

Determinants of Intellectual Capital Disclosure by using Monetary and Non-monetary Variables

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Abstract: Purpose of this research is to analyse of determinants of intellectual capital disclosure by using monetary and non monetary variables. Profitability, leverage, firms's size and firm's age are determinants of intellectual capital disclosure. There were 12 companies which selected as a sample. An index of disclosure of intellectual capital was constructed to analyse intellectual capital disclosure in the sustainability reports for 2015 – 2017. This report was published on the website of Indonesia Stock Exchange. Object of this research is only focus on banking firms. This reasearch was developed four hypothesis about association between profitability, leverage, firm's size, firm's age and intellectual capital disclosure. This research highlight the determinants of intellectual capital disclosure by using intellectual capital index from Oliviera's research. The results showed that there was association between profitability, firm's age and intellectual capital disclosure. But leverage and firm size showed that there was not association with intellectual capital disclosure.

1 INTRODUCTION

Intellectual capital is one of the intangible assets in the company. Information regarding intangible asset is regulated in PSAK No. 19 (Revised 2009). Disclosures about intangible assets are presented by each company in the annual report. However, the PSAK does not regulate what items must be disclosed in the annual report regarding intangible assets. Disclosure of intellectual capital is one of the disclosures in the annual report. This disclosure is voluntary. Although this disclosure is voluntary, many companies make this disclosure in their annual reports. Voluntary disclosure especially intellectual capital is an added value for the company. Because in this annual report, especially the disclosure of intellectual capital provides information about the performance of human resources owned by the company. So, if a company has good financial performance, this is because one of them is due to good human resource management.

Knowledge-based industries are industries that utilize the innovations they create to compete with other industries by providing their own value for the

products or services produced by the industry. Especially in the industrial era 4.0 technology is very high needed in the company. Therefore, to absorb the technology that is developing now, it requires high intellectual capital. Banking companies are one company that must use high technology. Because banking companies must improve the system and strategy with the aim that the public can prove and feel that technology makes it easy for transaction. Technology also helps companies to maintain customer security and trust. Skimming is one of the crimes in the world of banking. This is also the reason for banks for making improvements in innovation and technology. To be able to innovate and adopt sophisticated technology, high intellectual capital must be needed.

This study aims to determine the factors that influence the disclosure of intellectual capital. Disclosure of intellectual capital in this study uses research conducted by (Oliveira, Rodrigues and Craig, 2010). According to (Oliveira, Rodrigues and Craig, 2010), there are 88 items of intellectual capital that should be disclosed. Meanwhile, according to (Garanina and Dumay, 2017) based on Guthrie et.al

stated that there are 79 items of intellectual capital that should be disclosed. The difference between the research conducted by (Oliveira, Rodrigues and Craig, 2010) and (Garanina and Dumay, 2017) lies in human capital, strategic capital and process capital. There are several additional items in these three elements. Most previous studies such as to (Garanina and Dumay, 2017); (Sudibyo and Basuki, 2017); (Kamath, 2016); (Al-hamadeen & Swaidan, 2014) used items less than 88 items, started from 40 items to 79 items.

In disclosure of intellectual capital is influenced by several factors. Many previous researchers such as (Garanina and Dumay, 2017); (Sudibyo and Basuki, 2017); (Kamath, 2016); (Eddine et al., 2015); (Al-hamadeen & Swaidan, 2014) who have conducted research on factors that influence disclosure intellectual capital. As for the factors that have been studied such as company age, company size, auditor type, managerial ownership, profitability, leverage and others. However, the results of the study showed insistency in each study. The factors examined in this study are profitability and leverage that represent the monetary variable. Firm size and age are factors that represent non-monetary variables.

2 THEORETICAL FRAMEWORK

This research is using three theories that can explained about intellectual capital disclosure. It comprises of stakeholder theory, signaling theory and legitimating theory. Stakeholder theory is consisting of shareholders, employees, customers, competitors, lenders, government and society and environmental activist groups, media and consumer advocates (Kamath, 2016) as companies that grow in size and characteristics, management is starting to give strong hope to stakeholders (Kamath, 2016). This explains why intellectual capital is expected to be expressed more in large companies (Kamath, 2016). In the legitimacy theory emphasizes that companies are in a continuous process to get the approval of community norms about their functions (Kamath, 2016). The signaling of the theory shows that high-quality companies must show a signal to the market that the company provides high profits so that it will reduce the cost of capital (Kamath, 2016).

