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ANALYSIS OF VALUE ADDED INTELLECTUAL CAPITAL TO THE FINANCIAL PERFORMANCE OF LISTED BANKING COMPANIES IN INDONESIA

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Abstract

This study aims to find out is there any correlation Value Added Intellectual Coefficient to the financial performance of listed banking company in Indonesia Stock Exchange (IDX). In this research, we using a sample of a banking company that listed during period 2009-2016. We using purposive sampling, there for the number of samples is 23 banks, so for 8 years become total 184. The data analysis technique is using regression multivariate. The result is significant positive impact between Value Added Intellectual Coefficient banking companies' financial performance, but if the Value Added Intellectual Coefficient components such as value-added capital employed, value-added human capital, structural capital value-added are tested one by one, the outcomes are not significantly impacted on financial performance (return on assets, asset turnover, and assets growth). The limitations of this research are not using market measurement, only using financial measurement.

Keywords: Intellectual Capital, Value Added Intellectual Capital (VAIC^{TM}), Banking Company Performance,

JEL Classification: J24, L25, O34,

Corresponding Author

INTRODUCTION

Intellectual Capital (IC) is increasingly developing and becoming a concern because traditional accounting measurements can no longer adequately establish the real value of the company. And it cannot be denied if the Intellectual Capital plays an important role in the profit of the company's competitive advantage (Gan and Saleh, 2008). Intangible assets cannot be measured, how they can be managed (Brinker, 2000). IC evaluation can help companies to be more efficient, more profitable and more competitive (Brinker, 2000). Pulic (2000) stated that the IC measurement process

was not carried out directly but carried out a measure to assess the efficiency of added value as a result of the company's intellectual ability, namely Value Added Intellectual Capital (VAIC).

In the development of Intellectual Capital, VAIC is quite popular and often heard, where valuing is not only in terms of management but includes all aspects, especially including employees in it. The main component of VAIC is capital employed or physical capital (value-added capital employed/ VACA), human capital (value-added human capital/VAHU), structural capital (structural capital value-added/STVA) (Ulum, Ghozali, and Chariri. 2008). By linking between Value Added It is hoped that Intellectual Coefficient (VAIC™) with banking performance can see the efficiency of banking performance in the face of increasingly fierce competition in this era of globalization and make banks in Indonesia able to compete healthily and profitably for companies.

Based on research conducted by Chen et al. (2006), if a company has Intellectual Capital with efficiency in its three components, namely Capital Employee Efficiency (VACA), human capital efficiency (VAHU), Structural Capital Efficiency (STVA), then the company will have a market value and financial performance are increasing from year to year.

The company's financial performance measurement used in this study is the traditional measurement using the ratio as previous studies. Previous studies that examined its related Intellectual Capital with the company's performance is done by Firer and William (2003), Chen et al. (2005), Gan and Saleh (2008), Ulum, Ghozali, and Chariri. (2008), and other research. The ratio used is three measurement ratios, namely: (1) Profitability that uses the proxy Return on Assets (ROA); (2) Productivity that uses proxy Asset Turnover (ATO); (3) Growth that uses proxy Asset Growth. Referring to the studies above, the author was interested in raising the topic and financial performance of banking companies in Indonesia.

LITERATURE REVIEW

Stakeholder theory considers the position of the parties concerned and has power. Stakeholders are a consideration for companies to disclose and or not disclose information in financial statements (Ulum, Chariri, and Ghozali, 2008). This is because of the behavior and decisions made by the company influence the welfare of stakeholders. The stakeholders referred to in the company include shareholders, employees, customers, suppliers, creditors, government, and society. Based on stakeholder theory, company management is expected to implement and report on important company activities to stakeholders. All stakeholders have the right to obtain information about company activities and their impact on stakeholders. In the end, stakeholders are free to choose to use or not to use the information.

The company provides two types of information in financial statements: mandatory information and voluntary information. The company's financial information is classified as mandatory information, while non-financial information is classified as voluntary information. The focus of this study is intellectual capital which is voluntary information. One of the factors that influence intellectual capital disclosure

is the performance of the intellectual capital itself. Meek and Gray (1988) stated that value added is an accurate measure created by stakeholders and then distributed to the same stakeholders. The better a company in maximizing the potential in the company both from tangible assets and intangible assets, the higher the value added that can be generated by the company. This value added will later be able to encourage the company's financial performance for the interests of stakeholders. Intellectual capital disclosure is expected to increase stakeholder trust and minimize losses that may arise for stakeholders.

Signaling Theory is related to the existence of information asymmetry, where information received by each party is not the same. Information asymmetry occurs between company management and parties with an interest in company information. Hartono (2006) states that signaling theory indicates that a good quality company will intentionally provide a signal in the form of positive information in the market through disclosures in financial statements, thus the market is expected to be able to distinguish between good and bad quality companies.

Signaling theory suggests how a company should signal to interested parties, in this case emphasizing the importance of information issued by companies with investment decisions from outside the company. Information is considered important if the information can provide information and an overview of the company's survival in the past, present, and future conditions. Besides, complete, relevant, accurate and timely information is also needed by investors and stakeholders as an analytical tool in making investment decisions.

One type of information issued by the company is an annual report. The annual report should contain relevant information and disclose information that reports users to consider important to be known both inside and outside parties. Outside parties can use the annual report as a benchmark for assessing company capabilities and signals for outsiders. Intellectual capital is part of the company's annual report which is voluntarily disclosed. Intellectual capital disclosure allows parties outside the company, including investors and stakeholders, to be able to better assess the company's ability and reduce risks that might occur.

Bontis et al. (2000) define intellectual capital including all processes and sets that usually do not appear on balance sheets and all intangible assets (trademarks, patents, and brands) that have been considered against modern accounting methods included in them is the contribution of knowledge from humans themselves as company resources. Edvinson and Malone (1997); Ross (1997); Sveiby (1997); Klein (1998); Winter (1998) in Widyaningrum (2004), dividing Intellectual Capital into two, namely lifeblood of human capital in the Intellectual Capital. This is where innovation and improvement appear but these components are difficult to measure. Brinker (2000) provides some basic characteristics that can be measured from this capital, namely training programs, credential, experience, competence, recruitment, mentoring, learning programs, individual potential, and personality.

Structural capital consists of Innovation capital. Innovation capital is an intangible asset in the form of employee creativity in utilizing opportunities that exist within the company environment to be able to create innovations that provide added value and meet consumer needs. Process capital is an intangible asset that plays a role in the production process itself, starting from receiving orders to delivering products or services to consumers, thus creating high-value output in the eyes of

consumers. Relational capital is the company's ability to maintain good relationships with internal and external companies. Value added is an increase in the value of wealth that is degenerate or produced by the use of productive assets from all sources of corporate wealth by all existing teams, including capital owners, employees, creditors, and the government.

In the assessment of Intellectual Capital, there are indeed several methods that have developed. But in this study, the authors used a method that is quite commonly used, namely Value Added Intellectual Coefficient (VAIC). The Chartered Institute of Management Accountants (CIMA, 2000) stated that Value Added Intellectual Coefficient (VAIC) takes into account the difference between sales and all inputs (except labor expenses), divided by Intellectual Capital, which is estimated by total labor expenses. The conclusion is that the higher the ratio, the more efficient a company is in using its IC. The main advantage of the VAIC method is that this method is simple in its calculations.

