

The Influence of Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) on Return on Assets (ROA) at Indonesian Government Banks

Caroline Eka Putri Oktaviani^{1*}, Ita Janah², Ario Purdianto³
Universitas Swadaya Gunung Jati Cirebon

Corresponding Author: Caroline Eka Putri: caroline.oktaviani10@gmail.com

ARTICLE INFO

Keywords: Intellectual Capital, ROA, Government Bank, Financial Management

Received : 20, April

Revised : 15, May

Accepted: 20, June

©2025 Oktaviani, Janah, Purdianto:

This is an open-access article distributed under the terms of the

[Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

In addition to being a supporting component, knowledge also plays a decisive role in the development of a company with a competitive edge. A descriptive approach and a quantitative method are the research methodologies employed. All banks owned by the Indonesian government between 2019 and 2023 made up the study's population. Through assessment, the sample was employed. With a significant value (α) of 0.076 and a t-count value of 1.825, the study's findings were found to be greater than 0.05 ($0.076 > 0.05$). The study's partial results revealed a t-count value of 2.944 and a significance value (α) of 0.006, meaning that 0.006 is less than 0.05.

INTRODUCTION

Science not only serves as a supporting aspect but also plays a determining role in the advancement of businesses with competitive advantages (Vidia et al., 2023). The application of scientific knowledge in business practices enables companies to innovate, improve operational efficiency, and compete effectively in global markets. As is well known, knowledge-based businesses largely depend on science and technology to generate profits. A knowledge-based business is one that relies on technology and the expertise of human resources to produce superior products or services. Companies that adopt a knowledge-based business approach create systems to manage knowledge as a means to generate income. Through the implementation of knowledge-based business, the process of corporate value creation transforms (Rena Vidia Hodijah, 2022). One of the approaches that can be used to measure and evaluate the performance of knowledge assets is intellectual capital.

Indonesia's economic progress has driven business growth. This can be seen in the increasing number of new businesses emerging and the rising profits of existing companies. Following economic shifts and the implementation of knowledge management, future business development will be significantly influenced by the transformation of knowledge and the value creation from existing capital. At present, the term *knowledge-based company* is increasingly used in the business world. This term refers to companies that rely on the management of knowledge capital as the key to long-term survival and development (Febrianti & Adisetiawan, 2024). The development of intellectual capital in Indonesia has accelerated since the enactment of PSAK No. 19 (revised 2015), which stipulates that intangible assets (including intellectual capital) are identifiable non-monetary assets without physical form. The main characteristics of intangible assets are that they are identifiable, are likely to provide future economic benefits, have reliably measurable acquisition costs, and do not have a physical form. Entities are also allowed to use the cost model when recording such assets. Since intellectual capital falls under the category of intangible assets, it is highly relevant to this study.

Intellectual Capital (IC) plays an essential role in the overall performance and sustainability of companies. To enhance competitiveness, IC provides added value through effective company management and the company's ability to motivate its employees. This way, employee potential can be optimized, enabling continuous increases in company value both in the present and in the future (Sukmana & Fitria, 2019). The Value Added Intellectual Coefficient (VAIC) is measured through two main components: Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA). These two instruments are used to assess how efficiently a company manages its intellectual capital, measured by the added value generated from physical capital (VACA) and structural capital (STVA).

According to Pulic (1998), the main goal of a knowledge-based economy is to create added value, and to achieve this, appropriate measurement of both physical capital and intellectual potential is required.

One of the main cornerstones of the Indonesian economy is the banking sector. Businesses that use knowledge-based business methods include those in this industry. The survival and prosperity of banking organizations are significantly influenced by intellectual capital, and workers in this industry typically possess a higher level of intellectual homogeneity than those in other industries. The goal of banking in Indonesia is to promote national development by enhancing equity, economic progress, and national stability for the benefit of the larger population, as stated in Republic of Indonesia Law No. 7 of 1992 concerning Banking. The CAMELS system, which has five essential elements, is one of the instruments used to evaluate a bank's soundness. Return on Assets (ROA), a metric used to assess a bank's financial performance, is one of the key indicators in the CAMELS approach. ROA demonstrates a company's ability to create returns from its business operations by demonstrating how well it makes money off of its assets (Dianty, 2019). Return on assets (ROA), which is a measure of profitability, can reveal how well-positioned a business is to continue operating or expand in the future (Luthfiyah Salsabila, 2021).

