



## **The Empirical Study on Intellectual Capital Approach toward Financial Performance on Rural Banking Sectors in Indonesia**

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### **ABSTRACT**

The success of a company in high level competition requires public trust. Similarly, the banking services provider of rural banking sector in Java, Indonesia. To keep customer satisfaction with high trust of financial performance that customer loyalty can be achieved is necessary for public which is measured through financial performance. The aim of this study was to investigate the effect of intellectual capital in the banking sector on the island of Java, Indonesia to financial performance. Data processing techniques using multiple regression. The research method using purposive sampling and exploratory with a sample number 615. The data were analyzed using Eviews 7 and Microsoft Exel 2007. The results showed that the value added (VA) capital employee variables significantly influence toward financial performance and VA human capital variables and variable structural capital VA have significant effect also on toward financial performance. The overall test results produced an adjusted R<sup>2</sup> indicate that the intellectual capital variables significantly influence toward financial performance.

**Keywords:** Intellectual Capital, Value Creation, Firm Performance, Financial Performance

**JEL Classifications:** D83, M21

### **1. INTRODUCTION**

Resource-based view (RBV) of the firm has been considered as one of the most and fast growing methods in the currently strategic management field (Newbert, 2007; Powell, 2001). Penrose and Grant (1959) researched and recognized issues which provide important influence of resources of the firm toward competitive position; nonetheless, Wernerfelt (1984) argued that organizational success is determined by internal resources. Many research results mentioned that gaining competitive advantages is the basis of the concept of heterogeneity of valueable resources, whereby sustained competitive advantages are driven by a firm's resources (Jarvenpaa and Leidner, 1998; Wagner, 2006; Machmud and Sidharta, 2014). RBV shows several competitive advantages derived from aligning skill, motivation, and so forth with organizational system, structure, and processes that achieve capabilities at an organizational level (Prahalad and Hamel, 1990). RBV is usually expressed by considering the compatibility that becomes the core competitive position and focusing on more efficient resources utilization (Barney et al., 2001).

The approach taken by RBV focus more on asset tangible, many studies to develop the approach to intangible assets as a resource that can generate competitive advantage of the company. Approach to knowledge-based view goes as far as to the firm's stock of knowledge as one of the resources owned by the company and has the strategic role of the company (Decarolis and Deeds, 1999). Several studies have shown that there are positive effects on the stock's of knowledge on firm performance (Helfat and Raubitseek, 2000; Hoopes and Postrel, 1999; Tiger and Calantone, 1998). So it can not be denied that the intangible asset and tangible assets have an important role to firm performance.

Intellectual capital is an intangible asset that is owned by the company, and in general, the company considers the intangible asset as a strategic role in improving firm performance. This is in accordance with the economic development that is characterized by a knowledge-based company where advancement depends on the transformation and the capitalization of the results of the knowledge possessed by the company. Research on the measurement of intellectual capital is still relatively new, few

studies that measure the intellectual capital based on several methods such as Balance scorecard (Kaplan and Norton, 1992), Skandia navigator (Edvinsson and Malone, 1997), intellectual capital index dan direct intellectual capital method (Ross et al., 1997), measuring model of intangible assets (Sveiby, 1997), human resources accounting (Stahle et al., 2011) value added intellectual coefficient (VAIC) (Pulic, 1998; 2000; 2004).

The main purpose of the measurement of intangible assets and tangible assets, is to maintain the company's position and improve company performance. In banking company it is necessary to determine and quantify the extent of the assets owned by the company can improve performance. Public confidence in the banking sector is vital with regard to sustainability and corporate performance. Therefore, this study takes the research object on the banking sector to enable companies to maintain business continuity and performance of the company with respect to public confidence is seen from the financial performance. This may be caused by low corporate awareness of the importance of intellectual capital in creating and sustaining a competitive advantage and shareholder value. Global survey results show that intellectual capital is one of the most widely type of information to be considered by investors. The survey results also show that in fact the issues about disclosure of intellectual capital is one of 10 types of information needed by users. Based on these data, it should be investigated whether the public company responds to requests for information relating to intellectual capital. Thus, there are still gap in information on financial statement report (Bozzolan et al., 2003).