Many researchers conducted research on factors that influence intellectual capital disclosures such as (Seng, Kumarasinghe and Pandey, 2018); (Kamath, 2016); (Eddine et al., 2015); (Al-hamadeen & Swaidan, 2014); (Ibikunle, Oba and Nwufo, 2013). Several factors influence intellectual capital

disclosure such as profitability, leverage, company size, company age, ownership structure and others. However, in this study the factors used in intellectual capital disclosure are profitability, leverage, firm size and company age.

According to Meek et. Al (1995); Marston and Shrives (1995) and El Gazzar and Fornaro (2003) in (Ibikunle, Oba and Nwufo, 2013) show that profitable companies are expected to reveal more information about their performance. Hanifa and Cooke (2002) in (Ibikunle, Oba and Nwufo, 2013) found a positive and significant relationship between company profitability and intellectual capital disclosure. However, this is different from the research conducted (Sudibyo and Basuki, 2017); (Kateb, 2014); (Rahim, Atan and Kamaluddin, 2011); (Rahim, Atan and Kamaluddin, 2011); (Taliyang, Latif, & Mustafa, 2011) say that profitability does not affect intellectual capital disclosure. Based on the above, the hypothesis that can be built is

H1: Profitability affects intellectual capital disclosure.

Companies with a high degree of leverage tend to make wider disclosures (Company, Jensen and Meckling, 1974). Because stakeholders such as creditors need more information when the creditor will provide a loan to a company. This research was supported by (Kateb, 2014). Research (Bagchi, Joshi and Salleh, 2015) shows that firm size and leverage have no effect on intellectual capital disclosure.

H2: Leverage affects intellectual capital disclosure

Firm size and type of industry tend to be the main determinants of intellectual capital disclosure. Larger companies tend to be more progressive and innovative because they have financial resources (Kamath, 2016). Larger companies will express more intellectuals because they think managers of larger companies are more likely to realize the possible benefits of more disclosure (Ibikunle, Oba and Nwufo, 2013). However, it is different from research conducted by (Bagchi, Joshi and Salleh, 2015) which shows that company size and leverage do not or have little impact on the 114 companies studied (Kamath, 2016). Based on this, the hypothesis in this study are:

H3: Firm size influences intellectual capital disclosure

Company age is one of the factors considered in influencing intellectual capital disclosure. Because if a company can last long and is able to compete in a business then this indicates that the company is able to manage resources that are owned well. The ability to manage resources owned is supported by intellectual capital owned by the company.

Therefore, the longer the company maintains its existence, the more intellectual capital is disclosed in the annual report. This research is supported by research (Taliyang, S. M., Latif, R. A., dan Mustafa, 2011) which states that the age of the company influences intellectual capital disclosure.

H4: The age of the company influences intellectual capital disclosure.

3 RESEARCH METHOD

3.1 Sample

The sample in this study is the annual report of banking companies listed on the Indonesia Stock Exchange for the period of 2015 - 2017. There was 12 banking companies as a sample. Sampling technique uses purposive sampling. It means this sampling is using some criterias. There are :

1. Banking companies listed on the Indonesia stock exchange for the period 2015-2017
2. Banking companies were reporting annual reports for the period 2015-2017
3. Banking companies were earning profits during the period 2015-2017
4. An annual report that provides all the information needed for research data for the period 2015-2017

3.2 Measurements of Variables

In this study consisted of dependent variables and independent variables. The dependent variable in this study is intellectual capital disclosure. The measurement of intellectual capital disclosure is using a disclosure index. There are 88 items used for intellectual capital disclosure. The items disclosed consist of strategy (21 items); Processes (11 items); Innovation, research and development (8 items); Technology (5 items); Customers (14 items); Human Capital (29 items). Researchers used items revealed from the study (Oliveira, Rodrigues and Craig, 2010). The formula used to calculate the index revealed:

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

Where $di = 0$ or 1

$di = 0$ if there is no disclosure item in annual report

$di = 1$ if there is disclosure item in annual report

M = total number of items should be disclosed in annual report (88 items)

The independent variable used in this study consists of four variables. There were two monetary variables. That was profitability and leverage. Proxy of profitability used Return on Asset (ROA). Leverage used Debt to Equity Ratio (DER/DR). Meanwhile, non-monetary variables were firm size and firm's age.