Profitability is frequently used as a criterion to evaluate a company's performance. Profitability is one metric used to assess financial performance. Return on assets (ROA) is the main metric used in the banking sector to gauge this profitability. The financial performance of a bank can also be predicted using ROA. Nurhayati (2009) asserts that a drop in banking performance may result in a reduction in public confidence. To ascertain how well their assets are being used to produce profits, state-owned banks must thus keep an eye on ROA. According to Wijaya (2019), the net profit obtained increases with the asset return rate.

Conversely, if asset returns are low, then the net profit generated from each rupiah invested in the assets will also decrease.

In relation to the explanation above, the condition of Indonesian state-owned banks in terms of profit and total assets from 2019 to 2023, as preliminary data for this research, is shown in the following table:

Table 1. Net Profit and Total Assets in Indonesian Government Commercial Banks for the Period 2019-2023

NO.	Bank Name	Year	Net Profit	Asset
1.	Bank Negara Indonesia (BNI)	2019	Rp. 15.508.583	Rp. 845.605.208
		2020	Rp. 3.321.442	Rp. 891.337.425
		2021	Rp. 10.977.051	Rp. 964.837.692
		2022	Rp. 18.481.780	Rp. 1.029.836.868
		2023	Rp. 21.106.228	Rp. 1.086.663.986
	TOTAL		Rp. 69.395.084	Rp. 4.818.281.179
2.	Bank Rakyat Indonesia (BRI)	2019	Rp. 34.413.825	Rp. 1.416.758.840
		2020	Rp. 18.660.393	Rp. 1.610.065.344
		2021	Rp. 30.755.766	Rp. 1.678.097.734
		2022	Rp. 51.408.207	Rp. 1.865.639.010
		2023	Rp. 60.425.048	Rp. 1.965.007.030
	TOTAL		Rp. 195.663.239	Rp. 8.535.567.958
3.	Bank Tabungan Negara (BTN)	2019	Rp. 209.263	Rp. 311.776.828
		2020	Rp. 1.602.358	Rp. 361.208.406
		2021	Rp. 2.376.227	Rp. 371.868.311
		2022	Rp. 3.045.073	Rp. 402.148.312
		2023	Rp. 3.500.988	Rp. 438.749.736
	TOTAL		Rp. 10.733.909	Rp. 1.885.751.593
4.	Bank Mandiri	2019	Rp. 28.455.592	Rp. 1.411.244.042
		2020	Rp. 18.398.928	Rp. 1.541.964.567
		2021	Rp. 30.551.097	Rp. 1.725.611.128
		2022	Rp. 44.952.368	Rp. 1.992.544.687
		2023	Rp. 60.051.870	Rp. 2.174.219.449
	TOTAL		Rp. 182.409.855	Rp. 8.845.583.873
5.		2019	Rp. 1.564.492	Rp. 123.536.474

	Bank Jabar Banten (BJB)	2020	Rp. 1.689.996	Rp. 140.934.002
		2021	Rp. 2.018.654	Rp. 158.356.097
		2022	Rp. 1.782.022	Rp. 181.241.291
		2023	Rp. 1.806.591	Rp. 188.295.488
	TOTAL		Rp. 8.861.755	Rp. 792.363.372
6.	Bank Jateng	2019	Rp. 1.053.658	Rp. 71.860.453
		2020	Rp. 1.122.228	Rp. 73.106.133
		2021	Rp. 1.328.547	Rp. 80.348.338
		2022	Rp. 1.829.789	Rp. 84.493.779
		2023	Rp. 1.586.848	Rp. 88.453.611
	TOTAL		Rp. 6.921.070	Rp. 398.262.359
7.	Bank Jatim	2019	Rp. 1.376.605	Rp. 76.715.290
		2020	Rp. 1.488.962	Rp. 83.619.452
		2021	Rp. 1.523.070	Rp. 100.723.330
		2022	Rp. 1.542.824	Rp. 103.031.367
		2023	Rp. 1.470.105	Rp. 103.854.773
	TOTAL		Rp. 7.401.566	Rp. 467.944.212
8.	Bank Maluku	2019	Rp. 151.288.33	Rp. 7.861.601
		2020	Rp. 185.065.61	Rp. 8.409.164
		2021	Rp. 210.614.32	Rp. 8.949.078
		2022	Rp. 197.167.26	Rp. 10.263.982
		2023	Rp. 128.126.58	Rp. 9.328.372
	TOTAL		Rp. 872.262.1	Rp. 44.812.197

Based on the table above, it shows that all government commercial banks have published financial reports from 2019-2023 and show that none of them experienced losses. These results illustrate that the research data used as part of the background can be used to support this research.

