THE EFFECT OF INTELLECTUAL CAPITAL ON COMPANY'S FINANCIAL PERFORMANCE

(EMPIRICAL STUDY ON HIGH TECH INDUSTRIES AND LOW TECH INDUSTRIES REGISTERED ON THE IDX)

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Abstract
In the digital age today, high-tech companies are currently experiencing very rapid growth. This is inseparable from the very tight and fast competition in industry 4.0. High-tech companies (high tech) in general have advantages over companies that do not use high technology, namely intellectual capital. This study aims to analyze the influence of intellectual capital on the financial performance of companies that use low technology and companies that use high technology.

The population in this study were low technology and high technology manufacturing companies in Indonesia, the sampling method used was purposive sampling. The independent variable is intellectual capital, the control variable is company size and leverage, and the dependent variable is financial performance. The analytical method used is multiple regression analysis.

The results of data analysis show that intellectual capital (STVA) has a significant effect on the financial performance of high technology manufacturing companies, but does not significantly influence the financial performance of low technology companies. The size of the company has a significant effect on the financial performance of manufacturing companies both low technology and high technology. Leverage has a significant effect on the financial performance of manufacturing companies, both low technology and high technology. There are significant differences in financial performance between high technology and low technology manufacturing companies.

Keywords: intellectual capital, high technology, low technology, financial performance

INTRODUCTION
In 2015 global stock market conditions were declining. But a number of technology companies are able to score stunning achievements. The value of their shares continues to skyrocket as if not affected by the slowing economic situation. Companies that were able to create a stock index increased rapidly throughout 2015 were Amazon with 115% increase in shares, Face book 34%, Netflix 145%, Alphabet 40%, Microsoft 20%, Nvidia 65%, Go Daddy 30%, Adobe 30%, Sales force 33%, (detik.net, December 2015).

Industrial developments that are directly related to technology have been growing in recent years. In Indonesia also experienced very rapid development. The movement of Microsoft shares throughout 2015, opened at a price of 46.66 US dollars and closed at a price of 55.48 US dollars. That means giving an increase of 18 percent. Several companies engaged in the development of internet-based technology also posted an attractive increase in stock prices, such as Netflix, which experienced a rise above 100 percent in a year. Amazon too. Face book has increased above 30% and Nvidia has risen above 60%. In 2015, technology sector companies donated 3 companies to a list of 10 companies with the largest capitalization in the world, namely Apple, Google and Microsoft. However, please also note that many well-known technology and internet-based companies in the world still do not record a profit such as Twitter, or Linkedin which is also quite well-known in Indonesia; only Facebook has managed to record large profits compared to these companies (Kompas, April 2016).

In Indonesia, the telecommunications company, PT Telekomunikasi Indonesia (Persero) Tbk., Distributed dividends of Rp13.55 trillion to shareholders, or 70% of the company's total net income in 2016. In 2016, Telkom recorded a consolidated revenue of Rp.116.33 trillion or grow 13.5%. Meanwhile, net profit increased 24.9% to Rp 19.35 trillion and EBITDA grew 15.7% to Rp59.50 trillion. In 2016, Telkom claimed to be able to record performance growth with achievement above the industry average. Performance growth was shown by the data, internet and information technology services business which recorded 31.5%. (Bisnis.com, April 2017)

Based on the facts above shows that high-tech companies are experiencing very fast growth in the digital era today. This is inseparable from the very tight and fast competition in industry 4.0. High-tech companies (high tech) in general have advantages over companies that do not use high technology, namely intellectual capital.

Intellectual capital is a topic that has only recently developed in recent years. In Indonesia, the phenomenon of intellectual capital (IC) began to develop, especially after the emergence of the Statement of Financial Accounting Standards (PSAK) No. 19 (revised 2000) concerning intangible assets. According to PSAK No. 19, intangible assets are non-monetary assets that can be identified and do not have a physical form and are owned for use in producing or delivering goods or services, leased to other parties, or for administrative purposes (Indonesian Accountants Association, 2007).