Three components of VAIC are Value Added Capital Employed (VACA or physical capital is an indicator of value added created efficiently by the company's capital (Firer and William, 2003). Included in capital employed are each tangible asset used for corporate operations, such as buildings, land, equipment, and technology that are easily bought and sold on the market. It can be said that Capital Employed Efficiency or physical capital is capital or can be said as assets owned by the company in a real or non-tangible form that the company maximally seeks to create value for the company. Assets owned by the company must be used by the company for its operational needs efficiently to achieve company goals. Value Added Human Capital (VAHU) One component of Intellectual Capital that determines the intellectual enterprise of an efficient company is Human Capital (HC). Human capital includes an intellectual force derived from human beings owned by the company, namely employees who are competent, committed, motivated to work, and very loyal to the company, where they are at the core of the creation of intellectual power that can disappear when they are not working for other companies (Bontis, 1999 in Margaretha and Rakhman, 2006). Structural Capital Value Added (STVA) is something that makes a company firm due to the value achieved by a company that starts working on its own for the progress of the company (Ross et al. 1997 in Margaretha and Rahkman, 2006). Structural Capital includes everything that is not related to humans, consisting of databases, organizational structures, a series of processes, strategies, and everything that creates a higher corporate value than its material value.

Companies that have a strong Structural Capital will have a culture that supports individuals in it to try new things, learn more, and learn to fail. Commercial banks which amounted to 124 banks in 2008 were divided into two parts, namely the Government Bank (5 banks) and Private Banks (119 banks). And the private bank is further divided into Regional Development Banks (26 banks) which branch off BPD Sharia Business units (15 banks); Private Commercial Bank (88) consisting of Private Commercial Banks Sharia Business Units (13 banks); and Sharia Private Commercial Banks (5 banks). People's Credit Banks totaling 1897 in total, consisting of Conventional Rural Banks (1769 banks) and Sharia BPRs (128 banks).

Performance measures include financial and non-financial measures (Fisher, 1998) in Astuti (2005). Financial size shows various actions that occur outside the financial field. The financial increase of returns is a result of various operational performance which includes increasing consumer trust in products produced by the company, increasing cost affectiveness internal business processes used by companies to produce products and increasing productivity and commitment of employees (Mulyadi and Seyawan, 2000 in Astuti, 2005). So, if a company aims to obtain its financial performance, the company should be able to motivate its employees in a non-financial perspective, because in that perspective there are the real drivers of long-term financial performance.

Bontis (1998), where Human capital deals with Structural Capital and Customer Capital; Customer Capital deals with Structural Capital; Customer Capital and Structural Capital are related to industry performance. Bontis et al. (2000) Human capital related to Structural Capital and Customer Capital; Customer Capital deals with Structural Capital; Structural Capital is related to industrial performance. Riahi-Belkaoui (2003) Intellectual Capital is significantly related to the performance of multinational companies in the USA.

Previous research such as: Firer and Williams (2003), VAIC using linear regression, the results related to company performance (ROA, ATO, MB); Chen et al. (2005), VAIC using correlation regression, the results of Intellectual Capital affecting the market value and company performance; R&D influence company performance; Goh (2005) VAIC, ranking Intellectual Capital influences the performance of banking companies; HCE gives the highest value compared to CEE and SCE; Margaretha and Rakhman (2006) VAIC using regression Intellectual Capital has a significant positive influance on ROE (profitability). Tan et al. (2007) VAIC, PLS Intellectual Capital has a positive influence on company performance, both present, and future; Intellectual Capital growth rates are positively related to company performance in the future; Intellectual Capital's contribution to company performance differs based on the type of industry; Kamath (2007) VAIC using regression with different segments, the banking performance is also different. Human capital efficiency in foreign banks, CEE in the bank's public sector. Gan and Saleh (2008) VAIC, Those technology-intensive companies are still dependent on physical capital efficiency; Syafruddin and Kuryanto (2008) VAIC, Partial Least Square Intellectual Capital does not have a positive influence on performance. Ulum, Ghozali, and Chariri. (2008) Intellectual Capital has a positive influence on the company's financial performance and overall, VAHU and ROA show significant values. It can be seen that there are studies that produce conclusions that are the same or different. In each country, the results obtained are likely to be different because each country has different economies, politics, culture and so on which have a little more influence.

Hypothesis
H1: There is a significant positive influence of VAIC on the profitability of banking companies listed on the IDX.

H1a: There is a significant positive influence of VACA on the profitability of banking companies listed on the IDX.

H1b: There is a significant positive influence of VAHU on the profitability of banking companies listed on the IDX.

H1c: There is a significant positive influence of STVA on the profitability of banking companies listed on the IDX.

H2: There is a significant positive influence of VAIC on the productivity of banking companies listed on the IDX.

H2a: There is a significant positive influence of VACA on the productivity of banking companies listed on the IDX.

H2b: There is a significant positive influence of VACA on the productivity of banking companies listed on the IDX.

H2c: There is a significant positive influence of VAHU on the productivity of banking companies listed on the IDX.

H3: There is a significant positive influence of VAIC on the growth of banking companies listed on the IDX.

H3a: There is a significant positive influence of VACA on the growth of banking companies listed on the IDX.

H3b: There is a positive influence on VAHU towards the growth of banking companies listed on the IDX.

H3c: There is a significant positive influence of STVA on the growth of banking companies listed on the IDX.

Conceptual Framework

Due to difference result of the previous study, we want to find out whether there is a significant positive relationship between VAIC and company performance described by each proxy of the two variables, where Intellectual Capital is proxy with VAIC. VAIC consists of three components, namely: physical capital (VACA), Human capital (VAHU) and Structural Capital (STVA) which will later be tested whether it influences financial performance; while the performance of proxy with Profitability using return on assets (ROA), Productivity using asset turnover (ATO) and Growth with asset growth (AG). I t can be described as a conceptual framework as below:
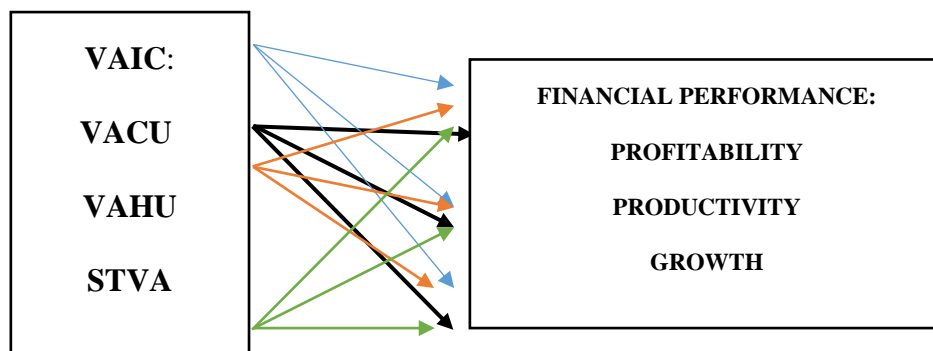

Figure 1. Conceptual Framework

METHOD

This research is a hypothesis testing namely testing whether there is an influence between VAIC on the financial performance of banking companies listed on the Indonesia Stock Exchange in the period 2009-2016. Based on the research hypothesis, this study uses a type of causality investigation. The unit of analysis used in this study is the company. The time horizon in this study is *time* series and cross-sectional. The population used is all banking companies operating in Indonesia from 2009 to 20016 and for the past 8 years they are listed on the Indonesia Stock Exchange (IDX). The research sample was obtained by purposive sampling method.

The variables used in this study consisted of independent variables and dependent variables. The independent variable in this study is Intellectual Capital which is measured by using the Value Added Intellectual Coefficient (VAIC). In this study as an independent variable is VAIC, where IC performance is measured as measured by the value, added created by three components, namely: physical capital (VACA), Human capital (VAHU) and Structural Capital (STVA). The combination of the three added values is symbolized as VAIC developed by Pulic (2000).