According to data released by the Financial Services Authority (OJK), there was a decline in the ROA of commercial banks from 2.69% to 2.56% on an annual basis (YoY) as of May 2024. This decline shows the challenges faced by the banking sector in maintaining profitability amid economic dynamics and changes in interest rates. One of them is at Bank BTN in 2023, BTN's ROA fell from 0.9% to 0.8% due to pressure on the net interest margin (NIM), especially the increase in the cost of funds. BTN's improvement efforts seek to reduce the cost of funds through various digital banking initiatives and increase business in the consumer funding area. The target is to reduce the cost of funds to 3.8% by the end of 2023. BTN is also trying to keep ROA below 1.0%. This data is also used as part of the Background that can be used to support this research.

As per Rena Vidia Hodijah et al. (2023), "Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) have an effect on Return on Assets (ROA)." This means that the financial performance of an Islamic bank will be impacted if a bank manages its capital employed, human capital, and structural capital effectively. In contrast, Ghadah, Mufidah, et al. (2024) state that "the structural capital coefficient and value added intellectual coefficient do not have a significant effect on price book value in the same period and object, while the variables of value added capital employed and return on assets affect the price book value partially."

The researcher is interested in carrying out a study with the same title and variables, but at a different location and time, based on the background information and conclusions from earlier research. Thus, "The Effect of Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) on Return on Assets (ROA) in Indonesian State-Owned Banks" is the title that the researcher has chosen.

LITERATURE REVIEW

Capital

The capital element evaluates how well a bank's capital supports its many needs. Since the bank's capital evaluation is predicated on its duty to meet the set minimum capital requirements, this factor is related to the level of solvency (Wufron2, 2019). The solvency level is crucial for a number of reasons, including figuring out how well the bank can withstand unforeseen losses, figuring out how much money is needed to finance its operations, figuring out how much of the bank's wealth is owned by shareholders, and figuring out how much capital the bank has. Management can effectively run operations in line with shareholder expectations thanks to this knowledge (Mieke Yustia Ayu Ratna Sari, 2020).

Intellectual Capital

Informational and knowledge-based resources make up intellectual capital, an intangible asset that helps businesses become more competitive and operate better (Segoro, 2019). Financial statements do not now formally contain intellectual capital. After the recognition of intangible assets was governed by paragraph 9 of the Statement of Financial Accounting Standards (PSAK) No. 20 of 2000, the idea of intellectual capital started to take shape. However, it has been acknowledged that intellectual expertise is a crucial component in propelling growth and giving businesses a sustained competitive edge (Wulan Dwi Astuty, 2024).

Intellectual Capital is an intangible asset consisting of informational and knowledge-based resources that contribute to enhancing competitiveness and company performance (Segoro, 2019). To date, intellectual capital has not been formally included in financial statements. The concept of intellectual capital began to develop after the recognition of intangible assets was regulated in paragraph 9 of the Statement of Financial Accounting Standards (PSAK) No. 20 of 2000. Nevertheless, intellectual knowledge has been recognized as a key factor in driving development and achieving sustainable competitive advantage for companies (Wulan Dwi Astuty, 2024).

VAIC™ is an instrument used to measure the performance of a company's Intellectual Capital, consisting of:

Value Added Capital Employed (VACA): This component reflects the company's ability to manage its physical capital; when handled properly, financial performance can improve. VACA is determined by how well the company uses its capital for each unit of value added it can generate (Azahra & Gustyana, 2020).

Structural Capital Value Added (STVA): The final component, STVA, reflects the ability of structural capital to contribute to value creation. According to Azahra and Gustyana (2020), structural capital represents the infrastructure that supports employee productivity—such as databases, software, patents, and trademarks—and includes organizational infrastructure, routines, procedures, and culture. Afriyani and Suzan (2021) stated that strong structural capital helps individuals to explore new ideas and continuously learn and grow (Badri, 2024).

Resource-Based Theory

According to Wernefelt (1984) as cited in Wijayani (2017), the resource-based theory explains that the resources owned by a company can become competitive advantages that enable the company to achieve good long-term performance. This theory emphasizes the importance of effective and efficient management and utilization of resources so that the company can create added value and advantages over its competitors (Sujana Romayudi, 2020).

PSAK 19 on Intangible Assets

VACA and STVA are measurements of intellectual capital, which is part of intangible assets regulated under PSAK No. 19. The standard states that to be recognized as intangible assets, an item must fulfill three criteria: identifiability, control over the resource, and the expectation of future economic benefits (Indonesian Financial Accounting Standards Board, 2015).

