

# The Effect Of Intellectual Capital Growth on The Value of The Company

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**Keywords:** Financial Performance, Firm Value, Intellectual Capital, Rate Of Growth Intellectual Capital.

**Abstract:** This research aimed to investigate the effect of intellectual capital growth toward firm value with financial performance as the intervening variable on banking companies in Indonesia that were listed on the Indonesian Stock Exchange (IDX) from 2011 to 2015. This research using a quantitative explanatory approach. The sample used in this research comprised 68 banking companies with the selection done by a purposive sampling method. The analysis method that was used in this research is partial least squares regression, performed by WarpPLS 5.0 for Windows software. The result of this research showed that: (1) intellectual capital growth has a positive significant effect toward financial performance; (2) financial performance has a positive significant effect toward firm value; (3) intellectual capital growth has a negative effect toward firm value; (4) intellectual capital growth does not have a direct effect toward firm value, but rather influences firm value indirectly with financial performance as the intervening variable.

## 1 INTRODUCTION

The rapid development of science and technology brings a positive impact to the development of the economy in Indonesia. One of the impacts of the phenomenon has been the emergence of ASEAN Economic Community (AEC), which provides business opportunities for companies from various industrial sectors in the ASEAN group to exist and develop, causing increasingly tight competition for the companies in Indonesia. This increasingly tight competition requires business actors to survive and compete by improving innovations on management and business strategy to achieve their goals.

Modern economic growth forces the companies to change their business management from resource-based business management to knowledge-based business management. The knowledge-based business emphasizes on the management of knowledge resources owned by the company. This is in line with the opinion of Pulic (1998), whereby economic growth is no longer determined by the number of employees, but by productivity improvement on an ongoing basis. One of the goals of establishing a company is to maximize the company's value.

Firm value is a certain condition as an image of the achievement of the company in the form of public trust in the company. The company's value is a very important measure because it reflects the level of shareholder prosperity. Companies must make innovative and sustainable efforts in order to achieve their goals and to survive amid the competition; one of these efforts is using the competitive advantage possessed. Competitive advantage can be created through the optimal management of enterprise resources.

The knowledge resources include intangible assets owned by the company, such as intellectual and technology capital owned by the company. Intellectual capital is a company asset consisting of experience, expertise, and abilities utilized by the company (Haldami & Rahayu, 2014).

Previous research on the influence of intellectual capital growth on the company's value is still fragmented and has not yet formed a consensus. Research on intellectual capital and intellectual capital growth on a company's performance in Indonesia had been conducted by Maski (2013) and Kurniawan (2013). The results of both studies proved that intellectual capital had a positive and significant influence on the company's performance. These results were inversely proportional to the research of Ulum et al. (2008), which proved that the

growth of intellectual capital did not affect the future performance of the company.

Chen et al. (2005) analyzed the relationship between the intellectual capital and a company's performance and its value in Taiwan, with the result of intellectual capital having a positive effect on both as well as being able to become an indicator of the company's future performance. Different results were found in the study of Solikhah et al. (2010), which proved that the intellectual capital did not affect the value of the company. Due to the inconsistency of the results of the research, a variable is needed that can bridge the influence of the growth of the intellectual capital to the company's value. In this study, the variable used was the company's performance.

## 2 LITERATURE REVIEW

The research by Chen et al. (2005) on the influence of the intellectual capital, R&D expenditure (RD) and advertising expenditure (AD) of the company on the performance and the value of the company was conducted on 4,254 public companies listed on the Taiwan Stock Exchange of the period 1992-2002. The results of this research provided empirical evidence that intellectual capital positively impacted company value, reflected through the Market to Book Value (MtBV), and company performance, reflected through the Return on Assets (ROA), Return on Equity (ROE), Growth in Revenue (GR), and Employee Productivity (EP), both in the present and in future, and that R&D affected company performance. The research by Tan et al. (2007) on the influence of the intellectual capital value and the intellectual capital growth on company performance was conducted on 150 companies listed on the Singapore Stock Exchange from 2000-2002. Tan et al.'s (2007) results stated that there was a positive influence of intellectual capital on the company's performance as projected with ROE, Earning Per Share (EPS), Annual Share Return (ASR) and the company's future performance, and there was a positive influence between Return on Gross Invested Capital (ROGIC) and the company's performance. Research conducted by Ulum et al. (2008) on the influence of intellectual capital value and intellectual capital growth on the company's performance used a sample of 130 banking sector companies in Indonesia in the period 2004-2006.

