The Significance Key of Intellectual Capital To Increase Financial Performance, Firm's Growth, and Market Value

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Abstract : *The purpose of this study is to examine the contact between intellectual capital and financial performance, firm's growth, and market value also on high-tech industry, low-tech industry, and telecommunication companies. Another contribution of this study is to investigate is there any intellectual capital differences between each company's sectors. Value Added Intellectual capital (VAICTM) method by Pulic (1998, 1999, 2000, 2003) is used to verify the effect of intellectual capital on financial performance, firm's growth, and market value. By using purposive sampling method in 5 years period from 2010 to 2014, obtained 45 sample of the high-tech industry, 185 sample of low-tech industry, and 25 sample of telecommunication companies. Partial Least Square (PLS) and one-way ANOVA are used in this study to investigate the empirical causalities of each variable. The results of the analysis indicate that intellectual capital has a positive effect on financial performance. The results also revealed that there are intellectual capital differences in each company's sectors. The results extend the understanding of the role of intellectual capital in creating corporate value and building sustainable competitive advantages for companies in emerging economies, where different technological advancements may bring different implications for the valuation of intellectual capital.*

Keywords: *Intellectual Capital, Financial Performance, Firm's Growth, Market Value, High-Tech Industry, Low-Tech Industry*

Intisari: *Penelitian ini bertujuan untuk menguji hubungan antara modal intelektual dan kinerja keuangan, pertumbuhan perusahaan, dan nilai pasar juga pada industri teknologi tinggi, industri berteknologi rendah, dan perusahaan telekomunikasi. Kontribusi lain dari penelitian ini adalah untuk menyelidiki apakah ada perbedaan modal intelektual antara masing-masing sektor perusahaan. Nilai Tambah Modal intelektual (VAICTM) metode oleh Pulic (1998, 1999, 2000, 2003) digunakan untuk memverifikasi pengaruh modal intelektual terhadap kinerja keuangan, pertumbuhan perusahaan, dan nilai pasar. Dengan menggunakan metode purposive sampling dalam periode 5 tahun dari 2010 hingga 2014, diperoleh 45 sampel industri teknologi tinggi, 185 sampel industri berteknologi rendah, dan 25 sampel perusahaan telekomunikasi. Partial Least Square (PLS) dan ANOVA satu arah digunakan dalam penelitian ini untuk menyelidiki penyebab empiris dari masing-masing variabel. Hasil analisis menunjukkan bahwa modal intelektual memiliki efek positif terhadap kinerja keuangan. Hasilnya juga mengungkapkan bahwa ada perbedaan modal intelektual di*

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masing-masing sektor perusahaan. Hasilnya memperluas pemahaman tentang peran modal intelektual dalam menciptakan nilai perusahaan dan membangun keunggulan kompetitif yang berkelanjutan bagi perusahaan di negara berkembang, di mana kemajuan teknologi yang berbeda dapat membawa implikasi yang berbeda untuk penilaian modal intelektual.

Kata kunci: *Modal Intelektual, Kinerja Keuangan, Pertumbuhan Perusahaan, Nilai Pasar, Industri Berteknologi Tinggi, Industri Berteknologi Rendah*

1. Introduction

The continuously developed science and technology always give impacts to the companies. Each company must *survive* among many similar emerged companies, and even each company has to try to be the most superior among the others. Being superior in this case could be superior in product and other competitive advantages. The primary target of the most superior company would be the achievement in economic orientation of the company, which could be measured by company profits.

This condition is consistent with the concept of *intellectual capital*, where business organizations focused increasingly on the importance of *knowledge assets* as a form of intangible assets. Edvinsson and Malone (1997) are the researchers who have first discussed IC (*Intellectual Capital*), which divided the two elements, IC Human Capital and Structural Capital. Edvinsson and Malone (1997) defined *Intellectual Capital* as a part of *Intangible Assets*.

