



The Influence of Intellectual Capital on Banking Financial Performance

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Abstract: *This study aims to examine the influence of Intellectual Capital on financial performance. Based on the model proposed by Pulic, the measurement of intellectual capital can use Value Added Intellectual Capital (VAICTM) consisting of Human Capital Efficiency (HCE), Capital Employed Efficiency (CEE) and Structural Capital Efficiency (SCE). This study uses 2 research variables, namely the dependent variable consisting of Return on Assets (ROA) as an indicator of the company's financial performance and the independent variable consisting of HCE, CEE, SCE and VAIC. The analysis data in this study used 2 types of analysis, namely the VAIC simple linear regression test and multiple linear regression to test the VAIC component. The results showed that CEE and HCE had a positive and significant effect on the company's financial performance, and VAIC had a positive and significant effect on the company's financial performance. Meanwhile, SCE has no effect on the company's financial performance.*

Keywords: *Capital employed efficiency; Human capital efficiency; Return on assets; Structural capital efficiency; Value added intellectual capital.*

1. Introduction

The Covid-19 pandemic and the worldwide crisis both significantly impacted banks' financial performance. Economic recovery will be slower and banking operations will be disrupted if the Covid-19 outbreak is protracted as a result of improper handling. Credit restructuring is also one of the programs that banks have been impacted for throughout the economic recovery. Based on OJK data, as many as 101 banks have provided restructuring to 7.55 million debtors with a credit value of 934.8 trillion IDR. Of this amount, as many as 5.85 million debtors are MSMEs whose value reaches 371.1 trillion IDR.

This situation necessitates innovation in banking practices to address performance issues brought on by the pandemic. Intellectual capital is a knowledge asset that is anticipated to solve current issues. An attractive topic of research is the use of intellectual capital as a tool to evaluate a company's financial success. The banking sector is one of those that makes the highest use of intellectual capital. According to [Ahuja and Ahuja \(2012\)](#) bank's ability to deliver high-quality services depends on its investment in Intellectual Capital-related things like its human resources, customer relationships, administrative and computer systems, and simulation models. They claim that efficient use of Intellectual Capital is more important to success in banking than any other industry.

In addition to the advancement of science and the findings of earlier study, it was discovered that intellectual capital has a favorable effect on the business. Therefore, study

on and attention to intellectual capital among businesses are growing. The Value Added Intellectual Capital (VAICTM) technique, created by Isanzu, is used in this study to assess the performance of intellectual capital in Indonesia's banking industry. Capital Employed Efficiency (CEE), Human Capital Efficiency (HCE), and Structural Capital Efficiency (SCE) are the three primary components of Isanzu (2015) VAICTM. Return on Assets was employed in this study to measure banking performance. ROA is used in financial performance because it accurately depicts a company's earnings.

This study has differences with previous studies, namely first, differences in population and sample. Research conducted by Saragih (2017) and Astari & Darsono (2020) selected populations and samples on companies in the manufacturing industry listed on the Indonesia Stock Exchange, while in this study, researchers chose the banking sector listed on the Indonesia Stock Exchange. The focus of choosing bank sub-sectors as research objects is because banks include the service sector, where customer service is highly dependent on human capital intelligence (Arifin, 2016). The second difference is in the year of study. The previous study used 2014-2018, while this study used 2015-2021.

2. Literature Review & Hypotheses development

2.1. Stakeholder Theory

The aim of stakeholder theory, a strategic management idea, is to improve ties with outside groups and create competitive advantage. The relationship between intellectual capital and corporate performance is explained using the stakeholder theory (Yulianto & Lindawati, 2020). To fully understand the connection between VAICTM and firm financial performance, stakeholder theory must be analyzed from two different perspectives. The first is in terms of managerial and ethical considerations. According to this ethical stance, managers must manage it successfully in order to build corporate value, and the business must treat all stakeholders equitably. While from a managerial point of view, stakeholder theory asserts that to influence company management, stakeholder power must be viewed as a function of stakeholder control over the resources needed by the company. Stakeholder theory aims to help company managers to utilize and manage optimally all the potential claimed by the organization, both workers, physical assets, and structural capital. Companies will be able to boost their financial performance and provide benefits to stakeholders if managers are able to manage all their resources effectively.

2.2. Financial Performance

Financial performance is an effort made by a company to measure and assess the success achieved in generating profits, so that the company can see the growth that has been achieved by the company. By measuring financial performance, it can be used as a benchmark for the success of a company in achieving its goals (Puspitosasi, 2016). Several benchmarks or measurements can be used to evaluate financial performance, for example, ratios or indices that connect two financial data are common measures. Liquidity, solvency, and profitability ratios are just some of the financial ratios that can be used to evaluate a company's performance. Return on Assets, a type of financial ratio that shows how effectively a

company uses its total assets, was used in the study. Companies that can optimize the use of their assets will ultimately have a good impact on their financial performance.