Performance measures are commonly used in traditional management is a financial measure, so that the traditional management increase customer confidence to services companies, improving the competence and commitment of employees, the closeness of the relationship partnership enterprise with suppliers, dams improved productivity and *cost-effectiveness* of business processes used serving consumers do not be measured. In formal control systems, performance measures include *financial* and non-financial (Fisher, 1998) in Astuti (2005). Stages In Calculation of Value Added Intellectual Coefficient (VAIC) along with the formulation (formula) of the calculation are: Value Added (VA) is the output minus input. The output is total sales and other income; Input expense and costs (other than employee expenses). Value Added Capital employee (VACE) shows the contribution made by each unit of Capital Employee to value added organization. Where Capital Employed (CE) is equal to equity. Value Added Human capital (VAHU) shows the contribution made by every penny invested in Human Capital of the value added of the organization. Where Human capital (HC) is equal to employee expense. Structural Capital Value Added (STVA) measure Structural Capital amount needed to produce 1 rupiah of VA and is an indication of how the success of the SC in value creation. Where Structural Capital is the same as Value Added (VA) minus Human Capital. Value Added Intellectual Coefficient (VAIC ™). Indicates organizational intellectual ability. Where is the sum of VACA, VAHU, and STVA.

The dependent variable in this study is the company's financial performance, namely: profitability that uses the Return on Asset (ROA) ratio (Chen et al., 2005); productivity using the Asset Turnover (ATO) ratio (Firer and Williams, 2003) and growth using the Asset Growth proxy as the author cites from Ulum, Ghozali, and Chariri. (2008). Return on total assets (ROA), where ROA reflects business profits and company efficiency in the utilization of total assets (Ulum, Ghozali, and Chariri.

2008). Where net income is divided by total assets. Asset Growth (AG), shows the growth of the assets of a company. Where to use the difference in total assets of the current year with the total assets of the previous year compared with the previous year. Asset Turnover (ATO) shows the turnover of assets or otherwise indicate the company's ability to transform assets into revenue, where ATO is the ratio of total revenue to book value of total assets.

In this study, we use secondary data collection techniques sourced from (1) Indonesian Capital Market Directory (ICMD) from 2009 to 2016, to obtain profitability ratios (ROA) from sample companies; (2) Indonesian Stock Exchange Website (www.jsx.co.id); (3) Bank Indonesia Website (www.bi.go.id); (4) The website of each sample bank. The duration of data collection from the financial statements of a banking company is approximately 14 days. Samples obtained by purposive sampling method with the criteria: Listed on the Stock Exchange during the period 2009-20016 and having net income during this period.

This study uses a multiple regression method. Regression analysis is done to determine the influence of the independent variable on the dependent variable (Ghozali, 2005). In the regression before testing the hypothesis, the classic assumption test is done first. In this regression technique, before testing hypotheses the research variables, must first perform a classical assumption regression test to obtain a valid model so that it can be used to make estimates (Margaretha and Rakhman, 2006). This test aims to determine whether the independent variables are used together can influence the dependent variable. The collected data was analyzed by quantitative analysis using parametric statistics. Then the test is carried out with statistical tests on the variables used.

RESULT

The banking company listed on the Stock Exchange for the period 2009-2016. From the total number of the existing population, as stated earlier that the objects in this study are in the form of banking companies listed on the Indonesian Stock Exchange in a continuous during the period 2009-2016 without differentiating the size of the bank. For this reason, there are 23 banks obtained to be sampled.

Descriptive statistics explain the characteristics of the data used in the study seen from the minimum, maximum, *mean* (mean), and standard deviation values as shown below:

Table 1. Descriptive Statistics- VAIC

	N	Minimum	Maximum	Mean	Std.Deviation
VAIC	184	-15.78	19.95	3.6936	4.15397
VACA	184	-2.29	2.26	.3180	.51077
VAHU	184	-17.35	18.57	2.7336	4.07422
STVA	184	-2.84	4.67	.6420	.61035
Valid N (listwise)	184				

Source: Data processed with SPSS 25

Based on the table above it is known that there are four research variables for VAIC (VACA, VAHU, and STVA) with a total sample of 184 samples. The VAIC variable has a minimum value of -15.78 while the maximum value is 19.95 and the average value is 3.6936 with a standard deviation of 4.15397. For each component of VAIC namely VACA, VAHU, and STVA each have value as illustrated in Table 1, for a minimum VACA of -2.29 while the maximum value is 2.26 and the average value is 0.3180 with a standard deviation amounting to 0.51077. For a minimum VAHU of -17.35, the maximum value is 18.57 and the average value is 2.7336 with a standard deviation of 4.07422. For minimum STVA for VAHU minimum-17.35 is the maximum value is 18.57 and the average value is 2.7336 with a standard deviation of 4.07422. For a minimum STVA -2.84, the maximum value of 4.67 and an average value of 0, 6420 with a standard deviation of 0,61035.

In the performance variable which uses three traditional measurements, namely profitability (ROA), growth (AG), and productivity (ATO).

Table 2. Descriptive Statistics- Performance

	N	Minimum	Maximum	Mean	Std.Deviation
ROA	184	-152.99	5.68	.0337	15.39145
AG	184	.32	1.38	.1548	.20408
ATO	184	.03	.25	.1169	.02769
Valid N (listwise)	184				

Source: Data processed with SPSS 25

Table 2 shows that the number of samples 184, that ROA produces a minimum value of -152.99 and a maximum value of 5,68; while the average is 0.0337 and the standard deviation is 15,39145. For AG it produces a minimum value of 0,32 and a maximum value of 1.38; while the average is 0.1548 and the standard deviation is 0.02769.

The regression equation used in this study is shown by:

Model 1 $\qquad$: $\text{ROA} = \beta_0 + \beta_1(\text{VAIC}^{TM}) + \varepsilon$
Improvement Model 1: $\text{ROA} = \beta_0 + \beta_1(\text{VACA}) + \beta_2(\text{VAHU}) + \beta_3(\text{STVA}) + \varepsilon$

Model 2 $\qquad$: $\text{ATO} = \beta_0 + \beta_1(\text{VAIC}^{TM}) + \varepsilon$
Improvement Model 2: $\text{ATO} = \beta_0 + \beta_1(\text{VACA}) + \beta_2(\text{VAHU}) + \beta_3(\text{STVA}) + \varepsilon$

Model 3 $\qquad$: $\text{AG} = \beta_0 + \beta_1(\text{VAIC}^{TM}) + \varepsilon$
Improvement Model 3: $\text{AG} = \beta_0 + \beta_1(\text{VACA}) + \beta_2(\text{VAHU}) + \beta_3(\text{STVA}) + \varepsilon$

Hypothesis testing is done using the T-Test (Partial Test), F-Test (Simultaneous Test) and coefficient of determination. The T-test is conducted to determine the influence of the independent variable on the dependent variable. Basic decision making:

If *p-value* < error rate ($\alpha = 0.05$), then H0 is rejected
If *p-value* > error rate ($\alpha = 0.05$), then H0 fails to be rejected

The table showed a table that describes an overview or summary of the results of a lengthy analysis stated above.