Pulic etc. (1998, 2004) developed a new method of IC (*Intellectual Capital*) measurement at Research Center for IC in Austria. The VAIC method developed by Pulic (1998, 1999, 2000, 2003), was designed to provide information about the efficiency of the additional values of the tangible and intangible assets owned by the company. The elements which have formed the IC (*Intellectual Capital*) included VACA (*Value Added of Capital Employed*), VAHU (*Value Added of Human Capital*), and STVA (*Structural Capital Value Added*). According to Pulic (1998), the primary goal in a knowledge-based economy is to create an additional value of the company, while it needed the right size to create *Physical Capital* and *Intellectual Potential* (*Potential Capital*). VACA is a measure for *Physical Capital*, while VAHU and

STVA are the measures of *Potential Capital*. All of VACA, VAHU, and STVA are internal resources of the company.

Bontis (1998) has also expressed his opinion about the IC component that was consisted of three: *Human Capital* (HC), *Structural Capital* (SC), and *Relational Capital* (RC) or *Customer Capital* (CC). HC and SC are the internal resources of the company, while the RC/CC is a source of power derived from an external company. Bontis (1998) defined IC as a collection or combination of *Internal* and *External Knowledge* owned by the company. Pulic (1999) has critiqued the IC component expressed by Bontis (1998). Pulic (1999) has given criticism that the *Relational Capital* (RC) or *Customer Capital* (CC) was not an IC component for RC/CC reflecting the company reputation. The company reputation is formed in the external environment (such as trust), it is a side effect of the used IC wisely in the company. It is the underlying reason of Pulic (1999) that the RC/CC is not part of the IC.

Both reasons were still under debate among several researchers who have researched IC until now so that it made the researchers interested in reviewing the IC components. Referring to Edvinsson and Malone (1997), the researcher who first discussed the IC, they have defined *Intellectual Capital* as a part of *Intangible Assets*. Therefore, there were some items of *Intangible Assets* that did not logically contribute as IC parts of a company. One of them was the reputation of the company (RC/CC), that might be a side effect of the used IC wisely in the company according to Pulic (1999). Based on this, the researchers have tried to use the IC components developed by Pulic (1998, 1999, 2000, 2003).

They were already performed several studies on the effect of *intellectual capital* to the company. Mr. Wang's research (2011) has used the model Pulic (VAIC™) to study the relationship between *intellectual capital* and financial performance, which the result showed that *intellectual capital* had the positive effect on firm performance. Whereas the research conducted by Gan and Saleh (2008) on Bursa Malaysia Securities showed that *intellectual capital* (VAIC™) was associated positively with the company performance and the market value.

The research conducted by Muhammad (2009) in the Malaysian financial sector has also proved a similar thing that the *intellectual capital* had positive and significant effects to the company performance as measured by profitability and *Return on Assets* (ROA). It was conducted for several times the research on *intellectual capital* in Indonesia, one of them was performed by Ulum *et al.* (2008), which proved that: first, *intellectual capital* (VAICTM) affected the financial performance of the company; second, *intellectual capital* (VAICTM) effected on the future of financial performance of the company; and the third, ROGIG did not affect the future of the financial performance of the company.

In contrast to the mentioned studies, the research of Mosavi *et al.* (2012) and Kuryanto (2008) showed the inversed results, i.e., there was not any positive influence between *intellectual capital* and financial performance of the company. Based on the study result that was contradictive, it was interesting to be reexamined by researching *intellectual capital*. This research bas ded on the study undertaken by Solikhah *et al.* (2010). The differences of this study with the Sholikhah research (2010) were: **first**, this study puts into the entire cost of employees to calculate VAHU because the previous studies included only salaries and wages for the reason of IC concept considered the cost expenditures incurred by the company that was viewed as an investment of actual company with the hope of obtaining the additional value for the company in the future. **Second**, this study used to sample data of companies of the *high-tech industry*, *low-tech industry*, and services, especially telecommunications for all categories of the companies must have a company in managing different resources such as activities of R & D costs.

The previous research was performed only on manufacture companies; **third**, the indicators of firm *size* were added to the variable of the *financial performance*. *Size* indicator was added as a control variable to the financial performance of big and small companies because it was worried that the company size also influenced the financial performance of the company. **Fourth**, this study examined also specifically the effect of intellectual capital to the industrial manufacturing based on *high technology* and the companies that did not use high technology (*low tech*), and service companies,

because we believed that the technology application in manufacturing and service companies would be different results in the use of intellectual capital.