The limited of empirically research on intellectual capital, especially in the banking sector of rural bank in Indonesia and still diverse results of the empirical evidence of research on intellectual capital by using VAIC require further study so that the diversity of the research results can be utilized by the company in order to improve firm performance.

Based on the background of the above issues as well as the magnitude of the potentials that can be gained from increasing the role of intellectual capital, an in-depth study on the financial performance of banking sector need to be done, so that these objectives can be achieved optimally. This research aims to identify and analyze empirically to the following issue: The influences of intellectual capital and financial performance of banking sector in Java, Indonesia.

## 2. LITERATURE REVIEW

### 2.1. Intellectual Capital

Intellectual capital itself is a knowledge, information and intellectual property that are able to find opportunities and manage threats in the life of a company, so it can affect the durability and competitive advantage in a wide variety of things. Human capital (HC) is the lifeblood in intellectual capital (Bontis, 2000). Here is the source of innovation and improvement, but it is a component that is difficult to measure. HC is also a very useful source of knowledge, skills, and competencies in a company and relationship toward effectively leadership (Sidhartha and Lusya, 2014; 2015). Structural capital (SC) or organizational capital is

the ability of the organization or company to meet the routine of the company and the structure that supports employee efforts to produce optimized intellectual performance and overall business performance, for example: Systems operations, manufacturing processes, organizational culture, management philosophy and all forms intellectual property owned by the company. Capital or customer relational capital or customer capital is a component of intellectual capital that gives real value. Relational capital is a harmonious relationship or association network owned by the company with its partners, both from the supplier and reliable quality, comes from customers loyal and satisfaction will service the company concerned, derived from the company's relationship with the government and local communities.

Nevertheless, the disclosure of intellectual capital has not been done by all companies, it is because the intellectual capital more contains intangible assets (intangible assets), causing difficulties for management, measurement and reporting. According to SFAS No. 19, intangible assets are non-monetary assets that can be identified and has no physical form and held for use in producing or delivering goods or services, leased to other parties, or for administrative purposes (IAI, 2007). There are four criteria that must be met in order for an asset can be classified as an intangible asset: (a) The asset can be identified, the implication of the asset can be sold, exchanged, or leased; (b) the company has no control over the asset; (c) the intangible asset will benefit the company in the future; (d) the acquisition cost of the asset can be measured.

Most researchers divided intellectual capital into three main elements (Sveiby, 1987) namely: HC, SC or organizational capital and relational capital. The first element of intellectual capital, the HC that is a source of innovation and development for the company. Covers human resources and includes such things as education, knowledge and competencies related to work, and other characteristics are included in the elements of the company's employees.

SC or organizational capital that a company's ability to meet the routine process of the company and its structure, which supports employee efforts to produce optimal intellectual performance and overall business performance. There are two important elements in SC, namely intellectual property and infrastructure assets. Intellectual property is protected by intellectual property laws such as patents, copyrights, and trademarks. While the infrastructure asset, an element of intellectual capital that can be created within the company or owned by companies from outside such as corporate culture, process management, information systems, networking systems. In this category, a research project element was added as part of the innovation that are or are going to be, developed by the company. While relational capital is the intellectual capital components that provide real value to the company. Relational capital is a good relationship between the company and external stakeholders that is different as customers, distribution networks, business collaboration, franchise agreements, and so on. Recognition of intellectual capital can increase in creating and sustaining a competitive advantage for the company and shareholder value (Tayles et al., 2007). Recognized intellectual capital can increase its profit company

profits are affected by innovation and knowledge-intensive services (Edvinson and Sullivan, 1996).

