Research Horizon

ISSN: 2808-0696 (p), 2807-9531 (e)

Research Horizon
Volume: 05
Issue: 06
Year: 2025
Page: 2503-2516

Citation:
Diani, T. M., & Nugroho, L. (2025). The effect of intellectual capital components on financial performance of Islamic commercial banks in Indonesia. *Research Horizon, 5*(6), 2503-2516

Article History:
Received: October 10, 2025
Revised: November 17, 2025
Accepted: December 24, 2025
Online since: December 31, 2025

The Effect of Intellectual Capital Components on Financial Performance of Islamic Commercial Banks in Indonesia

Treska Melsa Diani[1*], Lucky Nugroho[1]

[1] Universitas Mercu Buana, Jakarta, Indonesia

[*] *Corresponding author: Treska Melsa Diani (treska.teemde@gmail.com)*

Abstract

Islamic commercial banks in Indonesia have grown rapidly, yet their profitability remains lower and more volatile than that of conventional banks. This condition raises questions about the role of intellectual capital in creating sustainable financial performance. This study aims to examine the effect of value added capital employed, value added human capital, and value added structural capital on the financial performance of Islamic commercial banks in Indonesia over the period 2015–2024. The research used a quantitative approach with monthly data from all Islamic commercial banks registered with the Financial Services Authority of Indonesia. Data were analyzed using multiple linear regression after fulfilling classical assumption tests and handling outliers. The results show that the three components of intellectual capital simultaneously have a significant effect on return on assets and explain 88.9 percent of its variation. Partially, value added capital employed and value added human capital have a significant negative effect, while value added structural capital has a significant and strongly positive effect. These findings indicate that during the observation period, rapid asset expansion and high human capital costs tended to reduce short-term profitability, whereas investment in systems, technology, and organizational infrastructure became the main driver of profit growth.

Keywords

Financial Performance, Human Capital, Return on Assets, Value Added Capital Employed, Value Added Structural Capital.

1. Introduction

Banking is an institution that provides services for collecting and distributing funds from the public. The banking sector plays an important role in national development. There are fundamental differences between Islamic banking and conventional banking. These differences lie in their operational principles, whereby Islamic banking uses a profit-sharing system, while conventional banking uses interest. This has an impact on the financial performance of both types of banks (Sabir & Husain, 2022; Nurahman et al., 2024).

In the banking industry, announcements about financial performance have an impact on customer trust in banks. This trust is demonstrated by the increasing amount of funds successfully collected by the bank concerned. Public trust and profitability are two things that influence each other in the banking business. Public trust in banking can be influenced by the level of profitability (Silitonga, 2022). Return on Assets (ROA) is a type of profitability ratio used to measure financial performance, which is calculated by dividing net income by total assets (Azzahra et al., 2025). A high ROA shows that the bank is efficient in using its assets to generate profit.

The challenge currently faced by Islamic banking is the limited number of human resources with expertise in Islamic banking. This can certainly be a challenge for Islamic banking in achieving its financial performance and gaining public trust (Hasibuan, 2021; Yudhanto et al., 2025; Jacksen & Yantiana, 2025). This can be an obstacle for Islamic banking to develop and compete with conventional banking.

One factor that affects a company's financial performance is human capital or human resources (Subarkah, 2021). Human resources are part of a company's intellectual capital. Intellectual capital is intellectual assets related to knowledge, information, intellectual property, and experience that can be used to increase competitive advantage. Each of these components adds value to the organization, which in turn affects the company's financial performance. The added value and competitive advantage of a company are closely watched by all parties involved, including investors. Companies that are considered to have high value will be favored by investors because they have the ability to increase their value through efficient resource management. One way companies currently demonstrate their performance is by developing the quality of their employees, reliable technology or added value of structural resources, and good relationships with customers. These are all part of intellectual capital (Yulinda et al., 2020; Olivia et al., 2021).

Sharia banks are one type of business that is highly dependent on intellectual capital. Studies in several regions, including Indonesia, have found that intellectual capital plays a role in increasing the value of a business (Hodijah et al., 2023). Efficient intellectual capital management is believed to improve organizational performance, including financial performance (Rahmadi & Mutasowifin, 2021). However, Rahajeng and Hasibuan (2020) show mixed results regarding the direction of the influence of each component of intellectual capital on financial performance, especially in the context of Islamic commercial banks. According to Hodijah et al. (2023), Value Added Capital Employed (VACA) and Value Added Structural Capital (STVA) do not always have a positive effect on ROA, while Value Added Human Capital (VAHU) shows inconsistent results across different observation periods. Similarly, Aprilyani et al. (2020) found that VAHU has a significant positive effect, but the study was only conducted on conventional banks listed on the Indonesia Stock Exchange. Suzan and Rini (2022) stated that all components of intellectual capital have a positive influence, yet their research sample only covered companies in the LQ45 index and did not focus specifically on Islamic banking. These conflicting findings indicate a research gap, especially for the most recent period that

includes the impact of bank mergers, digital transformation, and post-pandemic recovery in the Indonesian Islamic banking industry.