2. Theoretical Framework and Hypothesis Development

Pulic (1998; 1999; 2000, 2003) did not measure directly the company intellectual capital, but he has filed a measure to assess the efficiency of the additional values as a result of the company intellectual ability (*Value Added Intellectual Coefficient – VAICTM*). The main components of VAICTM could be viewed on the company resources: *physical capital (value added capital employed – VACE)*, *human capital (value-added human capital – VAHC)*, and *structural capital (structural capital value added – VASC)*.

Value Added of Capital Employed (VACA) is an indicator of the VAICTM used to measure the additional values created by the use of a unit of physical capital. Pulic (1998) said that any use of a unit of CE (*Capital Employed*) had generated higher profits than other company, it meant that the company was better in using its CE. Better use of CE is a part of the company *intellectual capital (IC)*. *Value Added Human Capital (VAHU)* showed how many *values added (VA)* that could be produced with the spent funds on the workers. The relationship between VA with *human capital (HC)* indicated the ability to create value in the company.

Structural Capital Value Added (STVA) showed the *structural capital (SC)* contribution in creating values. STVA measured the number of the required SC to produce 1 rupiah of VA and was an indication of the SC success in creating values. SC was not an independent measure as HC in the process of creating values. It meant that the higher the contribution of HC in value creation, the smaller the contribution of SC in this regard. Furthermore, Pulic stated that the SC was VA minus HC.

The companies that could manage their intellectual resources is believed to be able in creating *value-added* which leads to making *competitive advantage* by conducting innovation, research, and development with the purpose of improving the financial performance of the company. The company financial performance is a display or a wholly financial state of the company during a specified period. It is

similar to the concept of *Resource-Based Theory* that is created by the idea of Wernerfelt in 1984 and developed by Jay B. Barney in 1986. In the context of explaining the influence of *intellectual capital* on the financial performance, the growth and market value of the company, Wernerfelt explained that according to the *Resource-Based Theory*, a company would gain a competitive advantage and an excellent financial performance by possessing, controlling, and using the essential strategic assets. The strategic assets include tangible and intangible assets (Barney Clark, 2007).

The similar thing was stated by Belkaoui (2003), according to *Resource-Based Theory* the company resources are critical drivers of competitive advantage and firm performance. Also, it was said that in achieving the sustainable profits a company must be able to control the tangible and intangible assets. According to Gan and Saleh (2008), the definition of *intellectual capital* is intellectual matter, such as good knowledge, information, intellectual property, an experience that could be used to produce the wealth of the company.

Whereas from the viewpoint of *Stakeholder Theory* it is stated that the corporate managers would attempt to get *value added* which would then be redistributed to all *stakeholders*. This theory maintained the relationship of the *stakeholders* including all forms of the relationship between the company and all *stakeholders*. According to Fontaine *et al.* (2006), the *stakeholder* approach was appeared firstly and was developed by Freeman in 1984. Based on *stakeholder* theory, organizational management is expected to perform the essential activities by *stakeholders* and for reporting back on those activities to the *stakeholders*. In context to explain the relationship between VAIC™ and *financial performance, firm's growth, and market value*, the *stakeholder* theory is viewed by the two fields, both in ethics (moral) and managerial fields.

Ethics field argues that all *stakeholders* have rights to be treated fairly by the organization, and managers should manage an organization for the benefit of all *stakeholders* (Deegan, 2004). Whereas managerial fields found that the *stakeholder's* strength in influencing corporate management should be regarded as a function of the

stakeholder control level over the resources needed by the organization (Ulum *et al.*, 2008). The researcher used *Stakeholder Theory* in this study because in theory it is expected that the manager would be able to manage the use of IC wisely and consider the stakeholder's interests so that it could improve *financial performance*, *growth*, and *market performance* of the company.

Most of the study results, such as research Wang (2011), Muhammad (2009), and Mosavi *et al.* (2012) and Chen *et al.* (2005) showed that the *Intellectual capital* affected positively to the financial performance. Similarly, the research of Solikhah *et al.* (2010) which proved empirically that the *intellectual capital* affected positively to the *firm's performance*. Financial performance is often considered in determining the investor choices to invest. A company with the capability to leverage its intellectual resources optimally could be seen on its financial performance. It meant that the capital invested by the investor could be used optimally so that it could increase the company revenue.