Value Added Capital Employed (VACA)

A measure of the amount of Value Added that may be produced from a single unit of human capital is called VACA. According to Putri et al. (2023), this ratio illustrates how each unit of capital used contributes to the rise or fall in the company's VA.

Using the Pulic (1997) formula, this VA is determined as the difference between output (OUT) and input (IN) as follows:

$$VA = OUT - IN$$

Description:

OUT = Output (total sales and other income)

IN = Input (operational and non-operational expenses except employee expenses)

Here is the formula for finding the VACA value of the public model:

$$VACA = \frac{VA}{VE}$$

Description:

VACA = Ratio of Value Added to Capital Employed

VA = Value Added

CE = Capital Employed (total equity)

Structural Capital Value Added (STVA)

STVA is an indicator to determine how much structural capital can be generated from the creation of value added. This ratio shows the contribution generated from structural capital in the success of the value creation process.

$$STVA = \frac{SC}{VA}$$

Description:

STVA = ratio of Structural Capital to Value Added

VA = Value added

SC = Structural Capital (Value Added – Human Capital)

VAIC is the sum of the three previous components, namely VACA, VAHU, and STVA with the following formula:

$$VAIC = VACA + VAHU + STVA$$

Return On Aset (ROA)

Hery (2018) states that the general goals and advantages of profitability ratios are as follows: determining the amount of net income generated from each rupiah of funds invested in total assets; determining the amount of net income generated from each rupiah of funds invested in total equity; determining the gross profit margin on net sales; determining the operating profit margin on net sales; determining the net profit margin on net sales; and evaluating the company's profit position by comparing prior years with the current year.

Return on Assets (ROA) is one of the profitability ratios. Profitability is a ratio that can be used to describe the extent to which an entity succeeds in generating profit from the management of its total assets, derived from sales activities, asset utilization, and capital usage (Firdaus et al., 2019). ROA serves as an indicator used to measure an entity's ability to generate profit from its total assets.

Therefore, ROA is often chosen to measure the performance of banks. The following is the mathematical formula for calculating ROA according to Kasmir (2014):

$$\text{Return On Asset (ROA)} = \frac{\text{Laba setelah pajak}}{\text{Rata-rata total aset}} \times 100\%$$

Explanation:

Profit after tax: refers to the profit earned before interest and tax.

Total assets: refers to the total wealth or assets owned by the company.

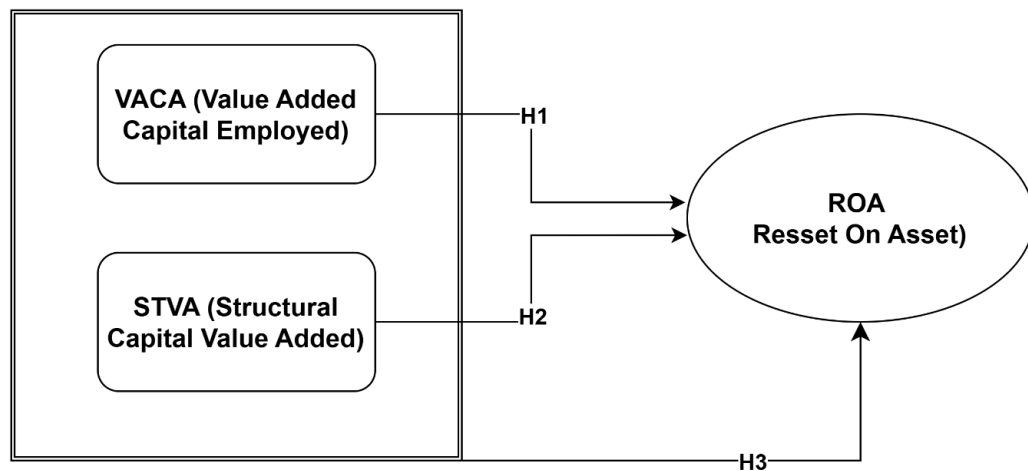
Previous Research

The following are findings from previous studies related to the topic of this research:

No	Researcher(s)	Research Title	Year	Research Findings
1	Rena Vidia Hodijah, Iwan Setiawan, and Ramadhani Irma Tripalupi	The Impact of Value Added Human Capital, Value Added Employed Capital, and Value Added Structural Capital on Return on Assets (ROA) in Indonesian Islamic Commercial Banks from 2016 to 2020	2022	The financial performance of Islamic banks will be impacted if a bank manages its capital employed, human capital, and structural capital effectively. This is because Return on Assets (ROA) is influenced by Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA).