Mouritsen (1998) mentions that the vast intellectual capital refers to the capacity of knowledge possessed by a company. Lev and Zarowin (1999) found many studies that show that the current accounting model can not capture the key factors of the company's long term value, the intangible resources. Financial statements are considered to have failed in describing the coverage of the value of intangible assets (Lev and Zarowin, 1999), led to an increase in the asymmetry of information between the company and the user (Barth et al., 2001), and creates inefficiencies in the allocation of resources in the capital market (Li et al., 2008). Failure to recognize the full accounting on intangible assets such as human resources and customer relationship which confirms the claim that traditional financial statement has lost its relevance as an instrument of decision making (Oliveira et al., 2008). Some researchers have found a large gap between the market value and the book value disclosed because the company had failed to report value in its annual report (Mouritsen et al., 2004). Canibano et al. (2000) mentions that the proper approach used to improve the quality of financial reports is to encourage the improvement of intellectual capital information disclosure. According to Bukh (2003), some forms of intellectual capital disclosure are valuable information for investors, who can help them reduce uncertainty about future prospects and facilitate the assessment of the company's accuracy. Intellectual capital disclosure can also show better financial performance so as to provide optimal performance for the company.

## 2.2. Financial Performance

Financial performance can be defined as the work of managers in carrying out the tasks assigned to them relating to the financial management of the company. The role of management is important in controlling the performance of the company. The financial performance of the company is one of the fundamental aspects of the financial condition of companies that can be done based on the analysis of financial ratios of the company in a period. Ang (2007) stated that some financial ratios used in conducting fundamental analysis is the price earning ratio, return on investment, the current ratio, debt to equity ratio, and total assets turnover. Especially for financial institutions, in order to conduct fundamental analysis to consider capital, assets, management, earnings, liquidity (CAMEL) financial ratios, namely capital, asset quality, management, earning ability, liquidity. Based on Bank Indonesia regulation No. 9/1/PBI/2007, financial performance measurement approach can use CAMEL and market risk sensitivity. This is the officially adopted by Bank Indonesia to determine a healthy banking system. CAMEL financial ratios are financial factors used to assess the soundness of the bank by Bank Indonesia.

Financial performance is the determination of certain sizes that can measure the success of a company in generating profits. The company's performance demonstrated by its financial statements as a display state of the company during a certain period called the company's financial performance and it can be said that the financial performance is total shareholder returns. Performance measurement is the process of recording and measuring the achievement of the implementation of the activities under the direction of achieving

the mission accomplishment by the results displayed in the form of corporate profitability, the development of products, services or processes. Return on assets (ROA) focuses the company's ability to obtain earnings in the company's operations, while return on equity (ROE) only measures the return earned on an investment in the company owner of the business. ROA was used to measure the effectiveness of the company in generating profits by exploiting its assets. The greater the ROA shows that the better financial performance, due to the greater rate of return. If the ROA increased, meaning the company's profitability increased, so that the eventual impact is an increase in profitability enjoyed by shareholders.

The company's financial performance is essential for companies and individuals. The main sources of information are to evaluate the performance of the company in the past. Although the company's performance in the past was important, many managers and analysts are more concerned with what happens in the future. So that the historical financial statements can be used to predict future performance. Parties who have interests in the development of a particular company are very necessary to know the financial condition. The financial condition of a company can be known through the financial statements of the company concerned, which is composed of the balance sheet, as well as the financial statements of other companies. Financial performance is the determination of certain sizes that can measure the success of a company in generating profits. Achievements of the company shown by its financial statements as a display state of the company during a certain period called the company's financial performance. The financial performance of a company can be interpreted as future prospects, growth and good development potential for the company. Financial performance information is needed to assess potential changes in economic resources, which may be controlled in the future and to predict the production capacity of existing resources.

According to the political cost approach, the company which is the subject of politically visible and high political cost, will tend to disclose more intellectual capital (Watts and Zimmerman, 1990). Costs Political hypothesis suggests that large companies are more likely to use accounting option that reduces the profit reporting, rather than small firms (Watts and Zimmerman, 1990). While the agency theory put disclosure as a mechanism that can reduce the costs resulting from the conflict between managers and shareholders (compensation contracts) and of the conflict between the company and its creditors. Therefore, disclosure of a mechanism to control the performance of managers. As a consequence, managers are encouraged to reveal voluntary disclosure information such as intellectual capital.