The study results conducted by Mosavi *et al.* (2012) provided empirical evidence that *intellectual capital* could influence the growth (in this case measured by sales growth). Although in the study sales growth is an indicator of the company performance. Then, the study conducted by Solikhah *et al.* (2010) has also shown that *intellectual capital* was proved significantly to the company growth. The companies with optimal utilization of *intellectual capital* will create value-added regularly and continuously so that the company will be able to grow and survive.

Based on the study results of Mosavi *et al.* (2012), it has noted that the investors were likely to pay a higher rate on the shares of companies with the intellectual resources compared to the companies with low intellectual resources. The paid price of the investor reflected the company value. *Market value* was happened due to the inclusion of the concept of intellectual capital that was the main factors and could increase the company value. The previous study that was also conducted by Chen *et al.* (2005) and Mosavi *et al.* (2012) noted that intellectual capital had a positive effect on the market value. Along with the development of knowledge-based industries, the investors would not only focus on short-term interests to improve the financial return.

Also, the investors would also give more votes to the companies with high intellectual resources.

The empirical studies of Pulic (2000) found that it was different the *intellectual capital* contribution to each industry. In the industries of drilling and mining, *value-added* showed a slightly higher value than the expenditure for employees with the relatively insignificant components of structural capital. Whereas in the pharmaceutical industry, the most *significant* contribution in providing *value-added* was structural capital. Pulic opinion was supported by the evidence of Tan *et al.* (2007) who found that the *intellectual capital* contribution to the company performance was different for each industry. The research of Solikhah *et al.* (2010) also provided empirical evidence that the contribution of intellectual capital to the company was different for each industry.

Figure 1
The framework of Research Model

Based on the theories and previous studies, several hypotheses could be proposed such as follows:

- H₁: *Intellectual capital* has a positive effect on the Financial Performance.
- H₂: *Intellectual capital* has a positive effect on the Firms Growth.
- H₃: *Intellectual capital* has a positive effect on the Market Value.
- H₄: The *Intellectual capital* performance is different for each company sector (*High-Tech Industry*, *Low-Tech Industry*, and Telecommunications Services Company).

3. Research Method

3.1 Population and Sample

The population in this study consisted of the manufacturing and telecommunications services companies in Indonesia. The samples were several manufacturing companies and telecommunication services companies that have made *go public* in Indonesia Stock Exchange (BEI) during 2010, 2011, 2012, 2013, and 2014. The selection of manufacturing sector as a sample was referred to the research of Solikhah *et al.* (2010), except that this study examined specifically the manufacturing companies classified as *high tech* and *low-tech industries*. Previously, the research of Gan and Saleh (2008) performed a study on manufacturing companies that implemented the ICT (*Information and Communication Technology*) development, so that it tried to retest the similar samples that were grounded in how intense the kind of research and development by cost R & D companies. Every manufacturing company needs undoubtedly the activities of R & D, especially for manufacturing companies of high-tech. Therefore, this study divides manufacturing companies into *high-tech* and *low-tech industries* based on *Short-Term Business Statistics* (STS, 2013) of the EU-27's *industrial growth*.

The service companies that would be used as samples came from the telecommunications services companies with the consideration that the field of telecommunications services companies has high activities of R & D in supporting business continuity.

The samples selection in this study used a method of *purposive sampling*. The research samples were based on the determined criteria such as the followings:

1. Representing industries that included in *high-tech industry*, *low-tech industry*, and the telecommunications services company.
2. Not delisting (exit) from the Indonesia Stock Exchange for five years respectively: 2010, 2011, 2012, 2013, and 2014.
3. The company has performed *listing* at Indonesia Stock Exchange before 2010.
4. The company is not suspended from trading in 2010, 2011, 2012, 2013, and 2014.
5. Each annual report has the completeness of information to meet the interests of measuring each variable.