Therefore, this study aims to re-examine the effect of the three main components of intellectual capital, namely Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Value Added Structural Capital (STVA), on the financial performance of Islamic commercial banks in Indonesia for the period 2015–2024 using ROA as the performance measure. This research is expected to provide a clearer and more updated picture of how each component of intellectual capital actually contributes, both positively and negatively, to the profitability of Islamic commercial banks in the current era.

2. Literature Review and Hypothesis Development

2.1. Value Added Capital Employed and Financial Performance

Resource-Based Theory (RBT) explains that a company's sustainable competitive advantage comes from resources that are valuable, rare, inimitable, and non-substitutable (Apriliyanti, 2022). Penrose was the first expert to state that companies have very heterogeneous resources, and differences in resources will create differences in performance and strategy (Ekanem, 2024). In the context of banking, physical and financial capital (capital employed) is one of the most important tangible resources. This theory becomes very relevant for Islamic banks because they rely heavily on equity and third-party funds that must be managed efficiently to create added value.

Value Added Capital Employed (VACA) measures how efficiently one unit of capital employed can create added value for the company (Wiratno & Sukirman, 2012). According to Herdianto et al. (2024), banks with higher VACA are generally able to generate greater value added because they manage their equity and assets more effectively. However, Hodijah et al. (2023) found that in several periods, higher VACA did not automatically increase profitability because the capital was used more for long-term investment or branch expansion rather than short-term profit generation. This mixed evidence shows that the relationship between capital employed efficiency and financial performance needs to be re-examined, especially in Islamic banks that have different funding and financing structures. Therefore, the first hypothesis is proposed:

H1: Value-added capital employed has a significant effect on return on assets.

2.2. Value Added Human Capital and Financial Performance

Human capital is a core component of intellectual capital and becomes a source of innovation and competitive advantage according to Resource-Based Theory (Mistari et al., 2022). Value Added Human Capital (VAHU) reflects the contribution of employees, through knowledge, skills, and experience, to the creation of company value added (Lusianah, 2020). Subarkah (2021) states that companies that invest heavily in training and employee welfare tend to have higher VAHU and better financial performance in the long run. Aprilyani et al. (2020) found a significant positive effect of VAHU on ROA in banking companies listed on the Indonesia Stock Exchange.

However, in the Islamic banking sector, the situation is slightly different. High employee costs combined with a shortage of experts in sharia finance can temporarily reduce profitability even though VAHU is high (Hasibuan, 2021; Olivia et al., 2021). Suzan and Rini (2022) also confirmed that human capital efficiency significantly affects financial performance, but the effect can vary depending on the observation period and type of bank. These findings indicate that the role of human resources in

Islamic banks still needs further testing, especially after the Covid-19 pandemic and the merger of several large Islamic banks. Thus, the second hypothesis is:

H2: Value added human capital has a significant effect on return on assets.

2.3. Value Added Structural Capital and Financial Performance

Structural capital includes organizational infrastructure, processes, databases, information systems, and organizational culture that support employees in creating value (Akmala & Rohman, 2021). Value Added Structural Capital (STVA) shows how much value added is contributed by systems and procedures after deducting the contribution of human capital. According to Rahmadi and Mutasowifin (2021), companies that fail to maximize structural capital will limit employee productivity, whereas strong structural capital will significantly increase financial performance. Putri et al. (2023) found that STVA has a positive and significant effect on company performance because good systems reduce operational costs and increase efficiency.

In Islamic banking, the merger into Bank Syariah Indonesia in 2021 and massive digital transformation in recent years have greatly strengthened structural capital (Maulidia & Fahlevi, 2022). Although Hodijah et al. (2023) stated that STVA does not always affect ROA in earlier periods, most recent studies show a stronger positive relationship after banks improved their technology and risk management systems. This change makes structural capital increasingly important in the current era of digital banking. Therefore, the third hypothesis is proposed:

H3: Value added structural capital has a significant effect on return on assets.

2.4. Simultaneous Effect on Financial Performance

Intellectual capital is not only about individual components but also about how VACA, VAHU, and STVA work together to create overall value added (Mistari et al., 2022). Resource-Based Theory emphasizes that the combination and synergy of various resources will produce better performance than when viewed separately (Listianawati & Sampurno, 2021; Mahanavami, 2023). Several studies have proven that the three components of intellectual capital simultaneously affect financial performance, both in conventional and Islamic banking (Tanjung & Aulia, 2022; Ishfahani et al., 2022; Herdianto et al., 2024).

Rahmadi and Mutasowifin (2021) stated that efficient management of all intellectual capital elements can increase company value and profitability at the same time. Even though partial effects may vary (some positive and some negative), the overall contribution of intellectual capital remains significant in the banking industry (Saragih & Sihombing, 2021; Suzan & Rini, 2022). Testing the three variables together in one model is important to see the real contribution of intellectual capital as a whole, especially in the Islamic banking sector that continues to grow rapidly. Thus, the fourth hypothesis is:

H4: Value-added capital employed, value-added human capital, and value-added structural capital simultaneously have a significant effect on return on assets.