Signaling approach states that a company with a high performance use financial information to send signals to the market (Spence, 1973). Fees for the bad news signals is higher than the good news, it is shown in the study Spence (1973). Therefore, managers are more motivated to disclose intellectual capital as private information voluntarily. This is due to expectations of managers that provide a good signal to the market about the company's performance will reduce information asymmetries (Oliveira et al., 2008). While the approach of legitimacy according to Guthrie et al. (2004) in Oliveira et al. (2008) is closely related to



intellectual capital reporting. Companies are more likely to report their intangibles, if they have a specific need to do so. They can not legitimize their status only through asset that is recognized as a symbol of the traditional success of the company. Stakeholder approach assumes that the company committed to report on its activities including intellectual capital disclosure to stakeholders, typically aim to maintain the balance and sustainability of the formation of value for all stakeholders (Ernst and Young, 1999). While the approach of cost and Benefit stated that the leaders have the urge to make a voluntary disclosure when the resulting benefits exceed the costs incurred. Mandatory disclosure and voluntary disclosure of intellectual capital including reducing the asymmetry of information and help repair some of the mis-evaluation of the company, helping to reduce capital costs, increasing investor demand, and reduce bid-ask spread (Oliveira et al., 2008).

### 3. HYPOTHESES

Based on the literature review and previous studies, the hypotheses and conceptual framework of this study are as follows:

- H<sub>1</sub>: High VA capital (VACA) would lead to higher financial performance.  
 H<sub>2</sub>: High VA human (VAHU) would lead to higher financial performance.  
 H<sub>3</sub>: High structural capital VA (STVA) would lead to higher financial performance.  
 H<sub>4</sub>: High intellectual capital would lead to higher financial performance.

#### 3.1. Research Method

This study uses an exploratory method, which is to create a picture of the situation or phenomenon intended to causal-predictive analysis. Due to the fairly large population and limited time and cost, then the sampling of the population studied. Based on secondary data from the Bank of Indonesia there are 205 rural banks recorded that periodically reported financial statements for the year 2011 till to 2013 on the island of Java. Sampling technique is using purposive sampling of the population. Determination of the sample is based on several criteria, namely; (1) Rural banks has listed in Bank of Indonesia from 2011-2013, (2) rural banks reported financial statements from 2011-2013, (3) meet the established criteria. Based on secondary data obtained population data as much as 205 rural banks in the island of Java, premises. From 205 rural bank for 3 years are 615 rural banks research sample.

#### 3.2. Research Variables

The research model used in this study is a VAIC<sup>TM</sup> (Pulic, 1998). This model is used to measure the VA company in terms of efficiency value intangible assets and tangible assets. Data information required in this Intellectual measurement derived from secondary data company, reported in the form of annual financial statements based on financial ratios.

The formulations in the calculation of VA intellectual capital is OUT and IN. The output (OUT) is the total sales and other revenue. Input (IN) is the burden and costs (other than personnel expenses) and the VA represent the difference between the output and the input. HC which is personnel expenses and capital employed are

the available funds (equity, net income), while SC which is a VA is reduced by HC. So the combination of the VA is considered is the ability of an organization's intellectual capital. Where the VACA plus VAHU capital and STVA.

While variable Indogen the financial performance which is a variable financial performance using indicators operational cost (OC), non-performing loan (NPL), ROA, ROE, capital adequacy ratio (CAR), loan to deposit ratio (LDR).

#### 3.3. Data Analysis

This analysis is used to describe data and research results. The data processing is using Eviews 7 software and Microsoft Excel for Windows 2007. Operational variables in this study include exogenous variables namely; intellectual capital consisting of VACA coefficient, VAHU capital and SC coefficient (STVA) and endogenous variables namely; financial performance, which includes OC, NPL, ROA, ROE, CAR, LDR. Data analysis using cross section pooled data form 205 rural bank from 2011 to 2013.

While the instrument tested the classic test, the data were analyzed by multiple regression analysis of independent variables toward the dependent variables. Previously, the analysis was first carried out by conducting tests of normality, heteroscedasticity, and multicollinearity. Testing for normality was by using the histogram normality test and by looking at the value of probability >0.05. Than, for testing multicollinearity, it was done by looking at the value of corellation between variable <0.8. In addition, heteroscedasticity test using actual, fitted, residual graph.

Intellectual capital model selection based on the test chow test, hausman test and lagrange test. Based on the test results, the model chosen is a fixed effect model models.