No	Researcher(s)	Research Title	Year	Research Findings
2	Ghadah, Mufidah, Masnun, Ira Febrianti, and R. Adisetiawan	The Impact of Intellectual Coefficients, Return on Assets, Human Capital, Structural Capital Value Added, and Value Added of Employed Capital on Firm Value	2024	While value added intellectual, value added human, and structural capital coefficients do not significantly affect price book value for the same period and object, value added capital employed and return on assets do have an impact on price book value.
3	Rizaldy Jaya Sukmana	The Influence of Intellectual Capital on Company Financial Performance	2019	"The company is able to optimize its relationship with external parties, manage its physical assets effectively, carry out proper budgeting, and use its capital efficiently, thereby supporting and enhancing the company's financial performance."
4	Luthfiyah Salsabila and Dewi Rejeki	Value Added Human Capital (VAHU), Value Added Capital Employed (VACA), and Structural Capital Value Added (STVA) and Their Effect on Profitability		

Thinking Framework



The Relationship Between Value Added Intellectual Coefficient (VAIC) Measurement and Return on Assets (ROA):

VACA (Value Added Capital Employed):

Relationship: Total assets contribute to the company's capacity to create added value. The larger the total assets, the greater the potential to generate added value, which positively affects VACA. Net income also has an influence, as higher profits indicate greater efficiency in asset utilization.

STVA (Structural Capital Value Added):

Relationship: Total assets play an important role in creating structural capital, such as technology and systems that support operations. Net income reflects the effectiveness of using structural capital to generate added value. Both factors contribute to the increase in STVA.

ROA (Return on Assets):

Relationship: Total assets and net income are directly related to ROA. ROA is calculated by dividing net income by total assets. Thus, an increase in net income or more efficient use of total assets will improve ROA.

Research Hypotheses

According to Ismael Nurdin and Sri Hartati (2019), a hypothesis is a temporary, non-final conclusion; a provisional answer or assumption; a construct by the researcher regarding the research problem, which states the relationship between two or more variables.

Hypothesis 1

H₀: In Indonesian state-owned banks, Return on Assets (ROA) is unaffected by Value Added Capital Employed (VACA).

H_a: In Indonesian State-Owned Banks, Return on Assets (ROA) is impacted by Value Added Capital Employed (VACA).

Hypothesis 2

H₀: Structural Capital Value Added (STVA) has no effect on Return on Assets (ROA) in Indonesian State-Owned Banks.

H_a: In Indonesian State-Owned Banks, Return on Assets (ROA) is impacted by Structural Capital Value Added (STVA).

Hypothesis 3

H₀: In Indonesian state-owned banks, Return on Assets (ROA) is unaffected by both Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) at the same time.

H_a: In Indonesian state-owned banks, Return on Assets (ROA) is impacted by both Value Added Capital Employed (VACA) and Structural Capital Value Added (STVA) at the same time.

METHOD

A quantitative approach using a descriptive methodology is the research methodology employed. This approach was used by the researcher to investigate how Intellectual Capital affects Return on Assets (ROA). The study's independent variables (X) are X₁: Value Added Capital Employed (VACA) and X₂: Structural Capital Value Added (STVA), whereas the dependent variable (Y) is Return on Assets (ROA).

This study uses quantitative data, primarily from Indonesian State-Owned Banks' yearly financial reports for the 2019–2023 timeframe. Secondary data from the semi-annual financial reports released by each state-owned bank served as the study's data source. All Indonesian state-owned banks operating between 2019 and 2023 make up the study's population. The following criteria were used to choose the sample:

No.	Criteria	Matches	Does Not Match
1.	Total number of state-owned banks during 2019–2023	31	0
2.	Banks with complete financial reports for the 2019–2023 period	9	22
3.	Banks that reported profits during the 2019–2023 period	8	1

Documentation is the method of data gathering employed in this investigation. This method focuses on gathering information from the official

websites of each bank in the form of financial statements for each semester, which include income statements, balance sheets, and financial ratios. The required research data was subsequently extracted from these financial reports through analysis.