2.3. Intellectual capital

An intangible resource related to science and technology known as intellectual capital is beneficial for enhancing competitiveness and can improve business performance. If firms can effectively manage their intellectual capital, they can compete, offer value, boost performance, and gain a competitive advantage. It can boost shareholder trust in the firm and have an effect on growing the added value of a company when the company can increase the usage and introduction of intellectual capital. Referring to the Value Added Intellectual Capital (VAICTM) model used in [Isanzu \(2015\)](#) to calculate intellectual capital. An Intellectual Capital indicator called VAICTM emphasizes the company's overall effectiveness. Three components make up the Value Added Intellectual Capital (VAICTM) model: Capital Employed Efficiency (CEE), Human Capital Efficiency (HCE) and Structural Capital Efficiency (SCE).

2.4. Capital Employed Efficiency (CEE)

Capital Employed Efficiency (CEE) is a comparison between Value Added and capital used Capital Employed. This Capital Employed shows a harmonious relationship between the company and its partners, including customers who are satisfied with the services provided by the company, quality suppliers, government, and the communities in which the company operates ([Welly et al., 2021](#)). Based on the concept of Stakeholder Theory, stakeholders will trust companies that can manage physical capital used to create high profitability. Because high profitability will provide benefits for stakeholders. Research by [Kartika & Hatane \(2013\)](#) shows that financial performance proxied with ROA is influenced by Capital Employed Efficiency (CEE). Research by [Astari & Darsono \(2020\)](#) demonstrates that Capital Employed Efficiency (CEE) has a positive effect on company performance as measured by ROA. This demonstrates that Capital Employed Efficiency (CEE) has a significant impact on asset returns. The following is the study's hypothesis using the Value Added Intellectual Capital (VAICTM) methodology to measure corporate intellectual capital:

H₁: Capital Employed Efficiency (CEE) has a positive effect on Financial Performance

2.5. Human Capital Efficiency (HCE)

Human Capital Efficiency (HCE) describes the added value generated by capital used for labor. The success of this company is due to its people, specifically the capacity for optimal performance, innovation, expertise, and the ability to improve financial performance. In accordance with the Stakeholder theory, stakeholders act as controllers in human resource management, because stakeholders will be affected by company decisions. [Akbar & Ardiyanto \(2020\)](#) conducted a study to identify whether the Intellectual Capital component has an impact on financial performance as measured by ROA and the impact of Intellectual Capital on company performance. The findings show that financial performance is positively correlated with Human Capital Efficiency (HCE). Additionally, [Listianawati and Sampurno \(2021\)](#) examined looked at the influence of intellectual capital on the efficiency of industrial

firms listed on the IDX. The financial performance of a company is assessed using ROA. The findings indicate that Human Capital Efficiency (HCE), as measured by ROA, has the biggest impact on financial performance. This demonstrates how raising employee productivity in asset management can increase the return on a variety of corporate assets. The following is the study's hypothesis using the Value Added Intellectual Capital (VAICTM) methodology to measure corporate intellectual capital:

H₂: Human Capital Efficiency (HCE) has a positive effect on financial performance

2.6. Structural Capital Efficiency (SCE)

According to [Tan et al. \(2007\)](#), structural capital efficiency (SCE) calculates how much structural capital is required to produce one rupiah of value added and demonstrates how effective structural capital is in adding value. Companies must be able to sustain relationships amongst staff members so that they may share knowledge and grow together in order to increase structural capital efficiency (SCE). Employee knowledge and information sharing may become simpler as a result within the company. The ease of sharing knowledge and information can make a company's performance more optimal and will have an impact on its financial performance. A company's financial performance will increase if its structural capital is managed effectively.

[Astari & Darsono \(2020\)](#) study examined a sample of manufacturing firms that had been listed on the Indonesia Stock Exchange between 2016 and 2018. The findings demonstrate that structural capital efficiency (SCE), as measured by ROA, has a favorable impact on financial performance. The financial performance as evaluated by ROA is positively impacted by structural capital efficiency (SCE), in accordance with Akbar and Ardiyanto's research from 2020. This demonstrates how structural capital influences ROA growth. The following is the study's hypothesis using the Value Added Intellectual Capital (VAICTM) methodology to measure corporate intellectual capital:

H₃: Structural capital efficiency (SCE) has a positive effect on financial performance

2.7. Value Added Intellectual Capital (VAICTM)

According to stakeholder theory, a manager has succeeded in upholding ethical standards if he is successful in making the best use of corporate resources, particularly when it comes to value creation initiatives. According to [Febriany \(2020\)](#), managing all of the company's resource capacities—including its personnel (human capital), physical assets (physical capital), and structural capital is how value is created in this situation. By managing its human capital knowledge, skills, and expertise, supported by structural capital that can ease the firm's operational activities, the assets of the organization will rise. Maximum asset management can boost profits from a variety of firm assets.