The result of fixed effect model as follows:

Fixed effect				
Dependent variable: PERFORMANCE				
Method: Panel least squares				
Sample: 2011 2013				
Periods included: 3				
Cross-sections included: 205				
Total panel (balanced) observations: 615				
Variable	Coefficient	SE	t-statistic	P
C	156.5486	4.165564	37.58161	0.0000
VACA	48.00253	10.63404	4.514044	0.0000
VAHU	2.685325	0.977782	2.746343	0.0063
STVA	42.23556	10.18228	4.147947	0.0000
Effects specification				
Cross-section fixed (dummy variables)				
R-squared	0.630816	Mean dependent variable	190.2127	
Adjusted R <sup>2</sup>	0.443049	SD dependent variable	33.40824	
SE of regression	24.93228	Akaike info criterion	9.533818	
Sum squared resid	252998.8	Schwarz criterion	11.02926	
Log likelihood	-2723.649	Hannan-Quinn criterion	10.11532	
F-statistic	3.359573	Durbin-Watson statistics	2.232692	
P (F-statistic)	0.000000			

SE: Standard error, SD: Standard deviation, VACA: Value added capital, VAHU: Value added human, STVA: Structural capital value added

From the output above, can be written equation as follow:

$$\text{PERFORMANCE} = 156.548599809 + 48.0025346245\text{VACA} + 2.68532472187\text{VAHU} + 42.2355573875\text{STVA}$$

Techniques of data analysis using Eviews is to investigate the effect of intellectual capital on financial performance. The adjusted R<sup>2</sup> as shown in the Table 1. Based on the above results, it can be seen that the data processing hypothesis proposed in this study proved to be significant. This is evidenced by the value of T is bigger than t table with a significance level of 5%.

### 4. RESULTS

Based on the calculation of data with Microsoft Exel software, result of intellectual capital and financial performance are shown by Figures 1 and 2.

**Table 1: Result of hypothesis testing**

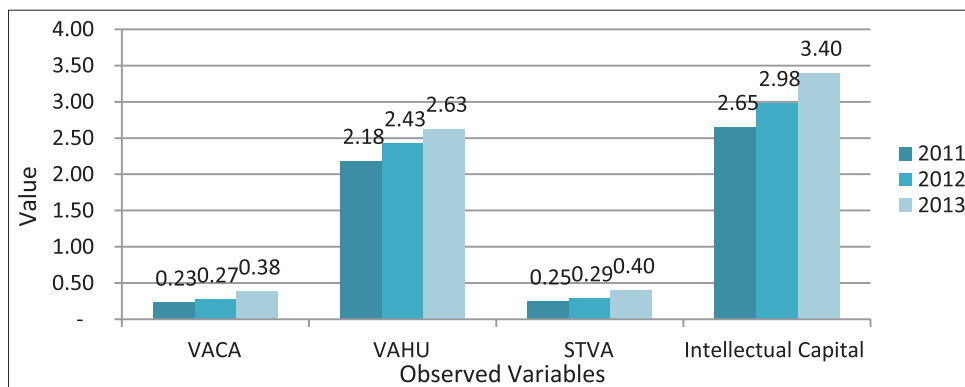
Variables	Coefficients	t value	Significant value	Description
VACA→Financial performance	48.00253	4.165564	0.000	Significant
VAHU→Financial performance	2.685325	2.746343	0.006	Significant
STVA→Financial performance	42.23556	4.147947	0.000	Significant
R <sup>2</sup>	0.630			
Adjusted R <sup>2</sup>	0.443			
F value	3.359			
Significant value	0.000			Significant

VACA: Value added capital, VAHU: Value added human capital, STVA: Structural capital value added

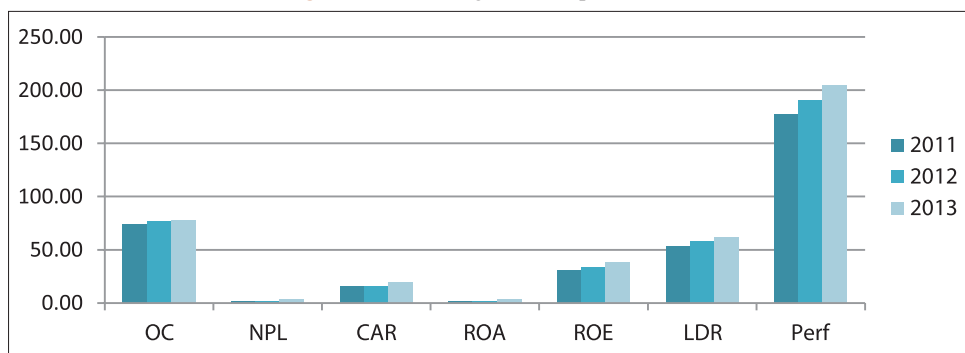
From the results of calculations and decisions concerning the research hypothesis, it can be concluded that;