Contrary to the increasing recognition of intellectual capital in encouraging corporate value and competitive advantage, the right measurement of the company's intellectual capital cannot be determined. For example, Pulic (1998) does not directly measure the intellectual capital of a company, but proposes a measure to assess the efficiency of value added as a result of the company's intellectual ability (Value Added Intellectual Coefficient - VAIC ™). The main components of VAIC ™ can be seen from company resources, namely VACE, capital capital, value added human capital, and structural capital (value added structural capital - VASC). According to Pulic (1998), the main goal in knowledge-based economics is to create value added, while being able to create value added requires the right size of physical capital (i.e. financial funds) and intellectual potential (represented by employees with all potential and abilities inherent in them). Furthermore Pulic (1998) states that VAIC ™ shows how these two resources (physical capital and intellectual potential) have been efficiently utilized by the

company.

Recognition of intellectual capital which is the driving force of corporate value and competitive advantage is increasing; however, proper measurement of intellectual capital is still being sought and developed. The difficulty of measuring Intellectual Capital directly is, then Pulic (1998) proposes indirect measurement of IC with a measure to assess the efficiency of added value as a result of the company's intellectual ability (Value Added Intellectual Coefficient - VAIC ™). Wang (2011) uses the Pulic model (VAIC ™) to test the relationship between IC and financial performance, where the results show that IC positively influences the performance of the company. While the research conducted by Gan and Saleh (2008) on the Malaysia Stock Exchange shows that IC (VAIC ™) is positively related to company performance and market value.

In Indonesia, IC research has been carried out by Ulum (2008) which has proven that: (1) IC (VAIC ™) influences the company's financial performance, (2) IC (VAIC ™) influences the company's financial performance in the future ((3) ROGIG does not affect the company's financial performance in the future. In contrast to the above studies, the research of Mosavi et al (2012) shows that the results are inversely proportional, namely there is no positive influence between IC and the company's financial performance. Based on research that shows the contradictory results, it is interesting to review it by conducting research on Intellectual Capital. This study seeks to replicate the research conducted by Mosavi et al (2012) with some modifications and adjustments to conditions in Indonesia. Furthermore, this study aims to prove empirically the effect of the influence of Intellectual Capital on financial performance.The selection of financial performance, growth and market performance as the dependent variable because it is believed based on the research that has been done that intellectual capital has an impact on these three variables, besides that research on these three variables simultaneously is still rarely done in Indonesia. This study specifically also examines the effect of intellectual capital on high technology-based manufacturing industries and companies that do not use high technology, because it is believed that the application of technology to manufacturing and service companies will have different results in the use of intellectual capital. For manufacturing companies based on high technology, they need better intellectual capital than companies that are based on low technology.Marr and Schiuma (2004) in the IC definition cited by Ulum, (2008) explain that IC is a group of knowledge assets that are organizational attributes and contribute significantly to increasing the position of competition by adding value to stakeholders.

The theoretical foundation used in explaining the relationship between IC performance (VAIC ™) and the company's financial performance is stakeholder theory and resource based theory (Belkaoui, 2003).Stakeholder Theory explains stakeholder relationships that cover all forms of relationships between the company and all its stakeholders. Freeman (1984) defines Stakeholders as groups or individuals as well as those that can influence or be influenced by organizational efforts in realizing their goals. Based on stakeholder theory, organizational management is expected to carry out activities that are considered important by stakeholders and report back those activities to stakeholders.In the context of explaining the relationship between VAIC ™ and financial performance, stakeholder theory is seen from both fields, both in the field of ethics (moral) and managerial fields. The field of ethics argues that all stakeholders have the right to be