Based on Resource-Based Theory and previous empirical studies, this research builds a framework that connects the three main components of intellectual capital with financial performance measured by Return on Assets (ROA). Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Value Added Structural Capital (STVA) are positioned as independent variables, while ROA is the dependent variable. The relationship between variables is illustrated in Figure 1. This framework is supported by several researchers such as Hodijah et al. (2023),

Aprilyani et al. (2020), and Suzan and Rini (2022), who also used the VAIC (Value Added Intellectual Coefficient) method developed by Pulic to measure intellectual capital and link it to company financial performance. The conceptual framework shows both partial and simultaneous influences, so that the role of each component and their combined contribution can be clearly identified.

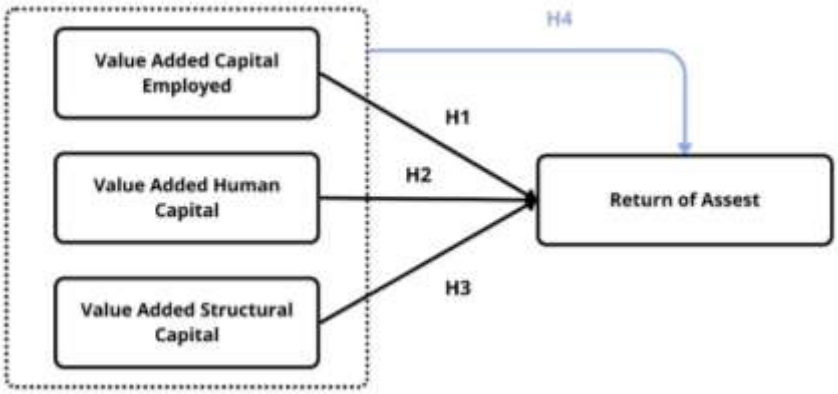

Figure 1. Conceptual Framework

Figure 1 illustrates the conceptual framework showing how value added capital employed, value added human capital, and value added structural capital each influence return on assets through hypotheses H1, H2, and H3. The model also includes H4, which represents the combined or overall effect of intellectual capital components on the firm's return on assets.

3. Methods

Using a descriptive quantitative approach, this study comprehensively analyzes the impact of Value-Added Capital Employed (VACA), Value-Added Human Capital (VAHU), and Value-Added Structural Capital (STVA) on the financial performance of Islamic commercial banks in Indonesia over the period 2015–2024. The population consists of all Islamic commercial banks (*Bank Umum Syariah*/BUS) registered with the Financial Services Authority (*Otoritas Jasa* Keuangan/OJK) through its Islamic Banking Statistics. Monthly data were collected from the official published financial reports of each bank and OJK Islamic Banking Statistics to ensure accuracy and comparability.

Financial performance is measured using Return on Assets (ROA), which is calculated as net income divided by total assets, while the independent variables follow the Value Added Intellectual Coefficient (VAIC) method developed by Pulic. Value Added (VA) is computed as operating profit plus employee expenses plus depreciation and amortization expenses. VACA is measured as VA divided by total equity and net profit, VAHU as VA divided by total employee expenses, and STVA as the difference between VA and human Capital Costs (SC = VA − HC). This approach is widely used in previous studies on Islamic banking in Indonesia and allows for consistent measurement of intellectual capital efficiency.

The data were processed using EViews 13 software. The analysis began with descriptive statistics, followed by classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation). After outlier removal, all classical assumption tests were satisfied. Hypothesis testing was conducted through partial t-tests and simultaneous F-tests at a 5% significance level. The procedure ensures that the regression results are valid, unbiased, and suitable for drawing conclusions about the influence of intellectual capital components on the financial performance of Islamic commercial banks in Indonesia.

4. Results

This section presents the empirical findings of the study after the data were processed using EViews 13. The results cover descriptive statistics, classical assumption tests after handling outliers, and hypothesis testing through multiple linear regression analysis. All analyses are based on monthly data of Islamic commercial banks in Indonesia for the period 2015–2024. The presentation follows the sequence of tests conducted to ensure the validity and reliability of the regression results.

Table 1. Descriptive Statistics Test

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Value Added Capital Employed	120	0.02	0.59	0.2192	0.11984
Value Added Human Capital (VAHU)	120	1.24	20.52	2.4704	2.06525
Value Added Structural Capital (STVA)	120	0.19	0.95	0.5164	0.14087
Return on Assets	120	0.16	2.18	1.4396	0.56016
Valid N (listwise)	120	—	—	—	—

The results of the descriptive analysis in Table 1 show that the Value Added Capital Employed (VACA) variable has an average of 0.2192, a minimum value of 0.02, and a maximum value of 0.59. This indicates that the level of capital efficiency in Islamic Commercial Banks varies considerably. The average of 0.2192 indicates that each unit of capital used can generate an added value of around 0.2192. In other words, Islamic Commercial Banks have used physical and financial capital to create added value, but this has not yet reached an optimal level of effectiveness. In January 2018, the minimum VACA figure was 0.02. According to OJK data, Islamic bank revenues in January 2018 declined compared to January 2017. According to Boedi Armanto, Deputy Commissioner for Banking Supervision at OJK, this decline in net profit was due to the entry of new banks at the beginning of the period (Rossiana, 2018). This will have an impact on the value added in the VACA calculation. Meanwhile, the maximum figure of 0.59 was recorded in December 2015. This occurred because the Islamic commercial banking industry at that time experienced an increase in operating profit and equity. This condition affected the VACA calculation. This variation reflects the differences in asset management strategies between Islamic banks.