Data Analysis Techniques

Descriptive Statistics

In essence, descriptive statistics entail converting research data into an interpretable and easily comprehensible format. Descriptive statistics are typically used by researchers to enhance the study of the research variables and to give information about their features. (S.Si. Dr. Molli Wahyuni, 2020)

Classical Assumption Test

The model must pass traditional assumption tests as one of the requirements for employing multiple linear regression. Tests are required to make sure the regression model satisfies traditional assumptions in order to derive unbiased and effective estimators from a multiple linear regression equation. These consist of tests for heteroscedasticity, autocorrelation, multicollinearity, and normality. Mutmainah, Mintarti Indratini (2024)

Multiple Linear Regression Analysis

To determine if the independent factors have an impact on the dependent variable, multiple linear regression analysis is utilized. The impact of VACA, VAHU, and STVA on ROA is the main emphasis of this investigation. Ghozali (2021) states that the multiple linear regression equation can be expressed as follows:

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n + e$$

- Y = Dependent Variable (Return On Asset)
- a = Constant that shows the value of Y if the value ($x = 0$)
- b_1b_2 = Coefficient that shows the value of x in determining the value
- X_1 = Independent Variable (VACA)
- X_2 = Independent Variable (STVA)

X_n = Variabel Independen ke-n

e = Standard error

Hypothesis Test Analysis

a. T Test (Partial)

The t statistical test is also called the individual significance test. This test shows how far the independent variable partially influences the dependent variable. In the end, one conclusion will be drawn, H_0 is rejected or H_a is accepted (Sudaryana B, Agusiady H.R.R, 2022).

b. F Test (Simultaneous)

The F test is to find out all independent variables and explain the dependent variable, so a simultaneous hypothesis test is carried out using the F statistical test (Sudaryana B, Agusiady H.R.R, 2022).

RESULT AND DISCUSSION

Descriptive Test Results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
VACA (X1)	40	.021583935270166	.405016525757148	.266931269418911	.079149376758373
STVA (X2)	40	.405118894711170	.666139980927822	.553601890052050	.068086029395330
ROA (Y)	40	.000671194845821	.030750550546376	.015776534834073	.006666289229525

We can characterize the researcher's data distribution as follows based on the findings of the aforementioned descriptive test:

1. According to the data, the VACA variable (X1) has a minimum value of 0.02158, a maximum value of 0.40502, an average of 0.26693, and a standard deviation of 0.07915.
2. According to the data, the STVA variable (X2) has a minimum value of 0.40512, a maximum value of 0.66614, an average of 0.55360, and a standard deviation of 0.06809.
3. According to the data, the ROA variable (Y) has a minimum value of 0.00067, a maximum value of 0.03075, an average ROA of 0.01578, and a standard deviation of 0.00667. Results of the Normality Test for Uji Asumsi Klasik a)

Uji Normalitas

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		40
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.00593806
Most Extreme Differences	Absolute	.112
	Positive	.045

	Negative	-.112
Test Statistic		.112
Asymp. Sig. (2-tailed)		.200 ^{c,d}

Based on the results of the normality test, the significance value is $0.200 > 0.05$, so it can be concluded that the residual value is normally distributed.

a) Multicollinearity Test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.012	.005		-2.334	.025		
	VACA (X1)	.016	.012	.179	1.292	.205	.995	1.005
	STVA (X2)	.061	.015	.545	3.943	.000	.995	1.005

The tolerance value of VACA (X1) is 0.995, indicating that $0.995 > 0.10$, while the VIF value is 1.005, indicating that $1.005 < 10$. Therefore, it may be said that multicollinearity does not occur in the VACA variable. Given that the VIF value for the STVA variable is $1.005 < 10$ and the tolerance value obtained is 0.995, indicating that $0.995 > 0.10$, it can be said that the STVA variable likewise does not exhibit multicollinearity.

b) Heteroscedasticity Test

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	-.003	.007		-.430	.670
	VACA (X1)	-.003	.009	-.062	-.347	.731
	STVA (X2)	.014	.010	.243	1.378	.177
	ROA (Y)	.038	.096	.065	.395	.695

In the table above, the VACA (X1) value is 0.731 (>0.05) and STVA 0.117 (>0.05) which means that all variables do not experience heteroscedasticity.

c) Autocorrelation Test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.562 ^a	.316	.278	.00537	1.593

K (dependent variable) = 2, N (sample) = 40, Durbin-Watson (d) = 1.593, dL = 1.391, dU = 1.600, 4-dL = 2.609, 4-dU = 2.400. Thus it can be concluded from the results of the data obtained, namely the value of $dU < d < (4 - dL)$ which means the value of $dU < d < (4 - dL)$ or $1.600 < 1.593 < 2.400$ and the results indicate that there is no autocorrelation.