3.2 Variable Measurement

3.2.1. Independent Variables: Intellectual Capital

The performance of *intellectual capital* is value creation obtained for *intellectual capital* management. The performance of *intellectual capital* here is measured by *value added* created by *physical capital* (VACA), *human capital* (VAHU), and *structural capital* (STVA). The combination of the three *value added* is symbolized by the name of VAICTTM that is developed by Pulic (1998; 1999; 2000) with the following measurements:

$$VACA = VA/CE$$

$$VAHU = VA/HC$$

$$STVA = SC/VA$$

Note:

Value Added (VA): The difference between *Output* and *Input*

$$VA = OUT - IN$$

Output (OUT): Total sales and other revenue

Input (IN): Costs and expenses (other than personnel expenses)

Human Capital (HC): Personnel costs

Capital Employed (CE): Available funds (equity, net income)

Structural Capital (SC): the difference between *value added* and *human capital*

$$SC = VA - HC$$

3.2.2. Dependent Variables:

Financial Performance (FP)

The first dependent variable in this research is *financial performance* (FP), then measured by the indicators of *Current Ratio* (CR), *Debt to Equity Ratio* (DER), *Assets Turnover* (ATO), *Return on Investment* (ROI), *Return on Equity* (ROE), and *Company Size* (SIZE).

$$\text{CR} = \frac{\text{current assets}}{\text{current liabilities}}$$

$$\text{DER} = \frac{\text{total debt}}{\text{shareholders equity}}$$

$$\text{ATO} = \frac{\text{Sales}}{\text{total assets}}$$

$$\text{ROI} = \frac{\text{Net earning}}{\text{Total Assets}}$$

$$\text{ROE} = \frac{\text{Net Earning}}{\text{shareholders equity}}$$

$$\text{SIZE} = \text{Ln Total Asset}$$

Firm's Growth (GR)

The variable of company growth is proxied by the two indicators: *Earning Growth* (EG) and *Asset Growth* (AG).

$$\text{EG} = \frac{\text{earning of year}_t}{\text{earning of year}_{t-1}} - 1 \times 100\%$$

$$\text{AG} = \frac{\text{asset}_t}{\text{asset}_{t-1}} - 1 \times 100\%$$

Firms' Market Value (MV)

The variable of *firms' market value* (MV) is proxied by *Price to Book Value ratio* (PBV) and *Price to Earnings Ratio* (PER).

$$\text{PBV} = \frac{\text{Market Price}}{\text{Book value per share}}$$

$$PER = \frac{\text{Stock Price}}{\text{Earning per share}}$$

3.3. Method of Data Analysis

The used methods of data analysis in this research included descriptive statistical analysis and *one-way ANOVA* using SPSS V.21. Also, this research used a measurement of test model (*Outer Model*) and test of structural model (*Inner Model*) using WarpPLS 3.0. The selection of the PLS method was based on the consideration that in this study all of the variables in the model were latent variables formed with formative indicators. PLS was a suitable technical choice because of its small sample size and *normally attribute variable*.

Descriptive statistics were used to determine the value of the maximum, minimum, average, and standard deviation of each variable (Ghozali, 2012: 19). Stevens (2013) stated that the purpose of the *one-way ANOVA* test was to determine whether the average value of the dependent variable was different or not. Based on Stevens (2009), Montgomery (2013), and also Ghozali (2013: 71), decision-making on this analysis used multiple stages, *Test of Homogeneity Variance* to test if a variable had a same *variance*, *Test of between-subject effects* that would indicate the different performance of *Intellectual capital* for each company sector, *Post Hoc Test* that would determine which variables that contributed to make a difference (Stevens, 2009: 151), and *Homogeneous Subset* that would determine the differences or similar in the average value of the variables.

Testing with PLS was conducted to evaluate H1, H2, and H3 by using the entire samples based on Jogiyanto (2011: 82). Test of measurement model used to validate the built research model. In this study, it could not be conducted the reliability test because each formative indicator in a latent variable were assumed to be correlated (independent), so that the reliability value could not be fixed (Jogiyanto, 2011: 93). Then, a test of the structural model (*Inner Model*) was performed to predict the causal relationships among variables or test of the hypothesis. The *output model* is the most significant output results in the decision-making test with PLS. The *output model* would provide the resumed information about the research model, and the value of

testing results of *R squared value*, the value of *path coefficient* (value of coefficient β), and *p-value* in the form of picture researching model.

4. Results and Discussion

4.1. Empirical Results

The tabulation results from sample selection of the overall company population and the used consideration could be tabulated in Table 1.