treated fairly by organizations, and managers must manage the organization to benefit all stakeholders (Deegan, 2004). The managerial field of stakeholder theory argues that the power of stakeholders to influence corporate management must be seen as a function of the level of stakeholder control over the resources needed by the company (Watts and Zimmerman, 1986).The basic assumption of a resource-based theory view is that organizations can succeed if they achieve and maintain competitive advantage (Barney, 1991). This competitive advantage is achieved when a company can implement a value creation strategy that cannot be emulated by its competitors and there is no substitute for it (Barney, 1991). Social exchange and efficient use of resources are the driving forces for establishing competitive advantage and improving performance (Barney, 1991). Jakson and Schuler, 2005 stated that if this is related to organizations, there are three types of resources, namely physical resources (factories, technology and equipment, geographical location), human resources (experience and knowledge of employees), and organizational (structure , a system for planning, monitoring and controlling activities, social relations within the organization and between organizations and the external environment).Resource Dependence Theory is a thought that develops in strategic management theory and company competitive advantage which believes that a company will achieve excellence if it has superior resources. Gudono (2014) states that this theory stems from ideas developed by Ulrich and Barney in 1984. Resource Dependence Theory holds that the control (control) of outsiders over the resources needed to limit management discretion, can frustrate the achievement of organizational goals and even threaten existence of organizations (Scott, 1998). Therefore the continuity of the organization depends on the ability of the management to maximize the power of the organization, especially getting resources.In the context of explaining the influence of Intellectual Capital on financial performance and corporate market performance, Ulrich and Barney (1984) explain that in the view of Resource-Based Theory companies gain competitive advantage and good financial performance by owning, controlling and utilizing strategic assets that important. These strategic assets include tangible assets and intangible assets.The company's financial performance is an overall condition of the company's finances during a certain period / period of time. Most of the research results, such as the Mosavi (2012) study show that Intellectual / IC Capital has a positive effect on the company's financial performance. Companies that are able to manage their intellectual resources are believed to be able to create value added and are able to create competitive advantages by innovating, researching and developing that will lead to improving the company's financial performance. This is in line with the concept of Resource-Based Theory. From the Stakeholder Theory's point of view it is stated that corporate managers will try to obtain value added (value added) which will then be redistributed to all stakeholders. Therefore, stakeholders will act as controls in the context of the use and management of company resources including intellectual resources. In relation to the component of intellectual capital which consists of physical capital, human capital, and structural capital and because the sample studied is a manufacturing industry sector consisting of various types of industries, the hypothesis proposed is as follows:

H1: Intellectual Capital as measured by Value Added Physical Capital (VACA) has a positive effect on the company's financial performance

H2: Intellectual capital as measured by Value Added Human Capital (VAHU) has a positive effect on the company's financial performance

H3: Intellectual capital measured by Value Added Structural Capital (STVA) has a positive effect on the company's financial performance

The results of the study Pulic (2000) found that the contribution of intellectual capital of each industry is different. In the drilling and mining industry, value added shows a slightly higher value compared to expenditures for employees with a relatively insignificant structural capital component. While in the pharmaceutical and software industries the biggest contribution in contributing value added is structural capital. Pulic opinion is reinforced by evidence from Tan et al. (2007) who found that IC contribution to company performance is different for each industry. Based on the argument above the hypothesis proposed is as follows:

H4: Intellectual Capital performance is different for each industry.

RESEARCH METHOD

Population and Samples

The sample selection in this study used a purposive sampling method. The sample was based on predetermined criteria. The criteria specified in the sampling are as follows

1) High Technology companies are industries that operate in the fields of pharmaceuticals, computers, electronics, optical products, and water spacecraft.
2) Low Technology Company is an industry engaged in the fields of Food, Beverages, Tobacco, Textiles, Clothing, Leather products, Wood products, Paper products, Printing, Furniture, and other manufacturing companies excluding the medical and dental equipment industries.
3) Not delisting (exiting) from the Indonesia Stock Exchange for 5 consecutive years, namely 2011, 2012, 2013, 2014, 2015 and 2016.
4) The company listed on the Indonesia Stock Exchange before 2011.
5) Non-suspended companies from trading during 2011, 2012, 2013, 2014, 2015 and 2016.
6) Companies have positive profits
7) Each annual report has complete information to meet the interests of measuring each variable.

Based on these criteria samples can be obtained as follows:

Table1
Sampling Criteria

No	Criteria	Number of Company Samples	
		High Tech	Low Tech
1	Manufacturing company	148	
2	Delisting company from IDX	8	

3	Incomplete data	4	
4	Negative Profit	47	
5	Low Tech and High Tech Non Category Companies	65	
6	Company sample	9	15

Based on the calculation results above the number of samples for high tech companies as many as 9 companies and manufacturing companies with the low tech category as many as 15 companies.