Table 3. Hypothesis Test Results- Summary

Independent Variables	Dependent Variable	Significant	Conclusion
VAIC	Profitability (ROA)	0.037	H0 is rejected
	Productivity (ATO)	0.017	H0 is rejected
	Growth (AG)	0.028	H0 is rejected
VACA	Profitability (ROA)	0.069*	Ho accepted
	Productivity (ATO)	0.392*	Ho accepted
	Growth (AG)	0.362*	Ho accepted
VAHU	Profitability (ROA)	0.018	H0 is rejected
	Productivity (ATO)	0.036	H0 is rejected
	Growth (AG)	0.036	H0 is rejected
STVA	Profitability (ROA)	0.472*	Ho accepted
	Productivity (ATO)	0.494*	Ho accepted
	Growth (AG)	0.058*	Ho accepted

The results of the t-test it is known that the *p-value* 0.037 is smaller than 0, then Ho is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the profitability of banking companies. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005). The results of the t-test, it is known that *p-value* 0.069 is greater than 0.05, then Ho fails to be rejected, which means that there is no significant influence between VACA on the profitability of banking companies. The results of the t-test, it is known that *p-value* 0.018 is smaller than 0.05, then Ho is rejected, which means that there is a significant influence between VAHU on the profitability of banking companies. Based on the regression coefficient of 0.982 we know that the influence of VAHU on ROA is positive and also significant. The results of the t-test, it is known that *p-value* 0.472 is greater than 0.05, then Ho is accepted, which means that there is no significant influence between VACA on the profitability of banking companies listed on the Stock Exchange in the 2009-2016 period. Based on the regression coefficient of -1.824, it can be seen that the influence of the STVA on ROA is negative and also not significant. The results of the t-test, it is known that *p-value* 0.037 is smaller than 0.05, Ho is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the productivity of banking companies listed on the Indonesia Stock Exchange 2009-2016. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005).

The results of the t-test are known that *p-value of* 0.372 is greater than 0.05, then H_0 is received, which means that there is no significant influence between VACA towards productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VACA on AG is positive and not significant. The results of the t-test are known that *p-value of* 0.036 is less than 0.05, then H_0 is rejected, which means that there is significant influence between VAHU on productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VAHU on ATO is positive and significant.

The results of the t-test are known that *p-value of* 0.484 is greater than 0.05, then $H_0 2$ is received, which means that there is no significant influence on productivity between STVA banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VACA on ATO is positive and not significant.

The results of the t-test, it is known that *p-value* 0.037 is smaller than 0.05, H03 is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the banking company AG listed on the Indonesia Stock Exchange 2009-2016 period. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005). The results of the t-test, it is known that *p-value* 0.372 is greater than 0.05, then H0 is accepted, which means that there is no significant influence between VACA on the growth of banking companies listed on the Stock Exchange in the 2009-2016 period. Based on the regression coefficient of 0.035, it is known that the influence of VACA on ROA is positive but not significant. From the results of the t-test is known that *p-value of* 0.036 is less than 0.05, then H_0 is rejected, which means that there is significant influence between VAHU on productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VAHU on ATO is positive and significant.

The results of the t-test are known that *p-value of* 0.484 is greater than 0.05, then H_0 is received, which means that there is no significant influence on productivity between STVA banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035 it is known that the influence of VACA on ATO is positive and not significant.

Calculating the VAIC on performance (ROA, ATO, AG) found H0 rejected and H1 accepted, meaning that IC has a significant influence on ROA, ATO, AG. In calculating each IC component (VAIC), namely VACA, VAHU, STVA on performance (ROA, ATO, AG) it was found that H0 was rejected and H1 was accepted on the VAHU component, meaning that VAHU had a significant influence on ROA, ATO, AG. Whereas in VACA and STVA it was found Ha was rejected and H0 was accepted on VACA and STVA components, meaning that VACA and STVA did not have a significant influence on ROA, ATO, AG.

The purpose of the F-test is to examine the influence of all the independent variables used in the study on the independent variables with their decision making carried out with the following provisions:

If sig. (F) <0.05, then H0 is rejected, Ha fails to be rejected

If sig. (F)> 0.05, then H0 fails to be rejected, Ha is rejected

Together, all independent variables (VACA, VAHU, STVA) have a significant influence on the dependent variable (ROA).

The results of simultaneous testing (test - F) for model 1 are shown by the table as follows:

Table 4. Simultaneous Testing Results

ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
1	2606.004	3	868.668	3.993	.010[a]
Regression	21320.429	98	217.555		
Residual	23926.432	101			
Total					

a. Predictors: (Constant), STVA, VAHU, VACA

b. Dependent Variable: ROA

Source: Data processed with SPSS 25

From regression testing by looking at the Anova table, it is known that *p-value is* 0.010 <alpha 0.05, then H0 is rejected. This means that if tested simultaneously then all independent variables (VACA, VAHU, STVA) together have a significant influence on the dependent variables ROA, ATO, and AG.

Testing the coefficient of determination is done to determine the magnitude of the contribution of the independent variable to the dependent variable. Testing the coefficient of determination is done by looking at the value of R^2. The test results of the coefficient of determination are shown in the following table:

Table 5. Fit Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.330[a]	.109	.082	14.74976	2.108

a. Predictors: (Constant), STVA, VAHU, VACA

b. Dependent Variable: ROA

Source: Data processed with SPSS 25

From the results of simple regression processing, it is known that the coefficient of determination $R^2 = 0.109$ shows that all independent variables (VACA, VAHU, STVA) are only able to explain the variation of the dependent variable (ROA) of 10.9% while the rest (100% - 10, 9% = 89.1%) able to be explained by other factors not included in the model.

Table 6. Simple Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.206[a]	.043	.033	.02720	2.029

a. Predictors: (Constant), STVA, VAHU, VACA

b. Dependent Variable: ATO

Source: Data processed with SPSS 25

The results of simple regression processing, it is known that the coefficient of determination $R^2 = 0.430$ shows that all independent variables (VACA, VAHU, STVA) are only able to explain the variation of the dependent variable (ATO) of 4.30 %, the remaining 95.70% able to be explained by other factors not included in the model.

Table 7. Overview of Regression Test Results

Dependent variable /Results	Profitability (ROA)	Productivity (ATO)	Growth (AG)
N	184	184	184
R^2	0, 048	0.043	0.042

From R square value, we can conclude that 4.8% the variation in ROA can be explained by variations of VAIC, while the remaining 95.2% is explained by causes outside the model; 4.3% the variation in ROA can be explained by variations of VAIC, while the remaining 95.7% is explained by causes outside the model, and 4.2% variation in ROA can be explained by variations of VAIC, while the remaining 95.8% is explained by causes outside the model.

CONCLUSION

The purpose of this research is to examine whether there is an influence between Value Added Intellectual Coefficient (VAIC)on the financial performance of banking companies listed on the Indonesia Stock Exchange in the period 2009-2016. After testing the influence of VAIC on financial performance on 23 banking companies listed in Indonesia Stock Exchange (IDX), can be concluded that there is positive and significant influence correlation between VAIC a company of its performance; the higher the value of VAIC's company, the better financial performance of the company.

If each component of VAIC (VACA, VAHU, STVA) tested, it shown there is negative significant on financial performance. The results of this study support previous studies conducted by Belkaoui (2003), Firer and William (2005) and Gan and Saleh (2008). For companies and management of banking companies in Indonesia if they want to improve company performance, especially company ROA, then the company should make improvements in the development of Intellectual Capital, namely the three components of VAIC: VACA, VAHU, STVA especially VAHU because in this study it was found that positive VAHU had a significant influence on the three measures of corporate financial performance (ROA, ATO, AG).

The implication for the government, it is expected to be able to provide an expansion of information and the establishment of a standard, especially IC in Indonesian companies. For the professional, it is expected to socialize the development of this IC, especially in the Indonesian context. In essence, this research is expected to be able to become an input for interested parties to develop IC's and to improve financial performance in Indonesia.

