

Intellectual Capital as a Determinant of Sustainable Profitability of Islamic Banks

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ABSTRACT

This study aims to examine the effect of Financing to Deposit Ratio (FDR) on the profitability of Islamic Rural Banks (BPRS) in East Java, with Intellectual Capital (IC) as a moderating variable. Using a quantitative approach, the study analyzes secondary financial data from 15 BPRS for the 2020–2023 period. Profitability is measured by Return on Equity (ROE), while IC is assessed using the Value Added Intellectual Coefficient (VAICTM), which includes Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA). The results indicate that FDR has a significant positive effect on ROE, implying that effective utilization of third-party funds through financing contributes positively to profitability. However, when IC is introduced as a moderating variable, the relationship between FDR and ROE becomes negative, suggesting that IC weakens the direct effect of FDR on profitability (quasi moderation). This indicates that high financing aggressiveness without strong intellectual capital may lead to increased risk and reduced profitability. The findings highlight the strategic role of IC consisting of human, structural, and relational capital in strengthening risk management and operational efficiency. Therefore, Islamic banks are encouraged to invest in intellectual capital development to ensure sustainable profitability and competitive advantage in the long term.

Keywords: Financing to Deposit Ratio, Intellectual Capital, Islamic Rural Banks, Profitability, ROE.



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INTRODUCTION

The Islamic Banking and Finance System is built on the principles of interest abolition and economic justice. This concept is designed to comply with the rules of Sharia (Hassanein & Mostafa, 2023). Indonesian Islamic banking shows that commercial Islamic banks are currently in a phase of rapid development (Jati et al., 2020). Increasingly tight competition makes information on the financial performance of Islamic banking very necessary. Banks are required to improve

financial and non-financial performance in order to maintain the trust of capital owners and investors. In addition, the trust of customers who invest and use bank services is also a top priority that must be maintained (Wahyuni et al., 2023).

This sector now plays an important role in supporting national economic growth along with the increasing number of Islamic banks and Islamic business units. The economic growth of a country is supported by the role of banks in securing funds, protecting assets, building savings, transferring wealth across time, and reducing redundancy through credit policies. Banks also play a role in mobilizing financial resources and providing credit as a medium of exchange to support economic activities (Al-Jarrah et al., 2024). In July 2022, Islamic banking assets increased by 14.21% year on year (yoy) to IDR 721 trillion, while third-party fund collection grew by 13.55% to IDR 572 trillion, surpassing the growth in national banking third-party fund collection which only reached 8.62% with a total of IDR 7,898 trillion (Riza Salman et al., 2024).

Although Islamic banks have shown significant growth, optimal management of the Financing to Deposit Ratio (FDR) remains a complex challenge. Financing to Deposit Ratio (FDR) is an indicator that measures the efficiency of banks in allocating their resources. The best distribution in banking is measured based on Central Bank regulations, which set the optimal financing to deposit ratio (FDR) at 85%. An FDR ratio approaching this number indicates the ability of Islamic banks to manage funds efficiently. Optimal FDR will contribute to increasing income and overall performance of Islamic banks (Nugroho, 2022). Many Islamic banks face liquidity problems due to excessively high FDR, which increases the risk of non-performing loans (NPF) and suppresses profitability.

In the context of Islamic banking, profitability is not only determined by financial indicators such as FDR, but is also influenced by intangible assets such as intellectual capital.. Intellectual Capital includes intangible assets such as information, knowledge, intellectual property, and experience. These assets can be identified, utilized, and processed to create greater value (Faozan et al., 2023). The main elements of intellectual capital (IC) are divided into three parts. First, VACE includes individuals who interact with the company and receive services from the company. Second, VAHC includes employee expertise in producing goods or services and building good relationships with customers, including education, work experience, creative skills, and attitudes toward customers and colleagues. Third, STVA consists of the company's infrastructure designed to meet market needs, such as technology systems, trademarks, operational systems, training courses, and patents (Wahyuni et al., 2023). Most Islamic banks have not realized the importance of intellectual capital as a strategic asset to improve competitiveness and business sustainability. The lack of focus on building structural and relational capital hinders Islamic banks in creating strong long-term relationships with customers and stakeholders. The influence of Intellectual Capital (IC) on the financial performance of banks and other financial institutions has been the focus of studies by many scholars around the world. Researchers use the VAIC (Value Added Intellectual Capital) model because it is simple and utilizes easily accessible financial data. This approach allows for an in-depth analysis of the relationship between IC and financial performance (Mustafa et al., 2024)

Intellectual capital well-managed assets can strengthen the bank's competitiveness and support the achievement of financial goals, including increasing profitability. Education and training of human resources who understand sharia principles and modern technology have not been a top priority in many Islamic banks. Along with the development of the knowledge-based economy, the role of intellectual capital in driving the financial performance of companies, including banks, is increasingly recognized. Previous studies have shown that intellectual capital can contribute positively to company performance by increasing operational efficiency, product innovation, and customer loyalty. In the context of Islamic banking, well-managed intellectual capital is expected

to strengthen the competitiveness of banks and support the achievement of financial goals, including increasing profitability.