Table 1
Sample Distribution Company

No.	Description	Total			
		High-tech Industry	Low-tech Industry	Telecommunication Service	Integration
1	Number of companies	11	47	6	64
2	<i>Not delisting</i> (exit) on Indonesia Stock Exchange for five years respectively: 2010, 2011, 2012, 2013, and 2014.	0	0	0	64
3	The company has performed <i>listing</i> at Indonesia Stock Exchange before 2010.	(1)	(5)	0	(6)
4	The company is not suspended from trading in 2010, 2011, 2012, 2013, and 2014.	0	0	(1)	(1)
5	Each annual report has the completeness of information to meet the interests of measuring each variable.	(1)	(5)	0	(6)
Total		9	37	5	51
Total in Five Years		45	185	25	255

Hypothesis Testing used PLS (*Partial Least Square*) such as follows:

1. Outer Model Testing

After it was conducted *outer model* testing, it was known that not all indicators met the eligibility assumption so that some indicators have been removed. Similarly, the *outer model* testing was performed on each sample of the company.

2. Inner Model Testing

Before conducting *Inner Model* testing, the researchers first saw the *goodness of fit* of the proposed model. According to Sholihin (2013: 61), the *output of general result* would show the part of *model fit indices* and *P values* by the results of the three indicators of *fit*: *average path coefficient* (APC), *average R-squared* (ARS), and *average variance inflation factor* (AVIF). This study was conducted to evaluate among the latent variables (*strictly confirmatory*) so that the model indicator of *fit* would become less critical. This research would still provide the test results to support the analysis, which is presented in Table 2 that showed a summary of *general output*. It indicated that the performed testing model would be qualified for the *goodness of fit*.

After the *goodness of fit* has been qualified, the Table 2 proved that the IC had a positive influence on the FP with *p-value* <0.01 and $\beta = 0.53$. R^2 of 0.28 indicated that the variable of *intellectual capital* was able to explain 28% variable of *financial performance*, while other factors outside the research model explained the remaining 72%. The increased *Intellectual capital* would affect the also increased *financial performance*, with the effect of 0.53 ($\beta = 0.53$). *P-value* of 0.24 indicated that *intellectual capital* (IC) had not any effect on the *firm's growth* (GR). Beta values showed 0.11, and R^2 value showed 0.01. Based on these results, it could be known that the IC was not able to explain the variable of GR because *R square* showed very little value, which was only 1%. It was proved that the IC did not affect to *market value* with a *p-value* of 0.11 and R^2 of 0.01. Beta value also showed the smallest value among other things, that was only 0.08.

Table 2
Summary of *Output General Result*

	High-tech Industry		Low-tech Industry		Company of Telecommunication Service		Integration	
	Model Fit Indices	p-value	Model Fit Indices	p-value	Model Fit Indices	p-value	Model Fit Indices	p-value

APC	0.526	<0.001	0.334	<0.001	0.660	<0.001	0.239	<0.001
ARS	0.324	0.006	0.141	0.248	0.449	0.015	0.100	0.021
AVIF	1.000	< 5	1.000	< 5	1.000	< 5	1.000	< 5
Note	Values of APC, ARS, and AVIF have qualified to the <i>goodness of fit</i>		Values of APC and AVIF have qualified to the <i>goodness of fit</i>		Values of APC, ARS, and AVIF have qualified to the <i>goodness of fit</i>		Values of APC, ARS, and AVIF have qualified to the <i>goodness of fit</i>	

Testing of *the inner model* also performed on each sample of companies. The variable of *intellectual capital* always produces a *p-value* that is significant to the variable of *Financial Performance*, either in the type of *high-tech industry* companies, *low-tech industry* companies, and the telecommunications services companies and the integration of <0.001; 0,013; <0.001; and <0.001. Whereas the influence of *intellectual capital* variable to the variables of *Firm's Growth* and *Market Value* still shows the inconsistent results. The impact of *intellectual capital* to the *firm's growth* and *market value* was partial, only on a specific type of the company.

3. One Way ANOVA Testing

SPSS output of *one way ANOVA* showed that there were differences in *intellectual capital* (VACA and STVA) among types of the companies. The value of the *adjusted R²* of 0.058 meant that the variability of company types could explain VACA variability by 5.8%. The value of the *adjusted R²* also showed that the variability of the company types was able to explain the STVA variability of 15.2%. Whereas the indicator of VAHU was proved to be similar among company types with the *adjusted R²* that also showed the value of 0.000, it meant that the influence of the company against VAHU was minimal.

