---|----------------|-------|---------------|-------|----------------------------|
| 1     | 45 | 3 | 0.411          | 1.597 | 2.002         | 2.403 | Tidak terjadi autokorelasi |

The results of the calculation of the Variance Inflation Factor (VIF) value also show the same thing, namely the absence of a VIF value from an independent variable that has a VIF value of more than 10. The VIF value of each Intellectual Capital (VAIC) and Sustainability Report (SRD) variable is 1,123 and 1,057. Referring to the results of the calculation of Tolerance and VIF values it can be concluded that there is no multicollinearity between independent variables in the regression model.

Table 5. Multicollinearity Result with Collinearity Statistic Test

| Model | Collinearity Statistic |       | Explanation          |
|-------|------------------------|-------|----------------------|
|       | Tolerance              | VIF   |                      |
| VAIC  | 0.961                  | 1.123 | No multicollinearity |
| SRD   | 0.902                  | 1.057 | No multicollinearity |

Testing the first and second hypotheses using the formula of multiple linear regression analysis because it explains the influence of two independent variables together with one dependent variable. An explanation of the results of testing the hypothesis in this study are as follows:

**a) The Multiple Regression Analysis Result**

The results of the regression equation in this study can be seen from the table of test results of the coefficients as follows,

Table 6. Result of t Stats

| Model 1  | Unstandardized Coefficients |       | Standardized Coefficients | t-test | Significant Value | Explanation |
|----------|-----------------------------|-------|---------------------------|--------|-------------------|-------------|
|          | B                           | Error | Beta                      |        |                   |             |
| Constant | 0.039                       | 0.043 | .                         | 0.157  | 0.026             | Significant |
| VAIC     | 0.431                       | 1.123 | 0.891                     | 8.111  | 0.000             | Significant |
| SRD      | 1.221                       | 1.057 | 0.103                     | 1.327  | 0.047             | Significant |

The statistical test t gives an indication that VAIC and SRD (intellectual capital and sustainability report disclosure) as independent variables have a partial effect on the dependent variable, that is the value of the company measured by the Tobin's Q Chung Approximate method.

**b) Simultaneous Significance Test Results (Test Statistics F)**

Simultaneous significance test (statistical test F) is used to test whether the independent variables together (simultaneously) affect the dependent variable. To test the effect can be seen based on the significance value. The results of the F statistical test can be seen from the following ANOVA table,

Table 7. Result of Simultaneous Significant (F Test)

| Analysis   | Squares | Df | Mean Square | F Stat | Significant Value | Evidence             |
|------------|---------|----|-------------|--------|-------------------|----------------------|
| Regression | 12.314  | 2  | 6.157       | 4.026  | 0.000             | Simultaneously React |
| Residual   | 5.472   | 45 | 0.111       | .      |                   |                      |
| Total      | 19.479  | 47 | .           | .      |                   |                      |

Based on table 7, it can be seen that the F test results show a significance value of 0,000. The significance value is <0.05, which indicates that all variables are simultaneously influential on the dependent variable, which means that intellectual capital (VAIC) and sustainability report (SRD) disclosure simultaneously affect the firm value (TBQ). That is, any changes that occur in intellectual capital (VAIC) and sustainability report disclosure (SRD) simultaneously or together will affect the value of the company (TBQ).

**c) Discussion**

The first hypothesis proposed in this study is that intellectual capital has a positive effect on firm value. These results indicate that intellectual capital has a positive and significant influence on the value of the company or in other words the hypothesis (H1) is accepted. The results of this study have shown that effective and maximum management and use of intellectual capital has been proven to increase the value of the company measured in this study by Tobin's Q.

The results of this study are in line with resource-based theory which states that companies will gain competitive advantage by utilizing their resources, including intellectual capital, both employees (human capital), physical assets (physical capital), and structural capital so the company must realize how important the management of intellectual capital has (Ningrum, 2012). Companies that have high intellectual capital will be responded positively by investors by investing so that it will have an impact on increasing the value of the company (Indrajaya, 2015).

The second hypothesis proposed in this study is that the sustainability report disclosure has a positive effect on the value of the company. These results indicate that sustainability report disclosures are able to encourage an increase in company value by Tobin's Q Chung Approximate.