The results of research conducted by [Listianawati & Sampurno \(2021\)](#) prove that Intellectual Capital has a positive influence on financial performance calculated using ROA. Research on the connection between intellectual capital and the financial performance of 31 banking companies in Tanzania from 2010 to 2013 was done by [Isanzu \(2015\)](#). The results show a strong relationship between financial performance and intellectual capital. This

demonstrates the perception that intellectual capital can help the company become more profitable. The following is the study's hypothesis using the Value Added Intellectual Capital (VAICTM) methodology to measure corporate intellectual capital:

H₄: Value Added Intellectual Capital (VAICTM) has a positive effect on financial Performance

3. Method

3.1. Population and Sample

The method used in this study is quantitative research. The Indonesia Stock Exchange official website (www.idx.co.id) was used to acquire the data for this study. The population of this study consists of 40 banking businesses that were listed on the Indonesia Stock Exchange between 2015 and 2021. The sampling method used is the purposive sampling method which aims to obtain samples with the following criteria:

- a. Banking sector companies that have been listed on the IDX for the period 2015-2021.
- b. Banking companies that had positive total equity in 2015-2021.
- c. Banking companies that have positive profits in 2015-2021.
- d. Banking companies that present complete financial statements from 2015-2021.

From these criteria, a total of 133 (one hundred thirty-three) data were obtained which were used as research samples.

3.2. Variable Definition and Operationalization

The dependent variable is a variable that is influenced by other factors, according to [Ramadhan & Kurnia \(2017\)](#). Financial performance serves as the study's dependent variable. Financial performance in this study is calculated by return on assets. According to [Isanzu \(2015\)](#), the formula for calculating return on assets is as follows:

$$ROA = \frac{\text{Net Profit}}{\text{Total Assets}}$$

The independent variable in this study is intellectual capital. Intellectual capital is calculated based on the added value created by employed, human capital, and structural capital. These three combinations are called Value Added Intellectual Capital (VAICTM) developed by [Pulic, \(1997, 1998, 2001, 2002a, 2002b, 2004\)](#) in [Isanzu \(2015\)](#). Value Added Intellectual Capital (VAICTM) method consisting of Capital Employed Efficiency (CEE), Human Capital Efficiency (HCE), and Structural Capital Efficiency (SCE). Before calculating the three components, the first stage of calculating VAIC is to know in advance how big the VA is, because VA is the basis of the three components.

a. Calculating Value Added

$$VA = OUT - IN$$

Explanation:

VA : Value Added (difference between output and input)

OUT : interest income and other amounts of income

IN : expenses (interest expenses and operating expenses) and other expenses

b. Calculating Capital Employed Efficiency

$$CEE = VA/CE$$

Explanation:

CEE : Capital Employed Efficiency

VA : Value Added

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

c. Calculating Human Capital Efficiency

$$HCE = VA/HC$$

Explanation:

HCE : Human Capital Efficiency

VA : Value Added

HC : Human Capital (employee burden consists of salary and benefits)

d. Calculating Structural Capital Efficiency

$$SCE = SC/VA$$

Explanation:

SCE : Structural Capital Efficiency

SC : Structural Capital (VA – HC)

VA : Value Added

e. Calculating Value Added Intellectual Capital

$$VAIC = CEE + HCE + SCE$$

4. Result and Discussion

Descriptive statistics describe the minimum value, maximum value, mean value, and standard deviation value of the independent and dependent variables. Table 1 is the descriptive statistical test results of each variable.

Table 1. Descriptive Statistics

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
CEE	133	0.0515	0.4884	0.2071	0.0743
HCE	133	0.8793	4.7373	2.2069	0.7180
SCE	133	-0.1373	1.4362	0.5025	0.1929
VAIC	133	0.8376	5.8485	2.9165	0.9185
ROA	133	0.0002	0.0325	0.0141	0.0080

The aim of regression analysis is to prove the correlation between the independent and dependent variables. The regression model in this study is multiple regression analysis and simple linear regression. Multiple regression analysis used to determine the effect of CEE (X1), HCE (X2), and SCE (X3) on the company's financial performance (Y). While simple linear regression is used to determine how the effect of VAIC (X4) on the financial performance of the company's company (Y). Table 2 & 3 are the test results of multiple regression analysis and simple linear regression.