This research is important because the results of this study are expected to help Islamic bank management in understanding the importance of optimal FDR management and the role of intellectual capital in supporting bank financial performance. This study offers novelty by including intellectual capital as a moderating variable that is rarely studied in the context of Islamic banking in Indonesia, thus contributing to the literature and practice of Islamic bank management. This study offers novelty by using longitudinal data to analyze the trend of sustainability of Islamic bank profitability over a certain period of time. In addition, this study focuses on the context of Islamic banking in Indonesia with a local regulatory and cultural perspective. This study aims to identify the significant influence of each IC component on the sustainability of Islamic bank profitability, as well as provide strategic recommendations for optimizing IC in supporting the competitiveness and sustainability of the Islamic banking industry.

METHODS

This study uses a quantitative approach that aims to test the effect of Financing to Deposit Ratio (FDR) on BPRS profitability with Intellectual Capital as a moderating variable. The population in this study were all Sharia Rural Financing Banks (BPRS) in East Java Province. The sampling technique was carried out by purposive sampling with the criteria of the availability of financial report data for the period 2020–2023, so that 15 BPRS were obtained as research samples.

The data used are secondary data sourced from the annual financial reports of each BPRS published through the official website of the bank or the Financial Services Authority (OJK). The profitability variable is measured using Return on Equity (ROE), while Intellectual Capital is measured using the Value Added Intellectual Coefficient (VAIC™) method which consists of three main components: Value Added Capital Employed (VACA), Value Added Human Capital (VAHU), and Structural Capital Value Added (STVA).

The test in this research was conducted in several stages. The first stage is a multiple regression test with model selection. estimation, namely the Chow test, the Hausman test, and the Lagrange Multiplier test. The second stage of the assumption test classic which includes multicollinearity tests using the correlation coefficient, heteroscedasticity test using the Glejser test. And the third stage is the hypothesis test using the T statistical test, the F statistical test. To find out The results of moderation can be known by the MRA test through the results of the panel data linear regression test. Test tools In this research, E-views 13 was used. The following are the hypotheses in this research:

H1 : RatioFinancing to Deposit Ratioaffect profitability

H2: Intellectual Capital is able to moderateFinancing to Deposit Ratioon profitability

RESULTS AND DISCUSSION

Based on the results of the Chow test estimation from Table 1, it shows that the cross-section probability value F (0.0674) is greater than the critical probability ($\alpha=5\%$ or 0.05). Thus it is known that the model is good and appropriate using panel data regression analysis of the Common Effect Model (CEM). Testing to determine the best model is continued using the Lagrange Multiplier. Thus it is known that the model is good and appropriate using panel data regression analysis of the Common Effect Model (CEM) model.

Table 1. Chow Test and TestLagrange Multiplier

Testing	Statistics	df	Prob.	Results	Conclusion
Cross-section F	1.821405	(14.42)	0.0674	0.0674 > 0.05	CEM
Breusch Pagan			0.1434	0.1434 > 0.05	CEM

Source: Eviews Processing Results 13, 2025

The selected model is CEM, therefore the classical assumption test must be carried out. The classical assumption test used is multicollinearity and heteroscedasticity. Based on the resultsmulticollinearity test using the correlation coefficient from Table 2 shows thatThe correlation coefficient of FDR and IC is $-0.034 < 0.85$, the correlation coefficient of FDR and FDR*IC is $0.665 < 0.85$, and the correlation coefficient of IC and FDR*IC is $0.677 < 0.85$. So it can be concluded that it is free from multicollinearity.

Table 2. Test Multicollinearity

	FDR	IC	FDR*IC	Conclusion
FDR	1	-0.034	0.665	Free from Multicollinearity
IC	-0.034	1	0.677	Free from Multicollinearity
FDR*IC	0.665	0.677	1	

Source: Eviews Processing Results 13, 2025

Based on the resultsheteroscedasticity test using the Glejser test from Table 3 shows thatThe IC prob value is $0.9852 > 0.05$, the IC prob value is $0.2099 > 0.05$ and the FDR*IC prob value is $0.7498 > 0.05$, so it can be concluded that it is free from heteroscedasticity.