The results showed that the disclosure of intellectual capital in the sustainability report began to be considered to be seen as an addition to the company's performance information for investors in addition to the aspect of its profitability.

Disclosure of the economic dimension in the sustainability report will increase corporate transparency which has an impact on investor confidence. Research conducted by Safitri (2015) shows that sustainability report disclosure of economic performance has a positive and significant effect on the value of Tobin's Q. Wibowo and Faradiza (2014) stated that Tobin's Q describes the company's market value, which reflects the company's future benefits. From this statement, it is assumed that if the market value is high, the company's performance will be considered good in the eyes of investors.

**Conclusions and recommendations**

Based on the analysis and discussion of research results by testing the hypothesis using multiple linear regression analysis, it can be concluded as follows:

1. Intellectual capital proxies using VAIC<sup>TM</sup> has a positive and significant influence on the value of company's proxies using Tobin's Q. This shows that the greater the intellectual capital value of a company, the greater the value of the company from that company.
2. Sustainability disclosure proxy using SRD affects the value of the company proxy using Tobin's Q. This shows that sustainability report disclosures can encourage an increase in the value of the company. Sustainability report disclosure will increase company transparency which has an impact on investor confidence. Which describes the company's market value, by reflecting the company's future benefits. From this statement it can be assumed that if the market value is high, the company's performance will be considered good in the eyes of investors.

From the conclusions that have been described, this research is expected to contribute to the development of accounting science. In addition, this research is expected to provide additional information about factors that can influence the value of the company. Subsequent research can add to the research period so that the research time span is longer so as to produce more accurate research. The proxy used to measure the value of the company in this study only uses Tobin's Q. Subsequent research can use various other proxies, such as Price to Book Value (PBV) or Price Earnings Ratio (PER).

## References

- Gozali, A., & Hatane, E. (2014). Intellectual Capital Influence on Financial Performance and Company Value Especially in the Financial Industry and Mining Industry Listed on the Indonesia Stock Exchange in 2008-2012. *Business Accounting Review*, 2, 208–217.
- Hermuningsih, S. (2013). Influence of Profitability, Growth Opportunity, and Capital Structure on Company Value in Public Companies in Indonesia. *Bulletin of Monetary and Banking Economics*, 127-148.
- Nikmah, & Irsyahma, A. (2016). Intellectual Capital, Firm Value, And Financial Performance. Malaysia Indonesia International Conference on Economic, Management, and Accounting (MIICEMA), 24–25.
- Ningrum, N. R. (2012). Analysis of Intellectual Capital and Corporate Governance Influences on Financial Performance. Thesis of the Faculty of Economics and Business, Diponegoro University.
- Oliveira, L., Rodrigues, L. L., & Craig, R. (2010). Intellectual Capital Reporting In Sustainability Reports. *Journal of Intellectual Capital*, 11 (4), 575-594. <https://doi.org/10.1108/14691931011085696>
- Ousama, A. A., & Fatima, A. H. (2015). Intellectual Capital and Financial Performance of Islamic Banks. *International Journal of Learning and Intellectual Capital*, 12 (1).
- Pulic, A. (1998). Measuring the Performance of Intellectual Potential in Knowledge Economy. In *The 2nd McMaster World Congress on Measuring and Managing Intellectual Capital by The Austrian Team for Intellectual Potential* (pp. 1–20).
- Safitri, Dian Anggraini. 2015. Sustainability Report on Financial and Market Performance. *Journal of Accounting Science & Research* Vol. 4 No. 4. Indonesian College of Economics (STIESIA) Surabaya.
- Utama, A. A. G. S., & Mirhard, R. R. (2016). The Influence Of Sustainability Report Disclosure As Moderating Variables Towards The Impact Of Intellectual Capital On Company's Performance. *International Journal of Economics and Financial Issues*, 6 (3), 1262–1269.
- Wibowo, Imam and Sekar Akrom Faradiza. 2014. Impact of Sustainability Report Disclosure on Financial Performance and Corporate Market Performance. XVII Accounting National Symposium Mataram, Lombok.