4.2 Discussion

4.2.1. Effect of Intellectual Capital on Corporate Financial Performance (Financial Performance)

This study has proved that the IC effected positively to the *financial performance* so that it was accepted the first hypothesis (H1). It means that the higher the value of

intellectual capital the higher the value of the *financial performance* of the company. It applies to the companies with *high-tech industry*, *low-tech industry*, and telecommunications services (not affected by other factors).

This finding supports empirically the *stakeholder theory* in which the stakeholders will play a role in the management of intellectual resources of the company to create a *value-added* and *competitive advantage*. A company with the capability to leverage its intellectual resources optimally could be seen on its financial performance. These study results have also reinforced the *resource-based theory*, that meant that the capital invested by the investor could be used optimally so that it could increase the company *revenue*. The study results are consistent with the research conducted by Mr. Wang (2011) about the *listed companies in Taiwan Economic Journal Database* and Baroroh (2013) who has researched banking company in Indonesia that stated that *intellectual capital* was proved to have a significant and positive effect on the financial performance of the company.

4.2.2. *Effect of Intellectual Capital on Company Growth (Firm's Growth)*

Based on the test results, it was obtained that IC did not affect the company growth, it meant that the increased company growth was not affected by the also increased *Intellectual capital*.

The study results were not yet able to support the stakeholder theory and RBT where the companies with the capability to utilize the intellectual resources effectively and efficiently would encourage the development capabilities of the company. These findings indicated two possibilities. First, the company has minimum knowledge of *intellectual capital* so that it could not be utilized optimally.

The second is the *intellectual capital* will only give effect to the *firm's growth* just in certain companies, because in this study it was also noted that the *intellectual capital* positively affected to the *firm's growth* in companies with high technology. The higher the used technology in a company, the more optimal the use of the intellectual resources.

These results were contradictory with the study results of Solikhah *et al.* (2010) that showed that the *Intellectual capital* was proved significant to the company growth. The study results were corroborated contradictory with some of the other studies results such as the study of Mosavi *et al.* (2012) that provided empirical evidence that the *Intellectual Capital* (VAIC™) has affected on the growth (in this case measured by sales growth). It could be proved that the model has not been a comprehensive study because it only used two indicators in assessing the *firm's growth: earnings growth and asset growth*. The use of more than two indicators might improve the research model, such as indicators of revenue growth that was performed by Mosavi *et al.* (2012) in his research. According to Mosavi *et al.* (2012), *growth revenues* is the most straightforward measurement indicating the growth of an organization.

4.2.3 *Effect of Intellectual Capital on the Market Value of the Company (Firm's Market Value)*

This study showed that the IC did not affect to company's market value. It meant that the increased market value of the company was not influenced by the also increased *Intellectual capital*. The study result was appropriate with the result of Gan and Saleh (2008) which stated that the VAIC was not able to explain the company value. These findings indicated that market appreciation of a company was based on the owned physical resources, and the investors were not focused on the intellectual resources of the company. It was suggested from the fact that the *intellectual capital* has not become an interesting theme to be developed in creating value for the company. The investors are still not focused on long-term interests but only focus on improving the financial returns. It was not certainly appropriate with the theory of RBT.

The different results were proposed by Chen *et al.* (2005) which stated that intellectual capital had a positive impact on the market value. This study used only two indicators to describe the value of the company: *price to book value ratio* and *price-to-earnings ratio*. Even if it was based on the testing results of the outer

model, it was also known that the indicator of *price to earnings ratio* was not feasible, in other words, the variable market value was only represented by the indicator of *price to book value ratio*. It indicated that the indicator of *price to book value ratio* was less representative so that in the next study it could add other indicators such as *annual stock return*.

4.2.4. *There Is A Difference of Intellectual Capital Performance in Each Sector of The Company.*

Each type of company would have a different focus of interest so that the utilization of its resources would also be different. It is reinforced by Pulic opinion (2000) in his research that found that the contribution of each industry to the *Intellectual capital* is distinct.

The test results showed that the type of company had marginal and significant effects on the *intellectual capital* in the companies of telecommunications services, *high-tech industry*, and *low-tech industry*. It meant that these types of companies would affect marginally to some components of *intellectual capital*: VACA and STVA, whereas the other types did not affect VAHU. The test results of this study supported Solikhah *et al.* (2010) who found that the *Intellectual capital* contribution on the performance of different companies was different for each industry.