Operational Definitions and Variable Measurements

    a. Independent Variables

    The Independent Intellectual Capital variable referred to in this study is the Intellectual Capital performance which is the value creation obtained from the management of Intellectual Capital. Where the performance of Intellectual Capital here is measured based on the value added created by physical capital (VACA), human capital (VAHU), and structural capital (STVA). The combination of the three added values is symbolized by the name VAIC ™ developed by Pulic (1998; 1999; 2000)

    b. Control Variables

    The control variables used in this study are company size (SIZE) and company leverage (DER).

    c. Dependent Variables

    The first dependent variable in this study is financial performance (FP), which is measured by Return on Assets (ROA). Return in Asset is a measurement of the company's overall ability to generate profits with the total amount of assets available in the company.

    d. Measurement of Variables

    The measurement of the independent variables in this study is by Value Added Intellectual Coefficient (VAICTM), while the dependent variable in this study is measured by the accounting ratio

Table 2
Measurement of Research Variables

No	Variabel/Indikator	Rumus	Sumber
1	*Intellectual Capital*		

	VACA (*Value Added Capital Employed*)	VA/CE	LK & ICMD
	VAHU (*Value Added Human Capital*)	VA/HC	LK & ICMD
	STVA *(Structural Capital Value Added)*	SC/VA	LK & ICMD
	VAIC^{TM} calculation formulations are as follows: a. *Output* (OUT) : Total sales and other income b. *Input* (IN) : Expenses and costs (other than employee expenses) c. *Value Added* (VA) : Difference between Output and Input $\qquad$ VA = OUT – IN d. *Human Capital* (HC) : Employee expense e. *Capital Employed* (CE) : Available funds (equity, profit clean) $\qquad$ *Structural Capital* (SC) : the difference between added and human valuecapital f. SC = VA – HC Sumber: Pulic (1998; 1999; 2000)		
2	Control Variables SIZE : Ln Total Assets DER : Debt / Own Capital		
3	*financial performance*		
	Return on Asset (ROA)	$\dfrac{Net\ profit}{TotalAsset}$	FS& ICMD
	Keterangan: FS = Financial statements ICMD = *Indonesian Capital Market Directory*		

e. Data Analysis Method

Testing the hypothesis in this study using regression analysis. Regression analysis is basically a study of the dependence of the dependent variable with one or more independent variables with the objectives of estimating and or predicting population averages or the average value of the known independent variables. To test the influence of independent variables on the dependent variable individually is done by looking at the statistical value of t, while to

examine the effect of independent variables on the dependent variable simultaneously carried out by looking at the value of F statistics.

The multiple linear regression equations are as follows:

$$ROA = a + b_1VACA + b_2VAHU + b_3STVA + b_4SIZE + b_5LEV + e$$

Information:

ROA   =   Company performance

a   =   Constants

b   =   Regression Coefficient

VACA   =   *Value Added Physical Capital*

VAHU   =   *Value Added Human Capital*

STVA   =   *Value Added Structural Capital*

SIZE   =   Company Size

LEV   =   Leverage

e   =   Error

RESULTS AND DISCUSSION

Analysis Results

Description of Statistics

The results of descriptive statistical analysis for each company category can be seen in Table 3 below.

Table3
Description of Manufacturing Company Statistics

Jenis Perusahaan	Variabel	Minimum	Maksimum	Mean	Stddeviasi
Low Tech	VACA	0,18	6,20	1,67	0,96
	VAHU	2,98	858,38	89,09	159,9
	STVA	0,66	1,00	0,94	0,07
	VAIC^{TM}	4,65	8,60	91,71	160,00
	SIZE	12,66	18,34	15,00	1,61
	LEV	0,15	3,03	1,14	0,69