Ulum et al.'s (2008) results showed empirical evidence that there was a positive influence of intellectual capital on the company's performance,

but there was no positive effect of the intellectual capital growth with the future performance of the company.

A study by Solikhah et al. (2010) on the influence of intellectual capital on the financial performance, growth and value of the company was conducted on 116 manufacturing companies listed on the Indonesia Stock Exchange in 2006-2008. In this study, the financial performance was projected by current ratio (CR), debt to equity ratio (DER), total asset turnover ratio (ATO), return on investment (ROI), and ROE.

The growth of the company is projected by two indicators, namely profit growth (equity growth) and asset growth, and the company's value is projected by firm's market value (MVal). This study used partial least squares regression and one-way ANOVA in analyzing the data. The results of the research by Solikhah et al. (2010) showed empirical evidence that there was a positive influence of intellectual capital on financial performance and growth, but there was no intellectual capital influence on the company's value.

A study by Kurniawan (2013) on the influence of intellectual capital to the company's financial performance was conducted on 44 non-financial public-sector companies listed on the Indonesian Stock Exchange (IDX) in the period 2009-2011. The results show empirical evidence that intellectual capital had a positive influence on the financial performance projected with ROA, GR, and ATO. The average growth of intellectual capital (ROGIC) in 2009 to 2010 had no effect on financial performance in 2010, while ROGIC in 2010 to 2011 had a positive impact on financial performance in 2011.

A study by Maski (2013) on the influence of value and growth of intellectual capital on the short-term and long-term performance of a company was performed on 22 banking companies in 2005-2008. Maski's (2013) results showed empirical evidence that the intellectual capital (VAIC<sup>TM</sup> ROGIC) had a positive and significant influence on the financial performance, both in the short and the long term.

Research by Khansari et al. (2015) on the influence of intellectual capital growth on accounting, financial performance, and market function was conducted on 74 large and medium companies registered on the Tehran Stock Exchange from 2009-2013. Khansari et al.'s (2015) results showed empirical evidence that there was a positive influence of intellectual capital growth (ROGIC) on financial performance projected by the ROA, and ROE and there was a positive ROGIC effect on the

market function projected by earnings per share (EPS) and economic value added (EVA).

### 3 HYPOTHESIS

#### 3.1 The Influence of Intellectual Capital Growth on the Corporate Performance

RBV theory and competitive advantage state that the company is able to create value and competitive advantage if it utilizes, manages, and develops its superior resources, in this case its intellectual capital, on an ongoing basis so that the company is able to create a unique strategy that is superior to those of its competitors.

In stakeholder theory, the company must be responsible in providing benefits to the stakeholders through good resource management so that it can create value as the impact of the activities undertaken so as to minimize the losses that arise for stakeholders, so that the companies that utilize their intellectual capital effectively and efficiently will increase their productivity. The increased productivity will improve the company's performance. Good performance will increase the value of the company in the eyes of the market.

Research studies were conducted by Chen et al. (2005) and Tan et al. (2007). The research empirically proved that the intellectual capital had a positive effect on the company's performance. The same studies were also conducted by Ulum et al. (2008) and Sudibya and Restuti (2014), who examined intellectual capital in companies in Indonesia. On the basis of these considerations, the first hypothesis can be formulated as follows:

**H1: The growth of intellectual capital has a positive effect on the company's performance.**

#### 3.2 The Influence of Company Performance on Company Value

The company's profit, in addition to being an indicator of its ability to fulfill its obligations for its funders, is also an element in the creation of the company's value that shows the prospects of the company in the future. The increase in profits indicates an increase in the company's performance. Increased earnings can also show the prospect of a better company because it means the potential increase in profits obtained by the company, so that will increase investor confidence. By using

intellectual capital owned the company, the company can use it to manage its assets to be more efficient. The more efficient the company in managing its assets, the more profitability will increase, so the company's performance will also increase. So, if the performance of the company increases, which is marked by the increase of profitability, this will attract the attention of investors, thus increasing the value of the company as investors become interested to invest in the company.