The formula used for each independent variables were:

$$1. ROA = \frac{\text{Income before tax}}{\text{Total assets}}$$

$$2. DER = \frac{\text{Total Debts}}{\text{Total Equity}}$$

$$3. \text{Firm Size} = \text{Ln Total assets}$$

$$4. \text{Firm's Age} = \text{Firm's established until research period}$$

3.3 Model Specification

This study used multiple linear regression analysis to see the relationship between intellectual capital disclosure and profitability, leverage, firm size and firm's age. The form of the relationship can be seen below:

$$ICDI = a + b_1ROA + b_2DER + b_3FS + b_4FA + e$$

Where ICDI = Intellectual Capital Disclosure Index

ROA = Return on Asset

DER = Debt to Equity Ratio

FS = Firm Size

FA = Firm's Age

a to b_4 are coefficient

e = error

4 ANALYSIS

Descriptive statistics provide a description or description of a data that is seen from the average value (mean), standard deviation, maximum and minimum (Ghozali, 2016). The mean is used to estimate the magnitude of the population average estimated from the sample. The maximum-minimum is used to see the minimum and maximum values of the population. Based on descriptive statistical analysis, the company description is as follows:

Table 1 : Descriptive Statistic

	N	Min	Max	Mean	Std Deviation
ICD	36	.1932	.8636	.476325	.2547277
ROA	36	.0030	4.0000	1.334639	1.2070886
DER	36	3.4353	14.7484	6.506355	2.6276514
FS	36	27.3438	34.1953	31.808436	1.4295375
FA	36	23	71	47.50	14.799

Before conducting multiple linear regression analysis, this study used the classic assumption test so that the processed sample data really represents the overall population. The normality test is done to test whether the regression model has a normal distribution or not. The normality test in this study used the Kolmogorov Smirnov Test. The table below shows the normality test performed

Tabel 2: Normality test

N	36
Kolmogorov Smirnov	.636
Asymp.Sig (2 tailed)	.813

Based on the table above, we can see that this study is normally distributed. This can be seen from the significance values above 0.813 (> 0.05).

To see how far the influence of one independent variable individually in explaining the variance of the dependent variable can be seen in the table below

Tabel 3: Regresi

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.212	1.027		2.153	.039
ROA	-.126	.035	-.596	-3.644	.001
DER	-.007	.015	-.072	-.456	.652
FS	-.061	.036	-.341	-1.686	.102
FA	.009	.004	.499	2.353	.025

Based on the table above, we can see that the ROA and Firm's age variables affect intellectual capital disclosure. DER and Firm Size variables do not affect intellectual capital disclosure. From the table above can also be taken multiple linear regression analysis as follows;

$$ICDI = 2.212 - .126ROA - .007DER - .061FS + .009FA + e$$

To measure how far the ability of the model to explain the variance of the dependent variable, we use the coefficient of determination. A value that approaches one means that the independent variables provide almost all the information needed to predict the variance of the dependent variable.

Tabel 4: Determination Coefficient

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.571 ^a	.326	.239	.2222634

The table above indicates the ability of multiple regression equations to show the level of explanation of the model towards the dependent variable. The magnitude of the determination coefficient is 0.239 or 23.9%, which means that the ability of the independent variable in this case is the return on assets variable, the debt to equity ratio, firm size and firm age simultaneously has an influence on the intellectual capital disclosure variable of 23.9%. While 76.1% is explained by other variables besides the independent variables above.

5 RESULTS

Based on the results of the t test that has been done, it can be seen that return on assets has a negative effect on intellectual capital disclosure. This means that the higher the value of return on assets, the company will be less in doing intellectual capital disclosure. It may be caused if the company's performance has been good in this case is the profit obtained by the company, the company does not need to do a lot of disclosure in the annual report. Where we know that disclosure of annual reports is only voluntary. However, this is different from the research conducted by (Rahim, Atan and Kamaluddin, 2011) saying that profitability does not affect intellectual capital disclosure (Kateb, 2014).

For leverage variables does not give effect to intellectual capital disclosure. This means that many or few intellectual capital disclosures are not determined by leverage. This is in line with the research conducted by (Rahim, Atan and Kamaluddin, 2011);(Eddine et al., 2015).

For company size variables as measured by total assets, it shows that firm size does not affect intellectual capital disclosure. Intellectual capital disclosure is not in the annual report does not depend on whether the company is large or small. This research is in line with (Bagchi, Joshi and Salleh, 2015) and contradicts the research conducted by (Ibikunle, Oba and Nwufu, 2013)

While for the age variable the company has an influence on intellectual capital disclosure. Companies that have long been established will make more disclosures in their annual reports. This is in line with the research conducted by (Taliyng, S. M., Latif, R. A., dan Mustafa, 2011).