	ROA	0,00	0,67	0,09	0,13
High Tech	VACA	0,58	6,38	1,58	1,50
	VAHU	1,84	47,12	12,94	13,33
	STVA	0,46	0,98	0,84	0,12
	VAIC^{TM}	2,94	53,23	15,36	1,95
	SIZE	11,68	16,54	14,19	1,27
	LEV	0,18	1,47	0,44	0,35
	ROA	0,02	0,40	0,15	0,09

Source: Data processed

Based on the average results of VACA, VAHU and STVA values in High Tech Industry companies, the average value of VAICTM is 15.36 which means that manufacturing companies with the use of high technology are able to create added value of Rp. 15.36 for every rupiah invested. This value is smaller than the value of VAICTM manufacturing companies whose use of technology is low (Low Technology) which is equal to 91.71, which means that manufacturing companies with the use of low technology are able to create added value of Rp. 91.71 for every rupiah invested. Based on the value of the indicator, it shows that VAHU has the greatest value, this means that the biggest contribution to value added is from employees of both high technology and low technology companies.

In high technology companies, the average company size of 14.49 shows that the assets of high technology companies are lower than the assets of low technology companies, which is 15.00. In high technology companies, average leverage (LEV) of 0.44 indicates that the proportion of corporate capital is more funded by self-capital. In low technology companies the average leverage of 1.14 indicates that the proportion of company capital is more financed by third party debt or creditors.

In high technology companies the average return on assets (ROA) of 0.15 can be interpreted that the company is able to generate profits of Rp 0.15 for every one rupiah of assets invested. Whereas in the low technology company the average return on assets (ROA) of 0.09 can be interpreted that the company is able to generate profits of Rp 0.09 for every one rupiah of assets invested.

Test of Classical Assumptions
Based on the classic assumption test (normality, autocorrelation, multicollinearity, heteroscedasticity), it is found that in the model used there has been no classical assumption deviation, meaning the regression model in the study can be used as a basis for analysis.

Results of Multiple Regressions at Low Technology Companies
Based on testing data, the results of multiple regressions to examine the effect of intellectual

capital (VACA, VAHU and STVA) and control variables (SIZE and LEV) on the financial performance of Low Technology category manufacturing companies in Indonesia are shown in Table 4 below:

Table 4
Low Technology Company Regression Test Results

Variable	Regression Coefficient	tcount	Significance
Constants	0,086		
VACA	0,004	0,563	0,575
VAHU	-0,000052	-1,242	0,218
STVA	-0,069	-0,738	0,463
SIZE	0,008	1,973	0,052
LEV	-0,064	-5,895	0,000
F count	11,736		
F Prob	0,000		
R^2	0,452		
Adjusted R^2	0,414		

Source: Data processed

a) Regression Equations
   Based on Table 4, the following multiple linear regression equations are obtained:
   ROA = 0,086+ 0,004VACA -0,000052VAHU– 0,069STVA +0,008SIZE- 0,064LEV+ e

b) Coefficient of Determination (R2)
   The calculation results for the value of R2 with the help of the SPSS program, in the multiple regression analysis obtained the adjusted coefficient of determination or adj R2 of 0.414. This means that 41.4% of the variation in changes in financial performance is explained by variations in VACA, VAHU, STVA, SIZE and LEV. While the remaining 58.6% is explained by other factors not observed.

c) Test F
   The F test is to test the accuracy of the regression model, whether VACA, VAHU, STVA, SIZE and LEV are appropriate in measuring financial performance. Based on the processed data that the value of Fcount (11,736) with a significance of 0,000, because the significance value is less than 0.05, it can be concluded that there are significant influences from VACA, VAHU, STVA, SIZE and LEV together on financial performance, this also shows that the independent variable is correct in measuring the dependent variable so that the regression model is fit.

d) Hypothesis Test (t Test)
   Based on the results of t-test calculations it can be concluded that the variables that influence the financial performance of low technology companies are variable size companies at the 10% significance level and leverage at the 1% significance level. While the variables of intellectual capital (VACA, VAHU and STVA) have no significant effect on the financial performance of low technology companies.