If the resources owned by the company can be managed effectively and efficiently then this can encourage performance improvement for the company, to which stakeholders will respond positively.

The results of a study conducted by Mahendra (2011) showed that there was a positive influence of financial performance measured by profitability to the value of the company. On the basis of these considerations, the second hypothesis can be formulated as follows:

**H2: Company performance has a positive effect on company value.**

#### 3.3 The Influence of Intellectual Capital Growth on the Company's Value

Referring to the resource-based theory, competitive advantage, and stakeholder theory as a whole stated how the company can create value and competitive advantage by utilizing its resources, in this case its intellectual capital, in order to survive and compete with its competitors. Intellectual capital is not only exploited but must always be developed and managed well so that the competitive advantage and value added obtained by the company can last over the long term and be sustainable. On that basis, it can be concluded that the better the company in utilizing, managing, and developing the resources it has, the higher the value created by the company. Value creation and competitive advantage that grow from year to year show that the company is consistently able to manage its intellectual capital well. Companies that are able to create value added and competitive advantage on an ongoing basis get more valuation in the eyes of investors, affecting the increasing value of the company (Randa & Solon, 2012). Previous research showing a positive influence between intellectual capital and firm value was conducted by Belkaoui (2003) and Chen et al. (2005). On the basis of these considerations, the third hypotheses can be formulated as follows:

**H3: Intellectual Capital Growth positively affects the company's value.**

### 3.4 The Influence of Intellectual Capital Growth on the Company's Value with the Company's Performance as Intervening Variable

In order to maintain its superiority, the company is expected to not only be able to utilize the intellectual capital owned but also to be responsible to always make improvements and develop them. Intellectual capital developed consistently leads to sustained growth of sustainable intellectual capital so as to enable companies to survive amid business competition.

The growth of intellectual capital is followed by the growth of intellectual capital components themselves, namely human capital, structural capital, and customer capital. As the three components grow, the company has better human resources, better implementation of strategy and risk management, as well as better relationships with outsiders such as customers, suppliers and the government. These conditions improve the company's performance in terms of operational, financial, and human resources. These performance improvements also have an impact on the company's increased productivity. The higher the productivity of the company, the more the profit generated will increase. The higher the profit, the better the impression investors have of the company. The good impression held by investors makes the company's stock demand increase. This increased demand increases the value of the company simultaneously.

Previous research conducted by Firer and Williams (2003), and Chen et al. (2005) showed that intellectual capital had a positive effect on the performance and market value of the company.

**H4: The growth of intellectual capital has a positive effect on the company's value with the company's performance as intervening variable.**

## 4 RESEARCH METHOD

The approach used in this research was quantitative. The population was all of the banking companies listed on the Indonesian Stock Exchange in the period 2011-2015. The sampling used purposive sampling technique with criteria to release financial statements that did not include data-related variables

studied. The final sample selected was the data of 68 companies.

ROGIC was measured using VAIC<sup>TM</sup> (Value Added of Intellectual Capital) developed by Pulic (1998) by calculating the value added of each aspect. The company's performance was calculated by using three performance ratios: ROA (Return on Asset), CAR (Capital Adequacy Ratio), and LDR (Loan to Deposit Ratio). The company's value was calculated by using MtBV.

The data analysis method used in this research used partial least square (PLS) regression. The PLS model was used for several considerations, among others: the model used was a tiered causality relationship marked by the intervening variable that became the liaison between independent variables and dependent variable; the model formed was recursive in that it only had a one-way relationship and there was no reciprocal relationship between the dependent variable and the corresponding independent variable; and the measured variable was proxied by more than one proxy.