Hypothesis Test Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.016	.010		-1.543	.132
	VACA (X1)	.024	.013	.289	1.825	.076
	STVA (X2)	.046	.016	.467	2.944	.006

From the results of the table above, the secondary data results obtained are as follows:

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n + e$$

$$ROA = (-0.016) + 0.024 + 0.046 + 0.010$$

Based on the analysis, the interpretation of the equation is as follows: the constant value of -0.016 indicates that when the variables VACA (X1) and STVA (X2) are equal to zero (0), the model assumes a constant. The constant value of -0.016 implies a negative influence, meaning that the dependent variable (ROA) decreases.

Furthermore, the regression coefficient for VACA is 0.024, which is positive. This means that if VACA increases, ROA will also increase. Next, the regression coefficient for STVA is 0.046, also positive, indicating that if STVA increases, ROA will increase as well.

t-Test (Partial Test)

The hypotheses put forward in the study can be tested using the t-test. Forty samples (N) and two independent variables (K) are present. The following calculation can be used to find the crucial value for the t-table based on the above table:

VACA as X1 had a significance level (α) of 0.076 and a t-count significance value of 1.825. Given that ($0.076 > 0.05$), it can be said that ROA (Y) is not significantly impacted by VACA (X1).

STVA as X2 had a significance level (α) of 0.006 and a t-count significance value of 2.944. Given that ($0.006 < 0.05$), it can be said that ROA (Y) is significantly positively impacted by STVA (X2).

d. F-Test (Simultaneous Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	2	.000	4.691	.015 ^b
	Residual	.001	36	.000		
	Total	.002	38			

According to the above table's data, the three independent variables VACA (X1) and STVA (X2) have a simultaneous impact on ROA, as indicated by the F-count significance value of 4.691 and the significant value (α) of 0.015, which indicates that ($0.015 < 0.05$).

a. Determination Test (R^2)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.455 ^a	.207	.163	.00616

Based on the table above, the R^2 value is 0.207 or 20.7%, which indicates that VACA (X1) and STVA (X2) contribute 20.7% to ROA (Y), while the remaining 79.3% is influenced by other factors not examined in this study.

DISCUSSION***VACA Has No Significant Effect on ROA***

The study shows that VACA does not have a significant partial effect on ROA (significance value $0.076 > 0.05$). This indicates that physical capital has not been optimally managed to provide added value to the bank's profitability. It also suggests that asset utilization may not be efficient, or perhaps the bank's investment strategy is not productive enough in generating profit from its assets.

STVA Has a Significant Effect on ROA

STVA has a positive and significant effect on ROA (significance value $0.006 < 0.05$), indicating that structural capital such as systems, procedures, and information technology plays a crucial role in enhancing bank profitability. This supports the idea that internal infrastructure and knowledge management are key determinants of operational and financial effectiveness.

Simultaneous Effect of VACA and STVA on ROA

Simultaneously, VACA and STVA have a significant effect on ROA (significance value $0.015 < 0.05$). This proves that the combination of physical and structural capital management can boost financial performance, even though VACA alone does not show strong partial significance.

This finding aligns with the Resource-Based Theory, which states that unique and hard-to-replicate resources such as capital employed and structural capital can create sustainable competitive advantage.

Limited Variable Contribution

The coefficient of determination ($R^2 = 20.7\%$) shows that only a small portion of ROA variability is explained by VACA and STVA. This indicates that other variables beyond intellectual capital – such as credit risk, operational costs, asset quality, and managerial efficiency – are also important to consider in explaining the financial performance of banks.

SOLUTION

Based on the research findings showing that Value Added Capital Employed (VACA) does not have a significant partial effect on Return on Assets (ROA), a solution that can be applied is to increase efficiency in managing physical capital in state-owned banks. The use of capital employed should be directed to support productive operational activities and generate real added value. This can be done by evaluating investment strategies, optimizing the use of underutilized fixed assets, and integrating technologies that accelerate service and operational processes. Banking digitalization can also help increase the productivity of existing physical assets.

Furthermore, since the results indicate that Structural Capital Value Added (STVA) has a positive and significant effect on ROA, the components of structural capital must continue to be strengthened. This includes developing IT infrastructure, updating work systems, implementing efficient procedures, and fostering an innovative organizational culture. By supporting comprehensive internal performance, structural capital can improve operational efficiency and support faster and more accurate decision-making. A reliable information system will become the foundation for risk management and more accountable long-term business planning.