Based on Table 1, the Value Added Human Capital (VAHU) variable, an average value of 2.4704 was obtained with a range of 1.24 to 20.2, indicating that the contribution of human capital to value added creation is quite high. In May 2016, the Islamic commercial banking industry obtained the lowest VAHU value of 1.24. This was because at that time, Islamic banking assets were growing, but in terms of profitability, as measured by ROA, they were actually declining. The Islamic commercial banking industry faced operational efficiency challenges due to high labor costs, while financing income was not yet optimal. Several Islamic commercial banks also still experienced problems with high Non-Performing Financing (NPF), causing net profits to decline. Meanwhile, the maximum VAHU figure of 20.52 was recorded in January 2022. This occurred because during that period, Islamic banking was just recovering from the Covid-19 pandemic. Based on OJK Islamic Banking Statistics data, there was a twofold increase in operating profit from December 2021. However, in terms of labor costs, there was a drastic decline. This was due to human resource efficiency following the merger of three Islamic commercial banks, namely BRI Syariah, BNI Syariah, and Bank Syariah Mandiri, into Bank Syariah Indonesia.

However, the variation between the minimum and maximum also shows significant differences between banks in utilizing Human Resource (HR) potential.

Meanwhile, the Value Added Structural Capital (STVA) variable has an average of 0.5164 with a minimum value of 0.19 and a maximum of 0.95. This shows that structural capital also contributes quite stably to value added creation. The minimum figure of 0.19 was recorded in May 2016. At that time, the Islamic commercial banking industry had the lowest STVA value. This was because at that time, the infrastructure in Islamic commercial banks, such as management information systems, risk management tools, and technological infrastructure, was still simple, so that structural capital could not yet generate significant value added. Meanwhile, the maximum figure of 0.95 was recorded in January 2022. Based on data from the OJK's Islamic Banking Statistics, this occurred because assets in Islamic commercial banks grew rapidly, and at that moment, Bank Syariah Indonesia was also established, which was the result of the merger of BRI Syariah, BNI Syariah, and Bank Syariah Mandiri. This can strengthen the organizational structure, system integration, and risk management in Islamic commercial banks. Moreover, the digitization of Islamic banking began to take place on a massive scale during that period. This increase has led to a rise in the STVA value of Islamic commercial banks in Indonesia. The relatively high average value (0.5164) indicates that Islamic commercial banks have established an adequate organizational structure to support their performance. Variations between banks show that some banks may be more advanced in terms of technological innovation and management systems, while others still need to strengthen their internal structures.

The dependent variable, return on assets, had an average value of 1.4396 with a range between 0.16 and 2.18. This figure indicates that, in general, the financial performance of Islamic commercial banks is quite good, because a return on assets above 1% reflects the maximum utilization of assets by companies to generate profits. Islamic Banking Statistics from the OJK in 2016 show that the return on asset value of BUS in May 2016 tended to be lower due to internal factors such as the dominance of MSME financing with lower profit margins, inefficient operational management, and the dominance of low-cost funds that require higher operational costs to cover expenses. Meanwhile, the highest return on assets value of 2.18 was obtained in March 2023. This was due to improvements in operational efficiency, better product and service diversification, enhanced risk management, and healthier asset growth in line with the maturing Islamic banking industry in Indonesia, supported by the Financial Services Authority (*Otoritas Jasa Keuangan/*OJK) policies that continue to encourage growth in this sector.

The classical assumption test is a series of statistical tests aimed at ensuring that the regression model meets the basic assumptions so that the regression analysis results are valid, accurate, and unbiased. The classical assumption test includes a normality test, a multicollinearity test, a heteroscedasticity test, and an autocorrelation test.

One of the testing methods used is the Jarque-Bera (J-B) test. The permissible error limit is $\alpha = 0.05$. The decision to accept or reject the hypothesis is based on the probability value of the J-B test results, with the following rules. The normality assumption is satisfied if the probability value is$p \geq 0.05$. The assumption of normality is not met if the probability value $p < 0.05$.

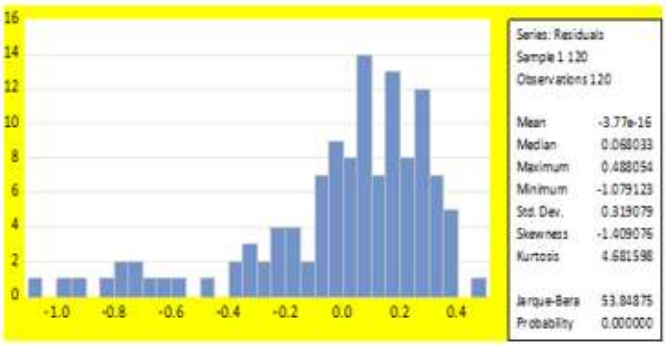

Figure 2. Normality Test

In the Figure 2, it is known that the probability based on J-B is 53.84 with a probability value of 0.00. The value produced is smaller than the significance limit of 0.05, so it can be concluded that the normality assumption does not meet the criteria. Thus, it is necessary to test data that are outliers, as shown in the table 2.