Future studies can consider using performance measures based on market value (Chen et al). Further research does not only use financial performance but can also add non-financial performance variables as dependent variables. Years of research can be added to 10 years or more to get better results

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ANALYSIS OF VALUE ADDED INTELLECTUAL CAPITAL TO THE FINANCIAL PERFORMANCE OF LISTED BANKING COMPANIES IN INDONESIA

by Erliana Banjarnahor

ANALYSIS OF VALUE ADDED INTELLECTUAL CAPITAL TO THE FINANCIAL PERFORMANCE OF LISTED BANKING COMPANIES IN INDONESIA

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Abstract

This study aims to find out is there any correlation Value Added Intellectual Coefficient to the financial performance of listed banking company in Indonesia Stock Exchange (IDX). In this research, we using a sample of a banking company that listed during period 2009-2016. We using purposive sampling, there for the number of samples is 23 banks, so for 8 years become total 184. The data analysis technique is using regression multivariate. The result is significant positive impact between Value Added Intellectual Coefficient banking companies' financial performance, but if the Value Added Intellectual Coefficient components such as value-added capital employed, value-added human capital, structural capital value-added are tested one by one, the outcomes are not significantly impacted on financial performance (return on assets, asset turnover, and assets growth). The limitations of this research are not using market measurement, only using financial measurement.

Keywords: **Intellectual Capital, Value Added Intellectual Capital (VAIC^{TM}), Banking Company Performance,**

JEL Classification: J24, L25, O34,

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INTRODUCTION

Intellectual Capital (IC) is increasingly developing and becoming a concern because traditional accounting measurements can no longer adequately establish the real value of the company. And it cannot be denied if the Intellectual Capital plays an important role in the profit of the company's competitive advantage (Gan and Saleh, 2008). Intangible assets cannot be measured, how they can be managed (Brinker, 2000). IC evaluation can help companies to be more efficient, more profitable and more competitive (Brinker, 2000). Pulic (2000) stated that the IC measurement process

was not carried out directly but carried out a measure to assess the efficiency of added value as a result of the company's intellectual ability, namely Value Added Intellectual Capital (VAIC).

In the development of Intellectual Capital, VAIC is quite popular and often heard, where valuing is not only in terms of management but includes all aspects, especially including employees in it. The main component of VAIC is capital employed or physical capital (value-added capital employed/ VACA), human capital (value-added human capital/VAHU), structural capital (structural capital value-added/STVA) (Ulum, Ghozali, and Chariri. 2008). By linking between Value Added It is hoped that Intellectual Coefficient (VAIC™) with banking performance can see the efficiency of banking performance in the face of increasingly fierce competition in this era of globalization and make banks in Indonesia able to compete healthily and profitably for companies.

Based on research conducted by Chen et al. (2006), if a company has Intellectual Capital with efficiency in its three components, namely Capital Employee Efficiency (VACA), human capital efficiency (VAHU), Structural Capital Efficiency (STVA), then the company will have a market value and financial performance are increasing from year to year.

The company's financial performance measurement used in this study is the traditional measurement using the ratio as previous studies. Previous studies that examined its related Intellectual Capital with the company's performance is done by Firer and William (2003), Chen et al. (2005), Gan and Saleh (2008), Ulum, Ghozali, and Chariri. (2008), and other research. The ratio used is three measurement ratios, namely: (1) Profitability that uses the proxy Return on Assets (ROA); (2) Productivity that uses proxy Asset Turnover (ATO); (3) Growth that uses proxy Asset Growth. Referring to the studies above, the author was interested in raising the topic and financial performance of banking companies in Indonesia.

LITERATURE REVIEW

Stakeholder theory considers the position of the parties concerned and has power. Stakeholders are a consideration for companies to disclose and or not disclose information in financial statements (Ulum, Chariri, and Ghozali, 2008). This is because of the behavior and decisions made by the company influence the welfare of stakeholders. The stakeholders referred to in the company include shareholders, employees, customers, suppliers, creditors, government, and society. Based on stakeholder theory, company management is expected to implement and report on important company activities to stakeholders. All stakeholders have the right to obtain information about company activities and their impact on stakeholders. In the end, stakeholders are free to choose to use or not to use the information.

The company provides two types of information in financial statements: mandatory information and voluntary information. The company's financial information is classified as mandatory information, while non-financial information is classified as voluntary information. The focus of this study is intellectual capital which is voluntary information. One of the factors that influence intellectual capital disclosure

is the performance of the intellectual capital itself. Meek and Gray (1988) stated that value added is an accurate measure created by stakeholders and then distributed to the same stakeholders. The better a company in maximizing the potential in the company both from tangible assets and intangible assets, the higher the value added that can be generated by the company. This value added will later be able to encourage the company's financial performance for the interests of stakeholders. Intellectual capital disclosure is expected to increase stakeholder trust and minimize losses that may arise for stakeholders.

Signaling Theory is related to the existence of information asymmetry, where information received by each party is not the same. Information asymmetry occurs between company management and parties with an interest in company information. Hartono (2006) states that signaling theory indicates that a good quality company will intentionally provide a signal in the form of positive information in the market through disclosures in financial statements, thus the market is expected to be able to distinguish between good and bad quality companies.

Signaling theory suggests how a company should signal to interested parties, in this case emphasizing the importance of information issued by companies with investment decisions from outside the company. Information is considered important if the information can provide information and an overview of the company's survival in the past, present, and future conditions. Besides, complete, relevant, accurate and timely information is also needed by investors and stakeholders as an analytical tool in making investment decisions.

One type of information issued by the company is an annual report. The annual report should contain relevant information and disclose information that reports users to consider important to be known both inside and outside parties. Outside parties can use the annual report as a benchmark for assessing company capabilities and signals for outsiders. Intellectual capital is part of the company's annual report which is voluntarily disclosed. Intellectual capital disclosure allows parties outside the company, including investors and stakeholders, to be able to better assess the company's ability and reduce risks that might occur.

Bontis et al. (2000) define intellectual capital including all processes and sets that usually do not appear on balance sheets and all intangible assets (trademarks, patents, and brands) that have been considered against modern accounting methods included in them is the contribution of knowledge from humans themselves as company resources. Edvinson and Malone (1997); Ross (1997); Sveiby (1997); Klein (1998); Winter (1998) in Widyaningrum (2004), dividing Intellectual Capital into two, namely lifeblood of human capital in the Intellectual Capital. This is where innovation and improvement appear but these components are difficult to measure. Brinker (2000) provides some basic characteristics that can be measured from this capital, namely training programs, credential, experience, competence, recruitment, mentoring, learning programs, individual potential, and personality.

Structural capital consists of Innovation capital. Innovation capital is an intangible asset in the form of employee creativity in utilizing opportunities that exist within the company environment to be able to create innovations that provide added value and meet consumer needs. Process capital is an intangible asset that plays a role in the production process itself, starting from receiving orders to delivering products or services to consumers, thus creating high-value output in the eyes of

consumers. Relational capital is the company's ability to maintain good relationships with internal and external companies. Value added is an increase in the value of wealth that is degenerate or produced by the use of productive assets from all sources of corporate wealth by all existing teams, including capital owners, employees, creditors, and the government.

In the assessment of Intellectual Capital, there are indeed several methods that have developed. But in this study, the authors used a method that is quite commonly used, namely Value Added Intellectual Coefficient (VAIC). The Chartered Institute of Management Accountants (CIMA, 2000) stated that Value Added Intellectual Coefficient (VAIC) takes into account the difference between sales and all inputs (except labor expenses), divided by Intellectual Capital, which is estimated by total labor expenses. The conclusion is that the higher the ratio, the more efficient a company is in using its IC. The main advantage of the VAIC method is that this method is simple in its calculations.