Banks need to create synergy between the management of VACA and STVA in an integrated manner. Both are components of intellectual capital that complement each other and can strengthen the bank's financial position if managed jointly and sustainably. The application of an integrated management concept such as the Balanced Scorecard can be an alternative approach that incorporates both financial and non-financial performance measurement. In addition, support from competent human resources is essential to support intellectual capital management. Therefore, regular employee training and competency development should be a priority, particularly in knowledge management and information technology.

CONCLUSION

The results of the study indicate that Value Added Capital Employed (VACA) does not have a significant partial effect on Return on Assets (ROA) because the bank has not yet optimized its physical capital effectively, while Structural Capital Value Added (STVA) has a positive and significant effect on ROA. This suggests that the management of structural capital – such as effective systems, procedures, and databases – can enhance profitability. Simultaneously, VACA and STVA have a significant effect on ROA, indicating that the synergy between efficient asset utilization and structural capital optimization plays an important role in improving the financial performance of state-owned banks.

REFERENCES

- Sudaryana B, Agusiady H.R.R. (2022). *Metodelogi Penelitian Kuantitatif*.
- Badri, R. E. (2024). Modal Intelektual dan Pengaruhnya terhadap Kinerja Keuangan (Studi Empiris pada Perusahaan Subsektor Food and Beverage di Bursa Efek Indonesia). *Jurnal Ilmiah Ekonomi Dan Bisnis*, 2(6), 834–842.
- Dewan Standar Akuntansi Keuangan. (2015). *Aset takberwujud* 19. 19(1), 1–12.
- Dianty, A. (2019). PENGARUH INTELLECTUAL CAPITAL TERHADAP KINERJA KEUANGAN. *In Search*, 18(01), 69–82.
- Dr. Molli Wahyuni, S.Si., M. P. (2020). *Statistik Deskriptif untuk Penelitian Olah Data Manual dan SPSS Versi 25*.
- Luthfiah Salsabila, D. R. (2021). PENGARUH VALUE ADDED CAPITAL EMPLOYED (VACA), VALUE ADDED HUMAN CAPITAL (VAHU), STRUCTURAL CAPITAL VALUE ADDED (STVA) TERHADAP PROFITABILITAS. *JURNAL AKUNTANSI DAN BISNIS KRISNADWIPAYANA*, 8(c), 1–11.
- Mintarti Indratini Mutmainah. (2024). *ANALISIS DATA KUANTITATIF Uji Instrumen, Uji Asumsi Klasik, Uji Korelasi dan Regresi Linier Berganda* (Vol. 14, Issue 5).
- Putri, R. A., Maryani, M., & Damayanti, D. (2023). Pengaruh Intellectual Capital Terhadap Kinerja Keuangan Perusahaan Makanan dan Minuman yang Terdaftar di Bursa Efek Indonesia (The Effect of Intellectual Capital on Financial Performance of Food and Beverage Companies Listed on the Indonesia Stock Exchan. *Jurnal Akuntansi, Keuangan, Dan Manajemen (JAKMAN)*, 4(4), 287–299.
- Sujana Romayudi. (2020). PENGARUH INTELLECTUAL CAPITAL (VACA, VAHU, STVA DAN VAIC) TERHADAP KINERJA KEUANGAN (ROE DAN ROA) PERBANKAN SYARIAH (Studi pada Bank Umum Syariah Periode 2015 – 2019). 36–40.
- Sukmana, R. J., & Fitria, A. (2019). PENGARUH INTELLECTUAL CAPITAL TERHADAP KINERJA. *Jurnal Ilmu Dan Riset Akuntansi*, 8(10), 1–15.
- Vidia, R., Iwan, H., & Irma, R. (2023). Pengaruh Value Added Capital Employed , Value Added Human Capital , dan Structural Capital Value Added Terhadap Return On Assets (ROA) pada Bank Umum Syariah di Indonesia periode 2016-2020. 7(1), 1–19.
- Wufron2, T. H. W. (2019). Efisiensi , Likuiditas Dan Sensitivitas Risiko Pasar Dalam Menentukan Kinerja Keuangan Sektor Perbankan Di Bursa Efek Indonesia. *Jurnal Wacana Ekonomi*, 1–12.
- Wulan Dwi Astuty. (2024). PENGARUH INTELLECTUAL CAPITAL, SHARIA COMPLIANCE, DAN RISIKO BANK TERHADAP KINERJA MAQASHID SHARIA PADA BANK UMUM SYARIAH DI INDONESIA.