## 5 RESULT

### 5.1 The estimation of Outer Model Measurements

The measurement of the outer model was carried out by doing the measurement of reflective indicator that was estimated with the value of the outer loading factor. Chin (1998) stated that the minimum limit of the value of the outer loading factor was the feasible indicator used to reflect a certain variable amounted to 0.5. The result of processing the data is presented in the following table:

Table 1: The result of the estimation value of *outer loading factor*, Iteration 1

VARIABLE	INDICATOR	THE VALUE OF OUTER LOADING
ROGIC	R-VACA	0.933
	R-VAHU	0.925
	R-STVA	-0.119
COMPANY PERFORMANCE	ROA	0.741
	CAR	-0.390
	LDR	0.761
THE VALUE OF COMPANY	MVE	1.000

Source: Processed data (2016)

The indicator that has value of the outer loading factor under 0.5 is assumed less suitable as an indicator that can reflect each variable that is related. To get an optimal result, the indicators that cannot reflect the specified variable will be eliminated and will be recalculated over the value of the outer loading factor. The result of processing the data is presented in the table below:

Table 2: The result of the estimation value *outer loading factor*, Iteration 2

VARIABLE	INDICATOR	OUTER LOADING
ROGIC	R-VACA	0.931
	R-VAHU	0.931
COMPANY PERFORMANCE	ROA	0.788
	LDR	0.788
COMPANY VALUE	MVE	1.000

Source: Processed data (2016)

From the result, all indicators have value of outer loading factor greater than 0.5. It can be concluded that all indicators are suitable to become an indicator that can reflect on each corresponding variable.

### 5.2 Test Fit Model

A test fit model was conducted to ensure that the variables used in the study are free from multicollinearity problems between indicators and variables used. The variables are considered fit if the value of p is smaller than 0.05. The result of processed data of the model fit test can be seen from the table below:

Table 3: The result of Model Fit Test

VARIABLES	ORIGINAL SAMPLE (O)
Average Path Coefficient (APC)	0.257; P=0,001
Average R-Squared (ARS)	0.145; P=0,028
Average Adjusted R-Squared (AARS)	0.134; P=0,036
Average Block VIF	1.040
Average Full Collinearity	1.018

Source: Processed data (2016)

### 5.3 The estimation of Inner Model Measurements

The inner model testing was carried out to measure the relationship of all the variables in this study. The relationship between variables measured by using the *predictive-relevance* (Q2) value that is calculated based on the value of *R-Square Adjusted* (*Adjusted R2*) of each endogenous variable. The values of *R-Square Adjusted* (*Adjusted R2*) for each endogenous variable are presented in the table below:

Table 4: The value of *R-Square Adjusted* (*Adjusted R2*)

Endogenous Variables	Nilai Adjusted R-Squared (R2)
Company Performance	0.049
Company Value	0.240

Source: Processed data (2016)

From the table, it can be proven that the variables of company performance amounted to 39.80% by the variable value of growth intellectual capital, whereas for the variables of the company values amounted to 28% by the variable value of intellectual capital, variable growth of intellectual capital, and variable of company performance. To view the relationship of all the variables in the system that was built in this study, then conduct the calculation of *predictive-relevance* (Q2) as follows:

$$Q2 = 1 - (1 - R2KP) (1 - R2NP)$$

$$Q2 = 1 - (1 - 0.049) (1 - 0,240)$$

$$Q2 = 0.27724$$

Based on the calculation result, the obtained value of *predictive-relevance* (Q2) amounted to 0.27724. It showed that in the model built the phenomenon of company value amounted to 27.24, while the rest is explained by other variables that are not involved in this study.

Table 5: The result of t-statistic test of Direct Effect

Relationship between variables	Original Sample	P Values
ROGIC → KP	0.222	0.007
KP → NP	0.468	<0.001
ROGIC → NP	-0.081	0.192

Source: Processed data (2016)

Table 6: The result of t-statistic test of Indirect Effect

Relationship between variables	Original Sample	VAF
ROGIC → KP → NP	0.103896	453.77%

Source: Processed data (2016)

## 5.4 Research Result

### 5.4.1 The Effect of ROGIC on Company Performance

The result of this study by using statistical tests showed that the variable growth of intellectual capital (ROGIC) affected significantly the company performance. The result showed that banking companies that exist in Indonesia are able to manage optimally both aspects of intellectual capital, namely *capital adequacy* (physical capital) and *human capital* (human resource). Banking companies in Indonesia are proven to be able to increase their long-term company performance by conducting management on the physical model. In addition, organized the process of resource effectively and efficiently in order to achieve the objectives of the company.