Table 2. Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	-0.007	0.002	
CEE	0.020	0.007	0.183
HCE	0.007	0.001	0.636
SCE	0.002	0.004	0.056

Table 3. Simple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	-0.006	0.001	
VAIC	0.007	0.000	0.771

Table 4. Hypothesis Testing

Variable	beta	t	P value	Result
Capital Employed Efficiency	0.183	2.934	0.004**	H ₁ : Accepted
Human Capital Efficiency	0.636	6.557	0.000**	H ₂ : Accepted
Structural Capital Efficiency	0.056	0.563	0.575	H ₃ : Rejected
Value Added Intellectual Capital	0.771	13.853	0.000**	H ₄ : Accepted
F value	66.408		0.000**	
Adj. R ²	0.607			

**Sig < 1%

Table 4 shows that Capital Employed Efficiency (CEE) has an effect on financial performance. The Return on Assets (ROA) of a corporation will rise if capital employed efficiency (CEE) is used effectively and efficiently. The research demonstrates that the capital used is the value of the assets that help the business generate revenue. The findings of this study are consistent with studies by [Isanzu \(2015\)](#) and [Aprilyani et al. \(2020\)](#), which found that capital employed efficiency (CEE) has a favorable impact on financial performance as measured by ROA. The findings of this study are also backed by the stakeholder theory, which contends that customers will have faith in businesses that can effectively manage the physical capital required to generate large profits. Considering that high profitability can help stakeholders.

Table 4 shows that Human Capital Efficiency (HCE) affects financial performance. Effective and efficient management of human capital efficiency (HCE) can influence the company's financial success. Investors may invest money when a firm is performing well financially so that the management can get a high rate of return. The findings of this study are consistent with those of [Isanzu \(2015\)](#) and [Simarmata & Subowo \(2016\)](#), who found that Human Capital Efficiency (HCE) affects a company's financial performance as measured by ROA. The results of this study are also consistent with the stakeholder theory, which contends that because stakeholders will be impacted by business actions, stakeholders have a controlling influence over human resource management. The improvement of financial performance will be impacted by human resources that have the collective skills to produce the finest solutions based on their knowledge and can compete with competitors.

Table 4 shows that Structural Capital Efficiency (SCE) has no effect on financial performance. In value creation processes, structural capital does not serve as an independent benchmark like human capital does. This implies that the contribution of structural capital to value creation decreases as human capital's contribution to value creation increases. Structural Capital Efficiency (SCE) in the financial business, such as the banking sector, tends not to have an impact on financial performance, according to research from diverse industries and nations. In other industries, structural capital efficiency (SCE) has a substantial impact on financial performance. Such as research conducted by [Xu & Li \(2022\)](#) in the manufacturing sector in China, and [Saragih \(2017\)](#) in the manufacturing sector in Indonesia. This demonstrates that banks in Indonesia still face obstacles when it comes to adopting and creating novel ideas pertaining to systems and practices that might promote innovation, such as practices, infrastructure, information systems, and organizational culture. The findings of this study are inconsistent with stakeholder theory, which contends that auxiliary variables are required to make a company stronger, as evidenced by both its tangible and intangible assets, in order to improve stakeholder trust in the organization. However, the results of this study are in line with research conducted by [Isanzu \(2015\)](#) and [Aprilyani et al. \(2020\)](#). The results showed that Structural Capital Efficiency (SCE) did not affect the company's financial performance as proxied by Return on Assets.

Table 4 shows that Value Added Intellectual Capital (VAICTM) has an effect on financial performance. This shows that increasing corporate profitability is seen to be significantly influenced by intellectual capital. The findings of this study are in line with the research of [Subowo & Simarmata \(2016\)](#) which states that Value Added Intellectual Capital (VAICTM) has a positive and significant influence on the company's financial performance proxied with ROA. According to stakeholder theory, a manager has satisfied ethical requirements if he can manage corporate resources effectively, especially while doing so in an effort to create value.

5. Conclusion

The findings demonstrated that Value Added Intellectual Capital, a proxy for Intellectual Capital, had a positive effect on the company's financial performance. The components of Intellectual Capital, namely Capital Employed Efficiency and Human Capital Efficiency,

affect the company's financial performance. While Structural Capital Efficiency does not affect the company's financial performance. From the results of this study there are several limitations, including the unavailability of complete data from all populations that have been determined in this study so that not all populations can be used as samples in this study. Second, the tendency of this study to only focus on one indicator of the company's financial performance, namely ROA. So that the measurement of the company's financial performance is not able to describe the company's overall financial condition.

Based on the limitations that have been conveyed above, the next researcher provides suggestions to use data from the financial statements of banking companies in addition to data that has been published on the IDX. The usage of other financial performance indicators like Gross Profit Margin and Net Profit Margin is also advocated for researchers. By characterizing the company's capacity to produce net profit from operating income, Ramang et al. (2019) states that gross profit margin and net profit margin can be used to assess the overall financial performance of organizations.

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