Table 2. Data Outlier

Variable	Coefficient	Std. Error	T-Statistic	Prob.
Constant	-0.225630	0.069743	-3.235170	0.0016
Value Added Capital Employed (VACA)	-0.398957	0.160089	-2.492089	0.0143
Value Added Human Capital (VAHU)	-0.096765	0.010348	-9.351013	0.0000
Value Added Structural Capital (STVA)	4.046532	0.152575	26.52161	0.0000
@ISPERIOD("1")	-1.055471	0.174030	-6.064886	0.0000
@ISPERIOD("2")	-0.992896	0.172609	-5.752296	0.0000
@ISPERIOD("3")	-0.987704	0.171980	-5.743141	0.0000
@ISPERIOD("4")	-0.964567	0.171911	-5.610853	0.0000
@ISPERIOD("5")	-0.930630	0.172402	-5.398010	0.0000
@ISPERIOD("6")	-0.968460	0.173242	-5.590214	0.0000
@ISPERIOD("7")	-0.909802	0.174152	-5.680572	0.0000
@ISPERIOD("8")	-1.013138	0.175299	-5.779480	0.0000
@ISPERIOD("9")	-1.004742	0.176654	-5.687633	0.0000
@ISPERIOD("10")	-0.961891	0.178663	-5.383237	0.0000
@ISPERIOD("11")	-0.975431	0.180501	-5.440225	0.0000
@ISPERIOD("12")	-0.914348	0.182627	-5.006652	0.0000

Based on Table 2, there are outlier results for the cross-section of the study for months 1–12, so the outlier data is not used in this study. After the outlier data is not used, the normality test is performed again as shown in Figure 3.

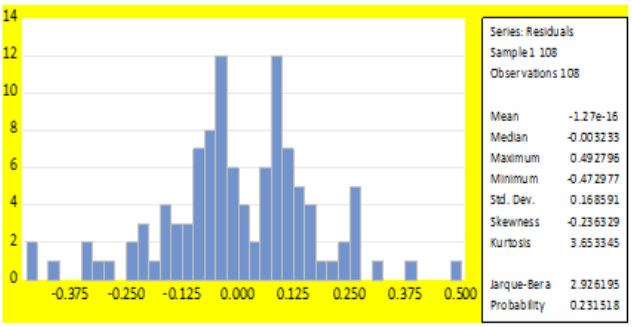

Figure 3. Normality Test

Based on Figure 3, the probability value based on J-B is 2.92 with a probability value of 0.23. This result is greater than the significance limit of 0.05. Thus, it can be stated that the normality assumption meets the criteria.

Table 3. Multicolinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Constant	0.004864	17.96402	NA
Value Added Capital Employed (VACA)	0.025629	5.019254	1.030732
Value Added Human Capital (VAHU)	0.000107	4.340728	1.852107
Value Added Structural Capital (STVA)	0.023279	24.68256	1.871775

Based on Table 3, the Variance Inflation Factor (VIF) for each variable is: VACA = 1.030, VAHU = 1.852, and STVA = 1.871. The VIF results are below the criterion of 10, indicating that there is no serious multicollinearity in this research data. The tolerance values generated for the independent variables also indicate that there is no multicollinearity because the values are above the criterion of 0.10.

Table 4. Heteroscedasticity and Autocorrelation Test

Statistics	Heteroscedasticity Test	Autocorrelation Test
F-statistic	0.086298	0.283660
Obs*R-squared	0.087870	0.597664
Prob. F (1,105)	0.7695	0.7536
Prob. Chi-Square (1)	0.7669	0.7417

In this test, the probability value of Obs*R-squared is greater than 0.05 as shown in Table 4, which means there are no signs of heteroscedasticity. In other words, the residual variance is homogeneous or constant across all independent variable prediction values. This condition indicates that in the context of Islamic commercial banks, the influence of value-added capital employed, value-added human capital, and value-added structural capital on return on assets is relatively stable in various conditions, without being influenced by the size of the predictor variable values.

Table 4 also show the autocorrelation test result. The autocorrelation test used the Breusch-Godfrey Serial Correlation LM Test, which produced an Obs*R-squared value of 0.597 with a probability of 0.741. Since the probability value is above 0.05, there is no evidence of autocorrelation.

Table 5. Multiple Linear Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	-0.225630	0.069743	-3.235170	0.0016
Value Added Capital Employed (VACA)	-0.398957	0.160089	-2.492089	0.0143
Value Added Human Capital (VAHU)	-0.096765	0.010348	-9.351013	0.0000
Value Added Structural Capital (STVA)	4.046532	0.152575	26.52161	0.0000

The multiple linear regression equation is obtained as follows: ROA=−0.22−0.398(VACA)−0.096(VAHU)+4.046(STVA)+e. Based on Table 5, a constant value of -0.225 indicates that if the variables value-added capital employed, value-added human capital, and value-added structural capital are zero, then ROA is predicted to be negative at -0.225. The regression coefficient of value-added capital

employed of -0.398 indicates that for every 1 unit increase in value-added capital employed, there is a decrease in ROA of 0.398 units, assuming other variables remain constant. The regression coefficient value of value-added human capital of -0.096 indicates that every 1 unit increase in value-added human capital results in a decrease in ROA of 0.096 units. The regression coefficient of value-added structural capital of 4.046 indicates that a 1 unit increase in value-added structural capital will increase ROA by 4.046 units.