Results of Multiple Regression at Low Technology Companies

Based on testing data, the results of multiple regression to examine the effect of intellectual capital (VACA, VAHU and STVA) and control variables (SIZE and LEV) on the financial performance of High Technology category manufacturing companies in Indonesia are shown in Table 5 below:

Table5
High Technology Company Regression Test Results

Variable	Regression Coefficient	t count	Significance
Constants	0,216		
VACA	-0,013	-0,968	0,338
VAHU	0,002	1,433	0,158
STVA	0,487	3,817	0,000
SIZE	-0,029	-3,246	0,002
LEV	-0,128	-2,561	0,014
F count	21,932		
F Prob	0,000		
R^2	0,696		
Adjusted R^2	0,664		

Source: Data processed

a) Regression Equations
   Based on table 5, the following multiple linear regression equations are obtained:
   ROA = 0,216- 0,013VACA +0,002VAHU+ 0,487STVA -0,029SIZE- 0,128LEV+ e

b) Coefficient of Determination (R2)
   The calculation results for the value of R2 with the help of the SPSS program, in the multiple regression analysis obtained the adjusted coefficient of determination or adj R2 of 0.664. This means that 66.4% of the variation in changes in financial performance is explained by variations in VACA, VAHU, STVA, SIZE and LEV. While the remaining 33.6% is explained by other factors not observed.

c) Test F
   The F test is to test the accuracy of the regression model, whether VACA, VAHU, STVA, SIZE and LEV are appropriate in measuring financial performance. Based on the processed data that the value of Fcount (21,932) with a significance of 0,000, because the significance value is less than 0.05, it can be concluded that there are significant influences from VACA, VAHU, STVA, SIZE and LEV together on financial performance, this also shows that the independent variable is correct in measuring the dependent variable so that the regression model is fit.

d) Hypothesis Test (t Test)

e) Based on the results of t-test calculations it can be concluded that the variables that influence the financial performance of high technology companies are the STVA variable at the 1% significance level, the size of the company at the 1% significance level and

leverage at the 5% significance level. While the variables of intellectual capital (VACA and VAHU) did not significantly influence the financial performance of high technology companies.

Differences in Financial Performance

The Mann-Whitney test results show that the probability value for the ROA variable is 0.001 <0.05. This shows that there are significant differences in financial performance for low technology and high technology manufacturing companies.

Discussion

The analysis shows that the intellectual capital component (IC) has no significant effect on the company's financial performance in low technology manufacturing companies, this shows that intellectual capital does not provide very important added value in improving financial performance for manufacturing companies that do not use high technology. The results of the analysis on high-tech manufacturing companies show that only value added structur capital (STVA) has a significant effect on financial performance. Structural Capital is the ability of an organization or company to fulfill the company's routine processes and structures that support employees' efforts to produce optimal intellectual performance and overall business performance. This shows that high technology companies have succeeded in utilizing structural capital optimally in generating profits for the company. The size of the company shows the amount of assets owned by the company that can be used to generate profits for the company. The results of the analysis of low technology manufacturing companies show that the size of the company has a positive and significant effect on financial performance at the 10% significance level. This means that the greater the assets owned by the company can influence the improvement of the company's financial performance. The results of the analysis on high technology companies show that the size of the company has a negative effect on financial performance, negative effects can be caused by the management of assets by the company has not been optimal. The results of the analysis of the financial performance of manufacturing companies with low technology and high technology show that there are significant differences in financial performance for high technology and low technology manufacturing companies. Based on the average value of ROA, it shows that manufacturing companies that use high technology (0.15) and low technology (0.12) differ significantly. This shows that high technology companies have the ability to generate profits or company financial performance better than companies that are low technology.

CONCLUSION AND SUGGESTION

Based on the results of the analysis in this study it can be concluded as follows:

Intellectual capital (STVA) has a significant effect on the financial performance of high technology manufacturing companies, but has no significant effect on the financial performance of low technology companies. The size of the company has a significant effect on the financial performance of manufacturing companies both low technology and high technology.

Leverage has a significant effect on the financial performance of manufacturing Companies both low technology and high technology.

There are significant differences in financial performance between high technology and low technology manufacturing companies

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