Three components of VAIC are Value Added Capital Employed (VACA or physical capital is an indicator of value added created efficiently by the company's capital (Firer and William, 2003). Included in capital employed are each tangible asset used for corporate operations, such as buildings, land, equipment, and technology that are easily bought and sold on the market. It can be said that Capital Employed Efficiency or physical capital is capital or can be said as assets owned by the company in a real or non-tangible form that the company maximally seeks to create value for the company. Assets owned by the company must be used by the company for its operational needs efficiently to achieve company goals. Value Added Human Capital (VAHU) One component of Intellectual Capital that determines the intellectual enterprise of an efficient company is Human Capital (HC). Human capital includes an intellectual force derived from human beings owned by the company, namely employees who are competent, committed, motivated to work, and very loyal to the company, where they are at the core of the creation of intellectual power that can disappear when they are not working for other companies (Bontis, 1999 in Margaretha and Rakhman, 2006). Structural Capital Value Added (STVA) is something that makes a company firm due to the value achieved by a company that starts working on its own for the progress of the company (Ross et al. 1997 in Margaretha and Rahkman, 2006). Structural Capital includes everything that is not related to humans, consisting of databases, organizational structures, a series of processes, strategies, and everything that creates a higher corporate value than its material value.

Companies that have a strong Structural Capital will have a culture that supports individuals in it to try new things, learn more, and learn to fail. Commercial banks which amounted to 124 banks in 2008 were divided into two parts, namely the Government Bank (5 banks) and Private Banks (119 banks). And the private bank is further divided into Regional Development Banks (26 banks) which branch off BPD Sharia Business units (15 banks); Private Commercial Bank (88) consisting of Private Commercial Banks Sharia Business Units (13 banks); and Sharia Private Commercial Banks (5 banks). People's Credit Banks totaling 1897 in total, consisting of Conventional Rural Banks (1769 banks) and Sharia BPRs (128 banks).

Performance measures include financial and non-financial measures (Fisher, 1998) in Astuti (2005). Financial size shows various actions that occur outside the financial field. The financial increase of returns is a result of various operational performance which includes increasing consumer trust in products produced by the company, increasing cost affectiveness internal business processes used by companies to produce products and increasing productivity and commitment of employees (Mulyadi and Seyawan, 2000 in Astuti, 2005). So, if a company aims to obtain its financial performance, the company should be able to motivate its employees in a non-financial perspective, because in that perspective there are the real drivers of long-term financial performance.

Bontis (1998), where Human capital deals with Structural Capital and Customer Capital; Customer Capital deals with Structural Capital; Customer Capital and Structural Capital are related to industry performance. Bontis et al. (2000) Human capital related to Structural Capital and Customer Capital; Customer Capital deals with Structural Capital; Structural Capital is related to industrial performance. Riahi-Belkaoui (2003) Intellectual Capital is significantly related to the performance of multinational companies in the USA.

Previous research such as: Firer and Williams (2003), VAIC using linear regression, the results related to company performance (ROA, ATO, MB); Chen et al. (2005), VAIC using correlation regression, the results of Intellectual Capital affecting the market value and company performance; R&D influence company performance; Goh (2005) VAIC, ranking Intellectual Capital influences the performance of banking companies; HCE gives the highest value compared to CEE and SCE; Margaretha and Rakhman (2006) VAIC using regression Intellectual Capital has a significant positive influance on ROE (profitability). Tan et al. (2007) VAIC, PLS Intellectual Capital has a positive influence on company performance, both present, and future; Intellectual Capital growth rates are positively related to company performance in the future; Intellectual Capital's contribution to company performance differs based on the type of industry; Kamath (2007) VAIC using regression with different segments, the banking performance is also different. Human capital efficiency in foreign banks, CEE in the bank's public sector. Gan and Saleh (2008) VAIC, Those technology-intensive companies are still dependent on physical capital efficiency; Syafruddin and Kuryanto (2008) VAIC, Partial Least Square Intellectual Capital does not have a positive influence on performance. Ulum, Ghozali, and Chariri. (2008) Intellectual Capital has a positive influence on the company's financial performance and overall, VAHU and ROA show significant values. It can be seen that there are studies that produce conclusions that are the same or different. In each country, the results obtained are likely to be different because each country has different economies, politics, culture and so on which have a little more influence.

Hypothesis

H1: There is a significant positive influence of VAIC on the profitability of banking companies listed on the IDX.

H1a: There is a significant positive influence of VACA on the profitability of banking companies listed on the IDX.
H1b: There is a significant positive influence of VAHU on the profitability of banking companies listed on the IDX.
H1c: There is a significant positive influence of STVA on the profitability of banking companies listed on the IDX.
H2: There is a significant positive influence of VAIC on the productivity of banking companies listed on the IDX.
H2a: There is a significant positive influence of VACA on the productivity of banking companies listed on the IDX.
H2b: There is a significant positive influence of VACA on the productivity of banking companies listed on the IDX.
H2c: There is a significant positive influence of VAHU on the productivity of banking companies listed on the IDX.
H3: There is a significant positive influence of VAIC on the growth of banking companies listed on the IDX.
H3a: There is a significant positive influence of VACA on the growth of banking companies listed on the IDX.
H3b: There is a positive influence on VAHU towards the growth of banking companies listed on the IDX.
H3c: There is a significant positive influence of STVA on the growth of banking companies listed on the IDX.

Conceptual Framework
Due to difference result of the previous study, we want to find out whether there is a significant positive relationship between VAIC and company performance described by each proxy of the two variables, where Intellectual Capital is proxy with VAIC. VAIC consists of three components, namely: physical capital (VACA), Human capital (VAHU) and Structural Capital (STVA) which will later be tested whether it influences financial performance; while the performance of proxy with Profitability using return on assets (ROA), Productivity using asset turnover (ATO) and Growth with asset growth (AG). I t can be described as a conceptual framework as below:
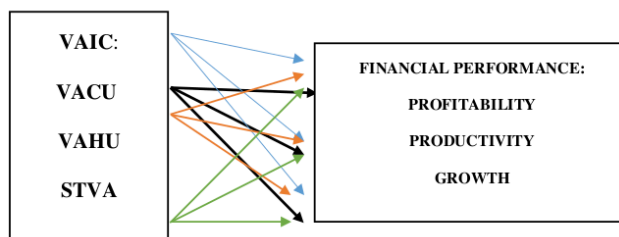

Figure 1. Conceptual Framework

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METHOD

This research is a hypothesis testing namely testing whether there is an influence between VAIC on the financial performance of banking companies listed on the Indonesia Stock Exchange in the period 2009-2016. Based on the research hypothesis, this study uses a type of causality investigation. The unit of analysis used in this study is the company. The time horizon in this study is *time* series and cross-sectional. The population used is all banking companies operating in Indonesia from 2009 to 20016 and for the past 8 years they are listed on the Indonesia Stock Exchange (IDX). The research sample was obtained by purposive sampling method.

The variables used in this study consisted of independent variables and dependent variables. The independent variable in this study is Intellectual Capital which is measured by using the Value Added Intellectual Coefficient (VAIC). In this study as an independent variable is VAIC, where IC performance is measured as measured by the value, added created by three components, namely: physical capital (VACA), Human capital (VAHU) and Structural Capital (STVA). The combination of the three added values is symbolized as VAIC developed by Pulic (2000).