Table 3. Heteroscedasticity test

Variables	Prob	Results	Conclusion
FDR	0.9852	$0.9852 > 0.05$	Free heteroscedasticity
IC	0.2099	$0.2099 > 0.05$	Free heteroscedasticity
FDR*IC	0.7498	$0.7498 > 0.05$	Free heteroscedasticity

Source: Eviews Processing Results 13, 2025

This test aims to determine the influence between independent variables on dependent variables. The linear regression equation model of panel data is as follows:

$$ROE = \alpha + b_1FDR + b_2IC + b_3FDR*IC + e$$

The following are the results of the panel data linear regression analysis test:

Table 4. Linear Regression Analysis Test

Variables	Coefficient
Constant	-0.3729
FDR	0.1823
IC	0.1397
FDR*IC	-0.0595

Source: Eviews Processing Results 13, 2025

The table above can be arranged into a multiple linear regression equation as follows:

$$ROE = -0.3729 + 0.1823FDR + 0.1397IC - 0.0595FDR*IC$$

The constant value is -0.3729 or -37.29% means that without the FDR variable, the ROE variable will experience a decrease of 37.29%.The beta coefficient value of the FDR variable is 0.1823 or 18.23%. If the value of other variables is constant and the FDR variable increases by 1%, the ROE variable will increase by 18.23%.The beta coefficient value of the IC variable is 0.1397 or

13.97%. If the value of other variables is constant and the IC variable increases by 1%, the ROE variable will increase by 13.97%. The beta coefficient value of the FDR*IC interaction variable is -0.0595 or 5.95%. If the value of the other variables is constant and the FDR*IC variable increases by 1%, the ROE variable will decrease by 5.95%.

The t-test is used to determine the effect of each independent variable on the dependent variable partially. The following are the criteria for this test: the level of significance used is 5 percent, in other words if $P(\text{probability}) > 0.05$ then it is declared insignificant.

Table 5. t-test

Variables	t-Statistics	Prob.	Conclusion
FDR	2.932457	0.0049	Influential
IC	5.737137	0.0000	Influential
FDR*IC	-4.686250	0.0000	Influential

Source: Eviews Processing Results 13, 2025

The F test is used to determine the effect of all independent variables on the dependent variable simultaneously. The results of the simultaneous test are shown in Table 6 below:

Table 6. F Test Results

F Test (Prob)	Conclusion
0.000000	Influential

Source: Eviews Processing Results 13, 2025

The results of the F statistical test in the table above to test the effect of FDR, IC and interaction on Profitability, the F Statistic Prob value is 0.000000, this means the level of significance $< 5\%$ ($\alpha = 0.05$) which means it can be concluded that FDR, IC and interaction on Profitability.

The results of this study indicate that the Financing to Deposit Ratio (FDR) has a positive effect on profitability. This finding confirms that the greater the proportion of third-party funds that the bank has successfully distributed in the form of financing, the greater the potential profit generated from the capital owned by the bank. This is because the funds collected are utilized optimally, are not idle, and generate profits from financing margins. Bank Indonesia recommends an ideal FDR range of 78% to 100%, as an effort to maintain a balance between liquidity and profitability. Thus, the bank obtains a profit margin, service fee, or profit sharing from the financing distributed, which ultimately increases revenue and net profit. This net profit then has an impact on increasing ROE, which is a ratio that measures the company's ability to generate profits on equity invested by shareholders (Abdillah et al., 2016). According to Chandra Dewi et al. (2023), the effectiveness of the use of funds in the form of financing is one of the main sources of income for Islamic banks. If the financing can be managed with controlled risk, it will provide a positive contribution to net profit, which directly increases ROE. This shows that high intermediation performance can be a positive signal for bank profitability. The results of this study are in line with studies conducted by Yanti & Mumun Maemunah (2020), who found that FDR has a positive effect on ROE in Islamic banks in Indonesia. They explained that increasing financing sourced from third party funds will increase profit sharing margin income, thereby driving an increase in net profit. In the long term, this increases equity value and creates added value for shareholders. In the context of BPRS, effective management in channeling financing to productive sectors such as MSMEs can increase returns on equity. This is confirmed by Muhaemin & Wiliasih (2016) which states that BPRS with high FDR tend to be more aggressive in their financing strategies, and when carried out selectively and carefully, this strategy will increase the possibility of achieving high profitability. In addition, in the context of managerial strategy, increasing FDR also shows the bank's ability to build public trust so that it is able to collect large amounts of DPK, while also showing the capability to

channel funds productively. The combination of the two will strengthen the bank's financial structure and create efficiency that leads to a sustainable increase in ROE (Nurmasari, 2022).