The findings of the research can illustrate how good is the circumstance of industry in Indonesia, where the majority is still many companies that rely on *human capital*.

Additional Discussion

Table 3
Output Test Results Summary

	High-Tech Industry			Low-Tech Industry			Telecommunication Service			Integration		
	FP	GR	MV	FP	GR	MV	FP	GR	MV	FP	GR	MV
p-value	<0.001***	0.086*	<0.001***	0.013**	0.210	0.102*	<0.001***	0.187	<0.001***	<0.001***	0.244	0.111
IC Koef. β	0.769	0.237	-0.570	0.557	0.144	0.302	0.745	-0.499	0.711	0.530	0.111	0.076
R²	0.592	0.056	0.325	0.310	0.021	0.091	0.555	0.249	0.506	0.281	0.012	0.006

Note:

***significant at 1%

** significant at 5%

* marginal significance at 10%

The conducted tests on the sample of a company with *high-tech industry*, *low-tech industry*, and the telecommunications company proved that the *intellectual capital* positive effected on *financial performance*. This is supported by research of Wang (2011) which stated that the *intellectual capital* influenced significantly to the company's performance. Whereas the variable of *firm's growth* that was appeared to be affected by the *intellectual capital* could only be proven in testing by samples of companies with *high-tech industry*. These results indicated a considerable influence on the utilization of *intellectual capital* in the company with *high-tech industry*. The companies of high-tech industry have utilized components of the resources including *physical capital* and *intellectual potential* to improve the company's growth. The average value of VACA and STVA owned by telecommunications services company was similar with the *low-tech industry* companies, and it meant that the telecommunications services companies were still not able to optimize the available funds and structural capital in the company. Inversely, the research of Gan and Saleh (2008) showed that the *intellectual capital* was able to explain the company growth using the company's productivity indicators in this case.

The different result occurred in the testing of *intellectual capital* effect on the *market value* where the *intellectual capital* was proved to have affected negatively to the *market value* with a β coefficient of -0.57. IC was also shown to have impacted positively on a sample of companies with *low-tech industry* and telecommunications services. These results are supported by the study results of Chen *et al.* (2005), which proved that *intellectual capital* affected positively to the *firm's market value*. The possible reasons that could underlie this condition was the difference in the management of *value-added capital employed* (VACA) and *structural capital value added* (STVA) such as could be seen in the *one-way ANOVA* test. Therefore, it could be assumed that the companies of *low-tech industry* are still not able to optimize the

available funds and structural capital in the companies so that it has not been optimal the impact on the growth of the company.

5. Conclusion and Limitation

It could be concluded from the results of hypothesis testing that the *intellectual capital* has a positive impact on *financial performance*. Whereas on the other hand, it could be concluded that the *intellectual capital* has not any effect on the *firm's growth* and *market value*. *One-way ANOVA* test could conclude that there were differences in the performance of *intellectual capital* of each company.

The values of *adjusted R²* of 0.28 indicated that the variable of *financial performance* could be explained by the variable of *intellectual capital* of 28%, whereas other factors explained the remaining 72% in outside of the research model. The test results of *one-way ANOVA* showed that the company types influenced VACA indicators and STVA company. The number of *adjusted R²* of 0.058 on testing among types of companies towards *intellectual capital* (VACA) meant that the variability of company types could explain the variability by 5.8%. Whereas the value of *adjusted R squared* on testing the company types to the STVA indicators also showed that the variability in the company types could explain the STVA variability of 15.2%.

It could be conducted further research by expanding the scope of the study, such as by adding objects like corporate banking services that indeed mainly utilized their human resources, so that it could be seen differently with the manufacturing companies. It would be better if the further research could add indicators of *Annual Stock Return* (ASR) in the variable of *market value*.

The indicators addition should also be conducted at the variable of *firm's growth*, such as by adding indicators of *growth revenue*. The further researches could also deepen the testing of the influence of company types by using *two-way ANOVA* analysis to know the influence of company types to the *intellectual capital* on the dependent variable. Then, it should be performed the hypothesis addition to analyze the test results in more detail.

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