Performance measures are commonly used in traditional management is a financial measure, so that the traditional management increase customer confidence to services companies, improving the competence and commitment of employees, the closeness of the relationship partnership enterprise with suppliers, dams improved productivity and *cost-effectiveness* of business processes used serving consumers do not be measured. In formal control systems, performance measures include *financial* and non-financial (Fisher, 1998) in Astuti (2005). Stages In Calculation of Value Added Intellectual Coefficient (VAIC) along with the formulation (formula) of the calculation are: Value Added (VA) is the output minus input. The output is total sales and other income; Input expense and costs (other than employee expenses). Value Added Capital employee (VACE) shows the contribution made by each unit of Capital Employee to value added organization. Where Capital Employed (CE) is equal to equity. Value Added Human capital (VAHU) shows the contribution made by every penny invested in Human Capital of the value added of the organization. Where Human capital (HC) is equal to employee expense. Structural Capital Value Added (STVA) measure Structural Capital amount needed to produce 1 rupiah of VA and is an indication of how the success of the SC in value creation. Where Structural Capital is the same as Value Added (VA) minus Human Capital. Value Added Intellectual Coefficient (VAIC ™). Indicates organizational intellectual ability. Where is the sum of VACA, VAHU, and STVA.

The dependent variable in this study is the company's financial performance, namely: profitability that uses the Return on Asset (ROA) ratio (Chen et al., 2005); productivity using the Asset Turnover (ATO) ratio (Firer and Williams, 2003) and growth using the Asset Growth proxy as the author cites from Ulum, Ghozali, and Chariri. (2008). Return on total assets (ROA), where ROA reflects business profits and company efficiency in the utilization of total assets (Ulum, Ghozali, and Chariri.

2008). Where net income is divided by total assets. Asset Growth (AG), shows the growth of the assets of a company. Where to use the difference in total assets of the current year with the total assets of the previous year compared with the previous year. Asset Turnover (ATO) shows the turnover of assets or otherwise indicate the company's ability to transform assets into revenue, where ATO is the ratio of total revenue to book value of total assets.

In this study, we use secondary data collection techniques sourced from (1) Indonesian Capital Market Directory (ICMD) from 2009 to 2016, to obtain profitability ratios (ROA) from sample companies; (2) Indonesian Stock Exchange Website (www.jsx.co.id); (3) Bank Indonesia Website (www.bi.go.id); (4) The website of each sample bank. The duration of data collection from the financial statements of a banking company is approximately 14 days. Samples obtained by purposive sampling method with the criteria: Listed on the Stock Exchange during the period 2009-20016 and having net income during this period.

This study uses a multiple regression method. Regression analysis is done to determine the influence of the independent variable on the dependent variable (Ghozali, 2005). In the regression before testing the hypothesis, the classic assumption test is done first. In this regression technique, before testing hypotheses the research variables, must first perform a classical assumption regression test to obtain a valid model so that it can be used to make estimates (Margaretha and Rakhman, 2006). This test aims to determine whether the independent variables are used together can influence the dependent variable. The collected data was analyzed by quantitative analysis using parametric statistics. Then the test is carried out with statistical tests on the variables used.

RESULT

The banking company listed on the Stock Exchange for the period 2009-2016. From the total number of the existing population, as stated earlier that the objects in this study are in the form of banking companies listed on the Indonesian Stock Exchange in a continuous during the period 2009-2016 without differentiating the size of the bank. For this reason, there are 23 banks obtained to be sampled.

Descriptive statistics explain the characteristics of the data used in the study seen from the minimum, maximum, *mean* (mean), and standard deviation values as shown below:

Table 1. Descriptive Statistics- VAIC

	N	Minimum	Maximum	Mean	Std.Deviation
VAIC	184	-15.78	19.95	3.6936	4.15397
VACA	184	-2.29	2.26	.3180	.51077
VAHU	184	-17.35	18.57	2.7336	4.07422
STVA	184	-2.84	4.67	.6420	.61035
Valid N (listwise)	184				

Source: Data processed with SPSS 25

Based on the table above it is known that there are four research variables for VAIC (VACA, VAHU, and STVA) with a total sample of 184 samples. The VAIC variable has a minimum value of -15.78 while the maximum value is 19.95 and the average value is 3.6936 with a standard deviation of 4.15397. For each component of VAIC namely VACA, VAHU, and STVA each have value as illustrated in Table 1, for a minimum VACA of -2.29 while the maximum value is 2.26 and the average value is 0.3180 with a standard deviation amounting to 0.51077. For a minimum VAHU of -17.35, the maximum value is 18.57 and the average value is 2.7336 with a standard deviation of 4.07422. For minimum STVA for VAHU minimum-17.35 is the maximum value is 18.57 and the average value is 2.7336 with a standard deviation of 4.07422. For a minimum STVA -2.84, the maximum value of 4.67 and an average value of 0, 6420 with a standard deviation of 0,61035.

In the performance variable which uses three traditional measurements, namely profitability (ROA), growth (AG), and productivity (ATO).

Table 2. Descriptive Statistics- Performance

	N	Minimum	Maximum	Mean	Std.Deviation
ROA	184	-152.99	5.68	.0337	15.39145
AG	184	.32	1.38	.1548	.20408
ATO	184	.03	.25	.1169	.02769
Valid N (listwise)	184				

Source: Data processed with SPSS 25

Table 2 shows that the number of samples 184, that ROA produces a minimum value of -152.99 and a maximum value of 5,68; while the average is 0.0337 and the standard deviation is 15,39145. For AG it produces a minimum value of 0,32 and a maximum value of 1.38; while the average is 0.1548 and the standard deviation is 0.02769.

The regression equation used in this study is shown by:
Model 1 : $ROA = \beta_0 + \beta_1(VAIC^{TM}) + \varepsilon$
Improvement Model 1: $ROA = \beta_0 + \beta_1(VACA) + \beta_2(VAHU) + \beta_3(STVA) + \varepsilon$

Model 2 : $ATO = \beta_0 + \beta_1(VAIC^{TM}) + \varepsilon$
Improvement Model 2: $ATO = \beta_0 + \beta_1(VACA) + \beta_2(VAHU) + \beta_3(STVA) + \varepsilon$

Model 3 : $AG = \beta_0 + \beta_1(VAIC^{TM}) + \varepsilon$
Improvement Model 3: $AG = \beta_0 + \beta_1(VACA) + \beta_2(VAHU) + \beta_3(STVA) + \varepsilon$

Hypothesis testing is done using the T-Test (Partial Test), F-Test (Simultaneous Test) and coefficient of determination. The T-test is conducted to determine the influence of the independent variable on the dependent variable. Basic decision making:
If *p-value* < error rate ($\alpha = 0.05$), then H0 is rejected
If *p-value* > error rate ($\alpha = 0.05$), then H0 fails to be rejected

The table showed a table that describes an overview or summary of the results of a lengthy analysis stated above.