T- test is intended to examine the direct implications of the independent variables on the dependent variable partially. Based on Table 5, it was found that the value-added capital employed variable had a significance of 0.014 (< 0.05). This indicates that value-added capital employed has a significant effect on ROA. From the t-test results, it can also be seen that if there is an increase of 1 unit of value-added capital employed, it actually reduces financial performance by 0.389857 points, assuming other variables remain constant. The use of more capital does not always improve performance. This occurs because investments are not managed optimally or the cost of capital is too high.

The t-test results show that the value-added human capital variable has a significance value of 0.0005 (< 0.05). This indicates that value-added human capital has a significant effect on ROA. The t-test results show that every 1-unit increase in value-added human capital reduces financial performance by 0.098765 points. Although labor plays an important role, development costs for human resources, such as training and high compensation, do not directly increase profitability in the short term. The results of this study are in line with RBT concept, which emphasizes that human resources are strategic assets that can create competitive advantages when managed properly. These results also show that the contribution of human capital in Islamic Commercial Banks is very significant in increasing profitability.

The t-test results show that the value-added structural capital variable has a significance value of 0.000 (< 0.05). This means that value-added structural capital has a significant effect on ROA. The t-test results also show that every 1 unit increase in value-added structural capital increases financial performance by 4.046532 points. The results of this study reflect the concept of organizational capital advantage which states that the stronger the role of structural capital in an organization, such as systems, work processes, operational procedures, information technology, and organizational culture, the greater its contribution to increasing the bank's value added and profitability. Good structural capital enables banks to operate more efficiently, consistently, and innovatively, thereby having a positive impact on financial performance.

Table 6. Model Summary and Simultaneous Significance Test F-test

Statistics	**Value**
R-squared	0.889408
Adjusted R-squared	0.886218
F-statistic	278.7976
Prob(F-statistic)	0.000000

The analysis results, as shown in Table 6, show that the calculated F value is 278.797 with a Prob. level of 0.000 (< 0.05). This indicates that VACA, VAHU, and STVA simultaneously have a significant effect on ROA. These findings indicate that the regression model has a strong goodness of fit, thus supporting the hypothesis that Intellectual Capital, through the elements of capital employed, human capital, and structural capital, has a significant effect on the financial performance of Islamic commercial banks.

The test results show an R^2 value of 0.889 and an Adjusted R^2 value of 0.886. As much as 88.9% of the variation or change in the financial performance of Islamic commercial banks can be explained by three independent variables in this study,

while the remaining 11.1% is explained by other factors outside the model, such as macroeconomic conditions, regulations, or other external factors. The very high Adjusted R^2 value (0.886) indicates that the regression model constructed has excellent explanatory power.

5. Discussion

The results of the study show that H1 is accepted because Value Added Capital Employed (VACA) has a significant effect on financial performance as proxied by ROA, although the direction is negative. Having many assets does not always mean high profitability. The high value of value-added capital employed is likely to come from an increase in productive assets that is not accompanied by an increase in the efficiency of asset utilization. For example, placing funds in fixed assets or certain long-term investments can increase the value of value-added capital employed, but does not necessarily increase profits in the short term. This finding is consistent with Hodijah et al. (2023), who also found that value-added capital employed does not always have a positive effect on ROA in Islamic commercial banks. Subarkah (2021) even stated that value-added capital employed has no significant effect on financial performance because of fluctuating asset utilization efficiency. The negative relationship in the current study reflects that during 2015–2024, many Islamic banks were in an expansion phase, increasing capital and assets rapidly while profitability was still catching up.

The results also show that Value Added Human Capital (VAHU) has a significant effect on financial performance as proxied by ROA, and H2 is accepted. However, the relationship is negative, meaning that the higher the value-added human capital, the lower the ROA in the observed period. This proves that although labor plays an important role, high development costs for human resources, such as training and compensation, do not directly increase profitability in the short term. Hasibuan (2021) highlighted the scarcity of sharia banking experts in Indonesia, which forces banks to pay premium salaries, increasing employee costs without an immediate positive impact on profit. Olivia et al. (2021) also found similar results where value-added human capital does not always improve ROA because of high operational burdens from human capital investment. These results align with the Resource-Based Theory concept that human resources are strategic assets, but the benefits appear in the long term after knowledge and skills have been fully absorbed by the organization.

The results of the study further reveal that the Value Added Structural Capital (STVA) variable has a significant and positive effect on financial performance as proxied by ROA, so H3 is accepted. This indicates that Islamic commercial banks with good systems and procedures, adequate information technology support, and a strong organizational culture are able to generate higher profitability. In other words, structural capital is the most dominant factor in improving the financial performance of the Islamic commercial banking industry. Suzan and Rini (2022) and Putri et al. (2023) also confirmed that value-added structural capital has a significant positive effect on ROA because strong organizational infrastructure reduces operational costs and increases efficiency. The massive digital transformation and the 2021 merger that created Bank Syariah Indonesia significantly strengthened systems, databases, and risk management, which is clearly reflected in the large positive coefficient of value-added structural capital in this study.