### 5.4.2 The Effect of Company Performance on Company Values

The research result by using statistical tests showed that the variables of company performance affect significantly the company values, so it can be concluded that the company performance that is projected with the *return on asset* (ROA) and *loan*

*to deposit ratio* (LDR) affect significantly and give a positive impact on the company values, which are projected by *market value equity* (MVE).

Company performance describes the work achievement that has been achieved by the company in certain period. Employees as the aspect of human capital have been successful to be placed and get themselves as company stakeholders so that they will try to maximize their intellectual ability to create added value for the company in the form of an increase in ROA and the stability of LDR value. The higher the company performance, the better the company condition. This means the company is able to utilize the capital invested by the investor very well and hence increase the income of the company.

### 5.4.3 The Effect of ROGIC on Company Values

The result of this study by using statistical tests showed that the variable growth of intellectual capital has a negative impact, but a not significant one, on company values, meaning that when there is increase in the growth of intellectual capital this will cause a decrease on company value. This result showed that the growth of intellectual capital of a certain company cannot yet become a certain measure that is used to give value on a company.

The different value of company intellectual capital will affect the company performance that is produced and will then produce company value, so there is no direct connection between the growth of company intellectual capital on company value, but rather through the company performance as mediator. The increased management on physical capital and the utilization of human resources cannot affect directly the increase of the company's value.

### 5.4.4 The Effect of ROGIC on Company Value with Company Performance as Intervening Variable

The results of this study showed that there is a positive and insignificant effect between the growth of intellectual capital on the performance of the company, as well as there being a positive and significant effect between the company's performance and company value. In this study, there is also a full mediation effect between the growth of intellectual capital, company performance, and company value with VAF value above 80% (453.77% > 80%), which proves that the company's performance variable can be fully mediated.

The results of this analysis indicate that the more efficient and effective companies are in managing

intellectual capital owned then the more this will provide an increase in the company's performance and have an effect on the increase in company value. The hypothesis test states that partial growth of intellectual capital has no significant effect on company value. These results showed that company value cannot be assessed directly from the growth of intellectual capital, but through the intervening variable of company performance.

Referring to the resource-based view and the theory of competitive advantage, the company has been able to apply the design strategy by utilizing its intellectual capital resources in a sustainable way to maintain its existence and create competitive advantage so that it can compete with other companies.

## 6 CONCLUSION

Based on the discussion above, the following conclusions can be given:

1. The growth of intellectual capital has a positive and significant impact on company performance. Companies that are capable of managing well-owned resources will generate added value that will be reflected in good financial performance. This is in line with the resource-based view. The utilization of intellectual capital value effectively and efficiently will contribute significantly to the achievement of competitive advantage.
2. Companies that have good company performance will give good signals to the market. The good signals that are captured by the market reflect good company value as well. This is in accordance with the theory of signals, i.e. the performance of a certain company that is reflected in its financial reports can provide a signal to the market so that the market can give a positive response by providing a good assessment of the company.
3. The growth of intellectual capital negatively affects the value of the company directly. This shows that the management of the intellectual capital of banking companies is not optimal and the company has not focused on the management of intellectual capital and has not used it as a competitive advantage. The company is also still focused on short-term interests, namely increasing financial returns.
4. The growth of intellectual capital has a positive effect on company value through company performance as an intervening variable. This shows that the management of the intellectual capital of banking companies has been good, so that affects the increase of company performance. Good company performance is one of the indicators for investors in investing, so a good company performance will increase the value of the company. In addition, banking companies have focused on managing intellectual capital and have used it as a competitive advantage.

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