1. VACA toward financial performance, VACA having significant results with a value T value amounting to 4.648. These results contrast with research Ahangar (2011) which states that VACA significant effect on the company’s financial performance in Iran. However Gogajeh et al. (2015) proved that VACA that there is a positive and significant correlation toward intellectual capital’s efficiency and firms’ performance on 111 firms of Tehran stock exchange in Iran.
2. VAHU toward financial performance, VAHU has no significant results with T value equal to the value of 0.070. Results Q value is smaller than the significance level of 0.5%, so that VAHU variable is not significant to the financial performance. The results support the research conducted by Chang and Hsieh (2011) which states that the variable VAHU no significant effect on intellectual capital at 367 semiconductor companies listed on the TSE market during 2000-2008. But research conducted Lipunga (2014) showed opposite where VAHU significantly influence the intellectual capital of the commercial banking sector of Malawi.
3. STVA toward financial performance, STVA has no significant results with a value equal to the value T 0.791. Results Q value is smaller than the significance level of 0.5%, so the STVA variable is not significant to the financial performance. The results support the research conducted by Mosavi et al. (2012) which states that the structure does not significantly influence the financial performance of 80 listed companies in Tehran stock exchange (TEI) in Iran. Similarly, the research done by

**Figure 1: Measuring of intellectual capital**



**Figure 2: Measuring financial performance**



Rahman and Ahmed (2012) who conducted a study on 30 companies in Bangladesh proves that STVA no significant effect on intellectual capital.

4. Intellectual capital financial performance toward significant effect simultaneously with the significant value of 0.0000. Despite this perceived value variables have results adjusted  $R^2$  of 0.053 or 5.3%. These results are consistent with research Shiu (2006) which states that the VA intellectual capital a significant effect on ROA in technology company in Taiwan and Pulic (2004) which states that intangible assets and tangible assets may increase the value of the company. The same thing is also demonstrated by Bembi et al. (2015) that significantly influence the intellectual capital value of the company on the banking sector in Indonesia which are listed in the Indonesia stock exchange. Further research conducted by Gogajeh et al. (2015) proved that Intellectual capital that there is a positive and significant correlation between intellectual capital's efficiency and firms' performance on 111 firms of Tehran stock exchange in Iran. A research by Muhammad and Ismail (2009) found that intellectual capital has significant and positive relationships with the company's performance in the Malaysian financial sectors with 18 companies for the years 2007.

## 5. CONCLUSION

The results showed that the VACA variables significantly influence toward financial performance and VAHU variables and variable STVA significant effect also on toward financial performance. The overall test results produced an adjusted  $R^2$  indicate that the intellectual capital variables significantly influence toward financial performance when viewed from the probability value. The VA by the company that owned one of which is generated by the efficiency of HC. That is, the banking company in Indonesia has succeeded in utilizing and maximizing intellectual capital to structure asset in creating value for the company in the rural banking sector. In this context, the employee has not been successfully deployed and put themselves in a position as stakeholders of the company, so they have not been able to maximize the intellectual capital to create value for the company. The focus of financial performance conducted by the rural banking in Indonesia is more emphasis on aspects that asset value compared with the tangible elements of intangible assets.

This study contributes to the theoretical development of management science, particularly intellectual capital of financial performance to improve business performance, both directly or indirectly, considering the intangibles resources and tangibles resources of the firm.

In this research, there are still some limitations with respect to research toward intellectual capital for financial performance. There needs to be further study to include some variables and different concepts that are supposed to influence the financial performance toward using control variables such as time of business, corporate commissioner so that it can generated a picture more comprehensive.

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