H4 is accepted because value-added capital employed, value-added human capital, and value-added structural capital simultaneously have a significant effect on ROA, with an R^2 value reaching 88.9%. This finding supports previous research by Ishfahani et al. (2022) and Herdianto et al. (2024) who proved that the three components of intellectual capital together play a major role in determining banking performance. Even though partial effects can be positive or negative, the

contribution of intellectual capital remains very strong in the Islamic banking sector in Indonesia.

The practical implication of this study is that Islamic commercial banks should prioritize investment in structural capital (information technology, digital systems, and integrated processes) because it provides the largest and most consistent positive contribution to profitability. Meanwhile, increases in physical capital and human capital costs must be managed carefully so they do not burden short-term performance. Bank management and regulators, especially the financial services authority, can use these findings to design policies that encourage digital transformation and system efficiency while gradually overcoming the shortage and high cost of sharia human resources in the future.

6. Conclusion

This study concludes that the three components of intellectual capital, namely VACA, VAHU, and STVA, simultaneously and partially have a significant effect on the financial performance of Islamic commercial banks in Indonesia for the period 2015–2024, as measured by ROA. Partially, VACA and VAHU show a significant negative influence on ROA, while STVA has a significant and strongly positive influence. Among the three components, structural capital is the most dominant factor in improving profitability, whereas higher efficiency in physical capital and human capital during the observed period actually tended to reduce short-term profitability.

The practical implication is that Islamic commercial banks should prioritize the development of structural capital through investment in information technology, digital systems, integrated processes, and strong risk management because these elements provide the largest positive contribution to ROA. At the same time, expansion of physical assets and high human capital costs need to be managed more carefully so they do not burden short-term performance. This study is limited to Islamic commercial banks and uses monthly data that required the removal of some outliers; therefore, the results may not fully reflect the conditions of Islamic business units or conventional banks. Future research is suggested to expand the sample to include Islamic business units, use a longer observation period, or add other variables such as macroeconomic factors and fintech adoption to obtain a more comprehensive picture.

References

Akmala, S., & Rohman, A. (2021). Pengaruh intellectual capital terhadap kinerja keuangan perusahaan (Studi empiris pada perusahaan perbankan yang terdaftar di BEI tahun 2017-2019). *Diponegoro Journal of Accounting*, *10*(4), 1-12.

Apriliyanti, I. D. (2022). A problem waits: Is it true that resource-based theory (RBT) is an empty tautology? *Policy & Governance Review*, *6*(2), 107-122.

Aprilyani, R. V. D., Susbiyani, A., & Aspirandi, R. M. (2020). Pengaruh capital employed, human capital, structural capital terhadap kinerja keuangan pada perusahaan perbankan yang terdaftar di BEI tahun 2017-2020. *Jurnal Akuntansi Profesi*, *11*(2), 330-338.

Azzahra, W. N., Wafdayanti, H., & Hersugondo, H. (2024). The impact of CSR on company financial performance using company size as a moderator. *Research Horizon*, *4*(4), 321-328.

Hasibuan, L. (2021). *OJK: Kinerja perbankan syariah lebih baik dari konvensional.* CNBC Indonesia. Retrieved on September 1, 2025, from https://www.cnbcindonesia.com/syariah/20210225150734-29-226150/ojk-kinerja-perbankan-syariah-lebih-baik-dari-konvensional

Hazlina, D. R. V., & Octrina, F. (2021). Pengaruh intellectual capital terhadap kinerja keuangan perusahaan (Study pada bank syariah di Indonesia periode 2015-2019). *Stability: Journal of Management and Business*, *4*(1), 46-56.

Herdianto, P., Mismiwati, M., Pertiwi, D., Krisdayanti, H., & Riduwansah, R. (2024). Pengaruh intellectual capital terhadap kinerja keuangan perbankan syariah di Indonesia. *Jurnal Ilmiah Mahasiswa Perbankan Syariah (JIMPA)*, *4*(1), 91-106.

Hodijah, R. V., Setiawan, I., & Irma Tripalupi, 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. *Iltizam Journal of Shariah Economics Research*, *7*(1), 1-19.

Ishfahani, A. A., Marwansyah, M., & Burhany, D. I. (2022). Pengaruh intellectual capital terhadap kinerja keuangan bank umum syariah di Indonesia. *I-Finance: A Research Journal on Islamic Finance*, *8*(1), 68-85.

Jacksen, & Yantiana, N. (2025). Analysis of the impact of the COVID-19 pandemic on financial performance in various industrial sectors in Indonesia. *Research Horizon*, *5*(4), 1375-1388.

Listianawati, & Sampurno, R. D. (2021). Analisis pengaruh intellectual capital terhadap kinerja keuangan perusahaan (Studi kasus: Perusahaan manufaktur di bidang food and beverages yang terdaftar di Bursa Efek Indonesia periode 2015-2019). *Diponegoro Journal of Management*, *10*(3), 1-14.