6 CONCLUSIONS

Based on multiple linear regression tests that have been done, it can be concluded that for financial variables, namely profitability and non-financial variables, namely the age of the company influence the intellectual capital disclosure in banking companies in Indonesia. While the leverage and size of the company does not influence intellectual capital disclosure in banking companies in Indonesia. While the ability of the independent variable in this case is the return on assets variable, the debt to equity ratio, firm size and firm age simultaneously has an influence on the intellectual capital disclosure variable of 23.9%. While 76.1% is explained by other variables besides the independent variables above.

This study has limitations in the form of periods, objects and variables used to determine the factors that influence intellectual capital disclosure. Therefore, further research is expected to extend the research period to be used. In this study, only one object of research is a banking company. Future research is expected to be able to use several objects or do comparative objects. Many factors have not been tested in this study to determine the factors that influence intellectual capital disclosure.

REFERENCES

- Al-hamadeen & Swaidan, M. (2014) 'Content and Determinants of Intellectual Capital Disclosure: Evidence from Annual Reports of the Jordanian Industrial Public Listed Companies', *International Journal of Business and Social Science*, 5(8), pp. 165–175.
- Bagchi, D., Joshi, P. L. and Salleh, N. M. Z. N. (2015) 'The extent of disclosure on implicit capital and firm's characteristics: Malaysian experience', *International Journal of Learning and Intellectual Capital*, 12(2), p. 170. doi: 10.1504/IJLIC.2015.068986.
- Company, P., Jensen, C. and Meckling, H. (1974) 'THEORY OF THE FIRM: MANAGERIAL BEHAVIOR, AGENCY COSTS AND OWNERSHIP STRUCTURE I. Introduction and summary In this paper WC draw on recent progress in the theory of (1) property rights, firm. In addition to tying together elements of the theory of e', 3(1976), pp. 305–360. doi: 10.1016/0304-405X(76)90026-X.
- Eddine, C. O. H. et al. (2015) 'The determinants of intellectual capital disclosure: A meta-analysis review', *Journal of Asia Business Studies*, 9(3), pp. 232–250. doi: 10.1108/JABS-03-2015-0028.
- Garanina, T. and Dumay, J. (2017) 'Forward-Looking Intellectual Capital Disclosure in IPOs: Implications for Intellectual Capital and Integrated Reporting', *Journal of Intellectual Capital*, 18(1), pp. 128–148.
- Ghozali, I. (2016) 'Aplikasi Analisis Multivariate Dengan Program IBM dan SPSS 21', in *Aplikasi Analisis Multivariate dengan Pogram iIBM SPSS 21*. doi: 10.1016/j.tsf.2010.09.040.
- Ibikunle, J., Oba, V. C. and Nwufu, C. (2013) 'Determinants of Intellectual Capital Disclosures in Nigeria', *Acta Universitatis Danubius. Economica*, 9(6), pp. 195–206.
- Kamath, B. (2016) 'Article information', *Journal of Financial Reporting and Accounting*, 15(3), pp. 367–391. doi: <http://dx.doi.org/10.1108/MRR-09-2015-0216>.
- Kateb, I. (2014) 'The determinants of intellectual capital disclosure: Evidence from French stock exchange', 4(2), pp. 628–646.
- Oliveira, L., Rodrigues, L. L. and Craig, R. (2010) 'Intellectual capital reporting in sustainability reports', *Journal of Intellectual Capital*, 11(4), pp. 575–594. doi: 10.1108/14691931011085696.
- Rahim, A., Atan, R. and Kamaluddin, A. (2011) 'Intellectual Capital Reporting in Malaysian

- Technology Industry', *Asian Journal of Accounting and Governance*, 2(1), pp. 51–59. doi: 10.17576/ajag-2011-2-6541.
- Seng, D., Kumarasinghe, S. and Pandey, R. (2018) 'Intellectual capital disclosure in private sector listed companies in India', *Knowledge and Process Management*, 25(1), pp. 41–53. doi: 10.1002/kpm.1560.
- Sudibyo, A. A. and Basuki, B. (2017) 'Intellectual capital disclosure determinants and its effects on the market capitalization: evidence from Indonesian listed companies', *SHS Web of Conferences*, 34, p. 07001. doi: 10.1051/shsconf/20173407001.
- Taliyang, S. M., Latif, R. A., dan Mustafa, N. H. (2011) 'The determinants of intellectual capital disclosure among malaysian listed companies', *International Journal of Management and Marketing Research*, 4(3), pp. 25–33.