The results of the study indicate that the FDR variable has a negative effect on ROE with IC as a moderating variable. This shows that the higher the IC as a moderating variable, the weaker the relationship between FDR and ROE. The type of moderation is quasi moderation, meaning that it moderates the relationship between the independent variable, namely FDR, and the dependent variable, namely ROE, which is also an independent variable. This is because the moderating variable, namely IC, has an effect on ROE, and the interaction variable also has an effect on ROE. This finding indicates that the higher the proportion of third party funds channeled in the form of financing, the more potential it has to reduce the rate of return on equity owned by the bank, in this case the Sharia People's Financing Bank (BPRS). The negative effect of FDR on ROE can occur because an increase in financing that is not accompanied by good financing quality can increase the risk of problematic financing, which ultimately suppresses profitability (Nawaz & Haniffa, 2017).

In the context of Islamic banking, FDR describes how much efficiency is in distributing funds. Although high FDR is often interpreted as a form of bank aggressiveness in distributing financing, this aggressiveness can be counterproductive if not managed carefully. When financing is distributed to sectors or customers who do not have adequate creditworthiness, the risk of default increases, which will have an impact on increasing the allowance for impairment losses (CKPN), thus eroding net profit and having an impact on decreasing ROE (Pardistya, 2021). However, a more interesting finding from this study is that Intellectual Capital (IC) is proven to be able to moderate the relationship between FDR and ROE. In other words, when IC in a sharia bank is at a high level, the negative influence of FDR on ROE can be suppressed. This shows that the management of intellectual resources, such as managerial competence, business process efficiency, and relationships with customers and other stakeholders, plays an important role in maintaining the financial performance of banks, especially in the context of high financing.

Intellectual Capital consists of three main components, namely human capital, structural capital, and relational capital (Pulic, 2008). These three elements, if managed well, can improve the quality of decision-making in financing distribution, operational efficiency, and increase customer loyalty. In the context of moderation of FDR, IC helps banks to minimize problematic financing through better risk management strategies and the use of information technology that supports more accurate financing feasibility analysis (Kamath, 2008). Previous research also supports these findings. For example, Kurniawati (2023) shows that IC can improve the efficiency and effectiveness of Islamic bank operations, thus strengthening the positive relationship between financing management efficiency and profitability. In other words, banks with high IC are able to optimize the financing channeled so as to generate more stable income and lower risk, even when the FDR is at a high level.

From a managerial perspective, the results of this study provide important implications. Islamic bank management not only needs to pay attention to financial indicators such as FDR, but also must develop and manage IC strategically. Investment in employee training, information system development, and building long-term relationships with customers are steps that can strengthen IC. This is in line with the view that banks with high levels of IC tend to be more adaptive and innovative in dealing with external and internal risks (Ulum et al., 2014).

CONCLUSION

This study examines the effect of Financing to Deposit Ratio (FDR) on the profitability of Sharia Rural Banks (BPRS) in East Java with Intellectual Capital (IC) as a moderating variable. The results of the study indicate that FDR has a significant positive effect on Return on Equity (ROE), indicating that optimizing the distribution of third-party funds through financing can increase bank profitability. However, when IC is entered as a moderating variable, the relationship between FDR and ROE changes to negative, indicating that IC has a quasi-moderation effect that weakens the positive effect of FDR on ROE.

Although in general the increase in FDR is considered a positive signal in the bank's intermediation strategy, this study reveals that aggressive financing without the support of effective risk management can lead to problematic financing and reduce profitability. This is where the strategic role of IC becomes important. When banks have strong human capital, structural capital, and relational capital, the negative impact of high FDR can be reduced through increased efficiency, accuracy of credit analysis, and good relationships with customers and stakeholders.

Good IC management can improve the effectiveness of bank intermediation and maintain the sustainability of profitability in the long term. Therefore, BPRS management is advised not only to focus on conventional financial indicators, but also to actively develop and manage intellectual assets as part of a sustainable business strategy. From a managerial perspective, the results of this study provide important implications. Islamic bank management not only needs to pay attention to financial indicators such as FDR, but also must develop and manage IC strategically. Investment in employee training, information system development, and building long-term relationships with customers are steps that can strengthen IC. This is in line with the view that banks with high levels of IC tend to be more adaptive and innovative in dealing with external and internal risks.

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