Lusianah. (2020). *Intellectual capital*. Binus. Retrieved on September 1, 2025, from https://accounting.binus.ac.id/2020/12/20/intellectual-capital/

Mahanavami, G. A. (2023). *Kinerja keuangan lembaga perbankan berdasarkan structural capital, relational capital, social capital dan human capital berbasis Asta Brata* (M. A. Wardana, Ed.). Denpasar: Penerbit Intelektual Manifes Media.

Maulidia, M. P., & Fahlevi, R. (2022). Pengaruh intellectual capital, Islamic corporate social responsibility dan zakat terhadap kinerja keuangan bank umum syariah periode 2012-2020. *MASLAHAH (Jurnal Hukum Islam dan Perbankan Syariah)*, *13*(1), 65-86.

Mistari, B., Mustika, R., Panorama, M., & Tharfi, Q. (2022). Pengaruh intellectual capital dan corporate governance terhadap kinerja keuangan perbankan di Indonesia. *SIBATIK JOURNAL: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, dan Pendidikan*, *1*(7), 1029-1048.

Nurahman, D., Majid, M. A., & Hersugondo, H. (2024). ESG disclosure's positive impact on financial performance in Indonesia's growth. *Research Horizon*, *4*(6), 25-34.

Olivia, H., Athar, G. A., Nasution, T. A., & Hidayat, S. (2021). Kinerja keuangan perbankan syariah: Tinjauan dari intellectual capital pada BNI Syariah. *Ekonomi, Keuangan, Investasi dan Syariah (EKUITAS)*, *3*(2), 97-103.

Putri, R. A., Maryani, M., & Damayanti, D. (2023). Pengaruh intellectual capital terhadap kinerja keuangan perusahaan makanan dan minuman yang terdaftar di Bursa Efek Indonesia. *Jurnal Akuntansi, Keuangan, dan Manajemen*, *4*(4), 287-299.

Rahajeng, D. K., & Hasibuan, N. Z. (2020). Does intellectual capital matter? A case study of Indonesia sharia banks. *The Indonesian Journal of Accounting Research*, *23*(2), 155-182.

Rahmadi, I. H., & Mutasowifin, A. (2021). Pengaruh intellectual capital terhadap kinerja keuangan dan nilai perusahaan (Studi kasus perusahaan sektor keuangan yang terdaftar di Bursa Efek Indonesia tahun 2017-2019). *Inobis: Jurnal Inovasi Bisnis dan Manajemen Indonesia*, *4*(2), 279-294.

Rossiana, G. (2018). *Laba bank syariah Januari 2018 Rp 329 miliar, turun 12,03%*. CNBC Indonesia. Retrieved on September 1, 2025, from https://www.cnbcindonesia.com/syariah/20180327192123-29-8801/laba-bank-syariah-januari-2018-rp-329-miliar-turun-1203

Sabir, M., & Husain, F. (2022). *Analisis kinerja keuangan bank* (Zulfaidah, Ed.; 1st ed.). Yogyakarta: Cahaya Arsh Publisher.

Saragih, A. E., & Sihombing, U. T. (2021). Pengaruh intellectual capital, good corporate governance, dan ukuran perusahaan terhadap kinerja keuangan perusahaan perbankan yang terdaftar di Bursa Efek Indonesia. *Jurnal Riset Akuntansi & Keuangan*, *7*(1), 1-17.

Silitonga, D. (2022). *Kinerja keuangan dan profitabilitas bank* (Andrianto, Ed.; 1st ed.). Jakarta, Indonesia: CV ZT Corpora.

Subarkah, J. (2021). Pengaruh value added capital employed, structural capital value added dan dewan direksi terhadap kinerja keuangan. *Jurnal Akuntansi dan Pajak*, *22*(1), 355-366.

Suzan, L., & Rini, A. C. (2022). Pengaruh komponen intellectual capital berdasarkan metode Pulic terhadap kinerja keuangan perusahaan (Studi empiris pada perusahaan yang terdaftar dalam indeks LQ45 periode 2017-2020). *Jurnal E-Bis*, *6*(2), 498-512.

Tanjung, M. F., & Aulia, D. (2022). Dampak financial technology (fintech) dan intellectual capital terhadap kinerja keuangan perbankan komersial di Indonesia. *Seiko: Journal of Management & Business*, *4*(3), 413-426.

Wiratno, A., & Sukirman. (2012). Analisis intellectual capital terhadap kinerja BUMN. *Jurnal Gentiaras Manajemen dan Akuntansi*, *4*(1), 11-24.

Yudhanto, W., Sadewo, S. T., Giovanni, A., Sijabat, Y. P., & Ananda, E. S. C. (2025). Leverage and GCG effects on financial performance moderated by firm size. *Research Horizon*, *5*(4), 1141-1152.

Yulinda, N., Nasir, A., & Savitri, E. (2020). The effect of enterprise risk management disclosure and intellectual capital on firm value. *Jurnal Ilmiah Akuntansi*, *4*(1), 102-114.

Acknowledgment

We gratefully acknowledge the contributions of individuals who supported the completion of this article.

Funding Information

This research did not receive any funding.

Conflict of Interest Statement

The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.