Table 3. Hypothesis Test Results- Summary

Independent Variables	Dependent Variable	Significant	Conclusion
VAIC	Profitability (ROA)	0.037	H0 is rejected
	Productivity (ATO)	0.017	H0 is rejected
	Growth (AG)	0.028	H0 is rejected
VACA	Profitability (ROA)	0.069*	Ho accepted
	Productivity (ATO)	0.392*	Ho accepted
	Growth (AG)	0.362*	Ho accepted
VAHU	Profitability (ROA)	0.018	H0 is rejected
	Productivity (ATO)	0.036	H0 is rejected
	Growth (AG)	0.036	H0 is rejected
STVA	Profitability (ROA)	0.472*	Ho accepted
	Productivity (ATO)	0.494*	Ho accepted
	Growth (AG)	0.058*	Ho accepted

The results of the t-test it is known that the *p-value* 0.037 is smaller than 0, then Ho is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the profitability of banking companies. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005). The results of the t-test, it is known that *p-value* 0.069 is greater than 0.05, then Ho fails to be rejected, which means that there is no significant influence between VACA on the profitability of banking companies. The results of the t-test, it is known that *p-value* 0.018 is smaller than 0.05, then Ho is rejected, which means that there is a significant influence between VAHU on the profitability of banking companies. Based on the regression coefficient of 0.982 we know that the influence of VAHU on ROA is positive and also significant. The results of the t-test, it is known that *p-value* 0.472 is greater than 0.05, then Ho is accepted, which means that there is no significant influence between VACA on the profitability of banking companies listed on the Stock Exchange in the 2009-2016 period. Based on the regression coefficient of -1.824, it can be seen that the influence of the STVA on ROA is negative and also not significant. The results of the t-test, it is known that *p-value* 0.037 is smaller than 0.05, Ho is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the productivity of banking companies listed on the Indonesia Stock Exchange 2009-2016. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005).

The results of the t-test are known that *p-value of* 0.372 is greater than 0.05, then H_0 is received, which means that there is no significant influence between VACA towards productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VACA on AG is positive and not significant. The results of the t-test are known that *p-value of* 0.036 is less than 0.05, then H_0 is rejected, which means that there is significant influence between VAHU on productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VAHU on ATO is positive and significant.

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The results of the t-test are known that *p-value of* 0.484 is greater than 0.05, then $H_0 2$ is received, which means that there is no significant influence on productivity between STVA banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VACA on ATO is positive and not significant.

The results of the t-test, it is known that *p-value* 0.037 is smaller than 0.05, H03 is rejected, which means that there is a positive and significant influence between Value Added Intellectual Coefficient (VAIC) on the banking company AG listed on the Indonesia Stock Exchange 2009-2016 period. The results of this study are consistent with the research conducted by Belkaoui (2003), Firer and Wiliams (2005). The results of the t-test, it is known that *p-value* 0.372 is greater than 0.05, then H0 is accepted, which means that there is no significant influence between VACA on the growth of banking companies listed on the Stock Exchange in the 2009-2016 period. Based on the regression coefficient of 0.035, it is known that the influence of VACA on ROA is positive but not significant. From the results of the t-test is known that *p-value of* 0.036 is less than 0.05, then H_0 is rejected, which means that there is significant influence between VAHU on productivity banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035, it is known that the influence of VAHU on ATO is positive and significant.

The results of the t-test are known that *p-value of* 0.484 is greater than 0.05, then H_0 is received, which means that there is no significant influence on productivity between STVA banking companies listed on the Stock Exchange from 2009-2016. Based on the regression coefficient of 0.035 it is known that the influence of VACA on ATO is positive and not significant.

Calculating the VAIC on performance (ROA, ATO, AG) found H0 rejected and H1 accepted, meaning that IC has a significant influence on ROA, ATO, AG. In calculating each IC component (VAIC), namely VACA, VAHU, STVA on performance (ROA, ATO, AG) it was found that H0 was rejected and H1 was accepted on the VAHU component, meaning that VAHU had a significant influence on ROA, ATO, AG. Whereas in VACA and STVA it was found Ha was rejected and H0 was accepted on VACA and STVA components, meaning that VACA and STVA did not have a significant influence on ROA, ATO, AG.

The purpose of the F-test is to examine the influence of all the independent variables used in the study on the independent variables with their decision making carried out with the following provisions:

If sig. (F) <0.05, then H0 is rejected, Ha fails to be rejected

If sig. (F)> 0.05, then H0 fails to be rejected, Ha is rejected

Together, all independent variables (VACA, VAHU, STVA) have a significant influence on the dependent variable (ROA).

The results of simultaneous testing (test - F) for model 1 are shown by the table as follows:

Table 4. Simultaneous Testing Results

ANOVA[b]

Model	Sum of Squares	df	Mean Square	F	Sig.
1	2606.004	3	868.668	3.993	.010[a]
Regression	21320.429	98	217.555		
Residual	23926.432	101			
Total					

a. Predictors: (Constant), STVA, VAHU, VACA
b. Dependent Variable: ROA

Source: Data processed with SPSS 25

From regression testing by looking at the Anova table, it is known that *p-value is* 0.010 <alpha 0.05, then H0 is rejected. This means that if tested simultaneously then all independent variables (VACA, VAHU, STVA) together have a significant influence on the dependent variables ROA, ATO, and AG.

Testing the coefficient of determination is done to determine the magnitude of the contribution of the independent variable to the dependent variable. Testing the coefficient of determination is done by looking at the value of R^2. The test results of the coefficient of determination are shown in the following table:

Table 5. Fit Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.330[a]	.109	.082	14.74976	2.108

a. Predictors: (Constant), STVA, VAHU, VACA
b. Dependent Variable: ROA

Source: Data processed with SPSS 25

From the results of simple regression processing, it is known that the coefficient of determination R^2 = 0.109 shows that all independent variables (VACA, VAHU, STVA) are only able to explain the variation of the dependent variable (ROA) of 10.9% while the rest (100% - 10, 9% = 89.1%) able to be explained by other factors not included in the model.

Table 6. Simple Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.206[a]	.043	.033	.02720	2.029

a. Predictors: (Constant), STVA, VAHU, VACA
b. Dependent Variable: ATO

Source: Data processed with SPSS 25

The results of simple regression processing, it is known that the coefficient of determination R^2 = 0.430 shows that all independent variables (VACA, VAHU, STVA) are only able to explain the variation of the dependent variable (ATO) of 4.30 %, the remaining 95.70% able to be explained by other factors not included in the model.

Table 7. Overview of Regression Test Results

Dependent variable /Results	Profitability (ROA)	Productivity (ATO)	Growth (AG)
N	184	184	184
R^2	0, 048	0.043	0.042

From R square value, we can conclude that 4.8% the variation in ROA can be explained by variations of VAIC, while the remaining 95.2% is explained by causes outside the model; 4.3% the variation in ROA can be explained by variations of VAIC, while the remaining 95.7% is explained by causes outside the model, and 4.2% variation in ROA can be explained by variations of VAIC, while the remaining 95.8% is explained by causes outside the model.

CONCLUSION

The purpose of this research is to examine whether there is an influence between Value Added Intellectual Coefficient (VAIC)on the financial performance of banking companies listed on the Indonesia Stock Exchange in the period 2009-2016. After testing the influence of VAIC on financial performance on 23 banking companies listed in Indonesia Stock Exchange (IDX), can be concluded that there is positive and significant influence correlation between VAIC a company of its performance; the higher the value of VAIC's company, the better financial performance of the company.

If each component of VAIC (VACA, VAHU, STVA) tested, it shown there is negative significant on financial performance. The results of this study support previous studies conducted by Belkaoui (2003), Firer and William (2005) and Gan and Saleh (2008). For companies and management of banking companies in Indonesia if they want to improve company performance, especially company ROA, then the company should make improvements in the development of Intellectual Capital, namely the three components of VAIC: VACA, VAHU, STVA especially VAHU because in this study it was found that positive VAHU had a significant influence on the three measures of corporate financial performance (ROA, ATO, AG).

The implication for the government, it is expected to be able to provide an expansion of information and the establishment of a standard, especially IC in Indonesian companies. For the professional, it is expected to socialize the development of this IC, especially in the Indonesian context. In essence, this research is expected to be able to become an input for interested parties to develop IC's and to improve financial performance in Indonesia.

Future studies can consider using performance measures based on market value (Chen et al). Further research does not only use financial performance but can also add non-financial performance variables as dependent variables. Years of research can be added to 10 years or more to get better results

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